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**Southern California Association of
Marine Invertebrate Taxonomists**

3720 Stephen White Drive
San Pedro, California 90731

November 1985

Vol. 4, No.8

| | |
|--------------------------|--|
| Next Meeting: | December 9, 1985 |
| Guest Speaker: | Dr. Bruce Thompson, Benthic Ecologist Southern California Coastal Water Research Project |
| Place: | Cabrillo Marine Museum 3720 Stephen White Drive San Pedro, Ca. 90731 |
| Specimen Exchange Group: | Oligochaeta |
| Topic Taxonomic Group: | Sipuncula and Echiura |

MINUTES FROM OCTOBER, 21 1985

Guest Speaker - Dr. Burton Jones presented results of his 4 month oceanographic survey of White's Point. A study site was established around the L.A. County Sanitation Districts outfall. Influences on the oceanographic conditions at the 4 km by 10 km site include natural upwelling of nutrient rich seawater and diffusion of sewage effluent. Data was collected by monitoring weather and treatment plant conditions, as well as using shipboard and moored instruments to record water temperature, ocean currents, wind speeds, ammonia concentrations, bacteriological counts and productivity, and chlorophyll levels.

Use of this information assists in predicting the distribution of the outfall's effluent plume. It is clear from this study that the spread of the effluent plume is unequally distributed in a manner that permits 1% of the plume to extend 2 km in 3 hours and that within 6 hours 1% of the plume will extend beyond the boundary of the study area. In concluding, Dr. Jones explained that predicting an effluent plume distribution is not as certain as hoped due to the influences of semi-diurnal changes and tidal fluxes. Good descriptions of oceanographic conditions also require a rapid (less than 10 hours) sampling of the study area. It was also found from this study that ammonia concentrations provide a reliable tracer of effluent plume movement. Additional correlations between bacteriological counts, productivity and ammonia levels can improve prediction of effluent plume distribution

Funds for this publication provided in part by
Chevron U.S.A., Inc., Arco Foundation, and Texaco, Inc.

Christmas special. Cabrillos Marine Museum will have a special opening of their gift and book shop during the December SCAMIT meeting to permit attendees to fill their Christmas stockings with the latest in marine trinkets and books. Last year's shopping was a big success for everyone. With your participation, this year's will also succeed. Shop early, shop often.

Recent publications of interest include the following:

Polychaetes: British Amphinomida, Spintherida, and Eunicida. Keys and notes for the identification of the species. By G.D. George G. Hartmann-Schroder. 1985. 221 pages. 74 figures.

This is the first of an 11 volume subseries, within the Synopses of the British Fauna, dealing with polychaetes. Volume 1 includes accounts of biology, morphology, and ecology. Methods for collection, sorting examination, and storage are also discussed. World-wide keys for the orders and families are also included.

This volume is available from Cambridge University Press. 32 East 57th Street, New York, New York. 10022. Price - \$24.75.

Upcoming meetings:

December 27-30 Western Society of Naturalists. Monterey, Ca.

December 26-31 American Society of Zoologists. Baltimore, Md.

List of specimens from November 18, 1985:

| | |
|----------|--|
| AHF 40 | <u>Eupolytmnia heterobranchia</u> (Johnson, 1901) |
| AHF 41 | <u>Thelepus crispus</u> Johnson, 1901 |
| AHF 42 | <u>Neoleprea spiralis</u> (Johnson, 1901) |
| CMM 9 | <u>Spinospaera oculata</u> Hartman, 1944 |
| CMM 10 | <u>Pista alata</u> Moore, 1909 |
| CMM 11 | <u>Polycirrus</u> sp. |
| CMM 12 | <u>Pista elongata</u> Moore, 1909 |
| HYP 49 | <u>Pista</u> sp. B [provisional species by S. Williams, AHF] |
| LACO 61 | <u>Streblosoma</u> sp. B [provisional species by S. Williams, AHF] |
| LACO 62 | <u>Terebellides californica</u> Williams, 1984 |
| LACO 63 | <u>Lanice conchilega</u> (Pallas, 1766) |
| OCS D 58 | <u>Amage scutata</u> Moore, 1923 |
| OCS D 59 | <u>Streblosoma crassibranchia</u> Treadwell, 1914 |
| OCS D 60 | <u>Pista disjuncta</u> Moore, 1923 |
| OCS D 61 | <u>Pista disjuncta</u> Moore, 1923 |
| MBC 37 | <u>Thelepus setosus</u> (Quatrefages, 1865) |
| MBC 38 | <u>Nicloea</u> sp. A [provisional species by L. Harris, MBC] |
| PL 61 | <u>Pista alata</u> Moore, 1909 |
| PL 62 | <u>Pista</u> sp. B [provisional species by S. Williams, AHF] |



JOB ANNOUNCEMENT

CURATORIAL ASSISTANT (INVERTEBRATES)

LOS ANGELES COUNTY MUSEUM OF NATURAL HISTORY

The L.A. County Museum of Natural History is seeking a fulltime Curatorial Assistant to work in the Section of Invertebrates. Candidates should have a B.S. in biology and one-years experience, or a M.S. degree in biology. Background in invertebrate zoology is essential; experience in marine sampling and scientific computer terminal use is desirable. Training and interest in echinoderm systematics and experience working with natural history collections would be particular assests. We are seeking a strongly motivated person with good organizational and communicative skills and a back-ground that suggests flexibility, resourcefulness, and the ability to work with others in small groups.

Duties will consist primarily of management of the Museum's echinoderm collections including sorting, identifying and routine curation; the incumbent will also work with other non-molluscan invertebrate collections, Duties will include assisting curators inresearch directed towards the publication of original research, maintaining laboratory and office areas (including some typing and filing), computer cataloguing, participation in field trips, answering routing questions from the public, and limited exhibit planning participation. Knowledge of the local marine invertebrate fauna would be helpful.

Starting salary is \$1540/ mo

Contact: Dr. Gordon Hendler (Curator of Invertebrates), Los Angeles Co. Museum of Natural History, 900 Exposition Boulevard, Los Angeles, CA 90007. Telephone: (213) 744-6391 or 744-3367.

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VIDEO TAPES

These tapes of SCAMIT guest lecturers are available for viewing on VHS recorders. Price for renting is \$10.00 with a \$5.00 refund upon return of the tape.

- Tape 1 () Dr. Andrew Lissner and Dr. Wilson Hom: Status of Benthic Archive Samples and Reexamination of Existing Data for California (May 14, 1983).
- Tape 2 () Dr. Pat Hutchings: Systematics of Mediomastus. (January 14, 1985)
Dr. Richard Bray: Consumer mediated Nutrient Transport into Rocky Subtidal Reefs. (February, 11, 1985)
- Tape 3 () Dr. J.L. Barnard: Amphipod Workshop Morning Lecture (March 7, 1985). Also accompanied with transcribed notes from the discussions on March 6, 8 and 11, 1985).
- Tape 4 () Dennis Lees: Hydroid assemblages of soft-bottomed habitats on the Hueneme Shelf, and factors influencing their distribution (April, 8, 1985).
- Tape 5 () Dr. Burton Jones: Physical and Chemical Processes associated with the Los Angeles County Sanitation Districts Outfall. (November 18, 1985)

TOTAL ENCLOSED: \$ _____

Mail to: Ann Martin
Biology Laboratory
Hyperion Treatment Plant
12000 Vista del Mar
Plaza del Rey, Ca 90291

Diffrentiation of Two Species of Lysippe (Polychaeta: Ampharetidae) from Shelf Depths.

Susan J. Williams
Allan Hancock Foundation

These two species are found in shelf depths (200m or less) and can co-occur. They may be separated on the basis of the branchiae, structure of the lower lip, and methyl green staining pattern. Both species have 16 thoracic setigers plus small palae and 13 thoracic uncingers; 4 pairs branchiae.

I. Lysippe A (commonly accepted as L. labiata)

1. Branchiae moderately thick, textured, and with a few dark cross-bars.
2. Prostomium clearly trilobed, with middle portion extended a bit beyond the lateral margins.
3. Lower lip broad, with faint crenulations; anterior margin of lip squared off (fig. 1)
4. Methyl green staining:
 - a. On uncinger 8, a conspicuous presetal narrow white band evident immediately after staining.
 - b. Typical ventral pattern per segment: narrow dark band, narrow light band, broad medium-dark band (fig. 2).
 - c. Torus does not stain.
 - d. After sitting in 70% ethanol for a while, the stain remains darkest at uncingers 3 and 4.
 - e. Ventrally, stains through 11 setigers

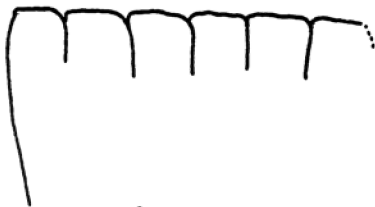


Figure 1

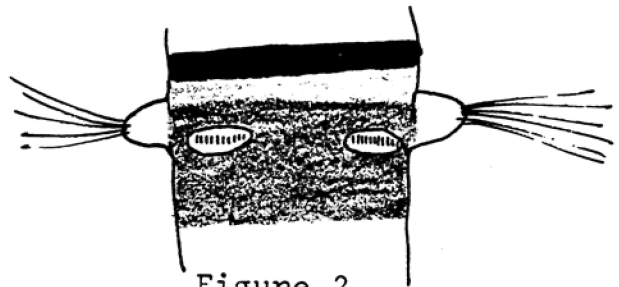


Figure 2

II. Lysippe B (undescribed)

1. Branchiae slender, textured, with many white cross-bars.
2. Prostomium more obscurely trilobed, with median part fairly flush with lateral margins or barely projecting.
3. Lower lip obviously crenulated, with well-defined rounded projections on the anterior margin (fig. 3).
4. Methyl green staining:
 - a. Uncinal tori usually with postsetal patch of green dots.
 - b. Typical ventral pattern per segment: broad light band, thin dark band, broad medium-dark band.
 - c. Ventrally, stains for 10 setigers, then stops abruptly.

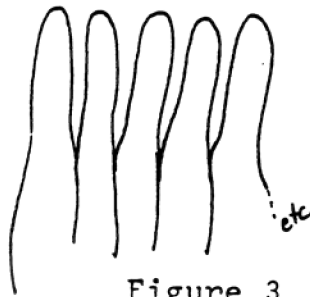


Figure 3

SCAMIT Code: LACO 59

Date Examined: October 16, 1985
Voucher by: Susan Williams (AHF)

Literature: Banse, 1979
Hartman, 1969
Uschakov, 1955

Diagnostic Characters:

1. Thoracic setigers number 14 plus palae; 12 thoracic uncinigers.
2. Palae conspicuous, number 15-25 pairs; in larger specimens these form nearly complete circles.
3. Branchiae 4 pairs, arranged in 3 anterior and 1 posterior pair; the two groups well-separated.
4. Some abdominal tori with a long cirrus at the superior end (figure 1).
5. Abdomen with 12 setigers; pygidium surrounded by a circlet of several long cirri.

Related Species and Differences:

Ampharete arctica: Pygidium with 2 lateral cirri.

Ampharete goesi: Abdomen with 17 setigers.

Ampharete labrops: Upper lip with numerous minute eyespots along ventral edge.

Additional Remarks:

Specimens fit the accepted North Pacific definition of Ampharete acutifrons. The species was first described from Greenland and there are discrepancies in the literature as regards the nature of the palae and abdominal toral cirri between the Atlantic and Pacific forms.

Distribution: Arctic to western Mexico in shelf and slope depths.

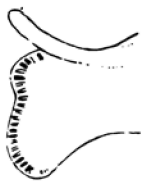


Figure 1 (from Hartman, 1969)

SCAMIT Code: LACO 60, PL 60, SCCWRP 63, MBC 36 (as A. bimaculatus)

Date Examined: October 16, 1985
Voucher By: Susan Williams (AHF)

Literature: Fauchald, 1972
Hartman, 1969
Williams, in press

Diagnostic Characters: (Pacific specimens)

1. Palae present, moderately developed.
2. Thoracic setigers number 15 in addition to the palae. NOTE: first post-paleal notosetae very small, easily overlooked. 12 thoracic uncingers.
3. Notopodia of setiger 11 (uncinger 8) slightly elevated (figure 1) and the notosetae modified, being distally minutely hirsute (figure 2). A glandular band connects the notopodia of this segment and is especially evident after staining with methyl green. A less developed glandular band is found on setiger 6.
4. Branchiae 4 pairs, arranged in 3 anterior and 1 posterior pair.

Related Species and Differences:

Anobothrus occidentalis: actually Sosane (Williams, in press)

Anobothrus trilobatus: actually Eclipsispe (Williams, in press)

Anobothrus bimaculatus and A. mancus: Deep-water species. At this point, these species are difficult to distinguish from the shallow water A. gracilis. Methyl green staining patterns show only subtle differences. Also, there are errors and discrepancies in the original descriptions.

Additional Remarks:

1. Anobothrus is easily misidentified as Ampharete arctica, due to the fairly subtle elevation of notopodia 11. By staining the specimens in a methyl green solution, the characteristic glandular band between the notopodia of that segment becomes obvious.
2. There are some errors in the diagnosis of species in Hartman's Atlas: thoracic uncingers number 12, not 13; notopodia of setiger 11, not 13 are slightly elevated. Also, the generic key to the Ampharetidae is in error. The couplet with Anobothrus states notopodia of setiger 8 modified; this should read 'uncinger 8'.
3. The California species is probably distinct from the Atlantic A. gracilis, but until a generic review is done, it would probably be best to continue using the name.

Distribution: California, in shelf depths.

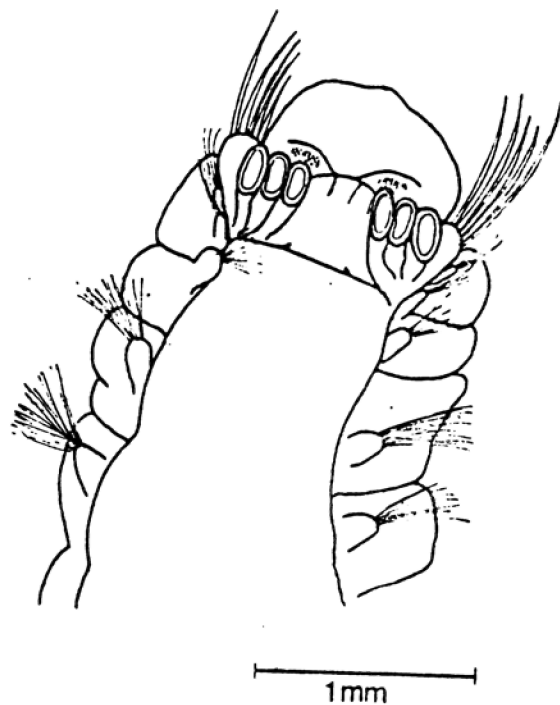


Figure 1 (from Williams, in press)

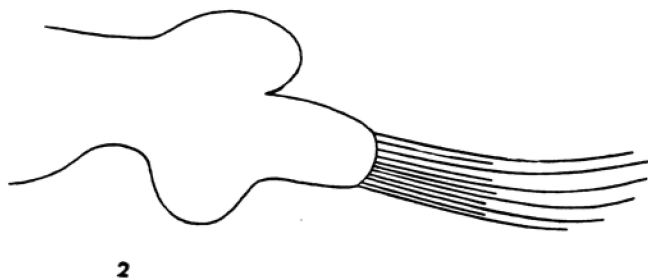


Figure 2 (from Hartman, 1969)

SCAMIT Code: AHF 39

Date Examined: October 16, 1985
Voucher By: Susan Williams (AHF)

Literature: Eliason, 1955
Hartman, 1969
Williams, in press

Diagnostic Characters:

1. Prostomium broadly rounded, divided by a transverse furrow behind which are 2 pigment patches (Figure 1).
2. Lower lip faintly crenulated.
3. Palae moderately developed.
4. Thorax with 15 setigers in addition to the palae; posterior thoracic segments (setigers 11-15) elongated, with trilobed notopodia in well-preserved specimens (Figure 2).
5. Branchiae 3 pairs, inserted in a straight line and separated by a wide interbranchial pad (Figure 1).

Additional Remarks:

This species belongs to Eclysippe Eliason, 1955 on the basis of number of branchiae and the absence of Anobothrus (sensu strictu) notopodia (Williams, in press). The California species may be separated from the European E. vanelli on the basis of degree of development of the first notosetae and methyl green staining pattern.

Distribution: Southern California, in slope and basin depths.

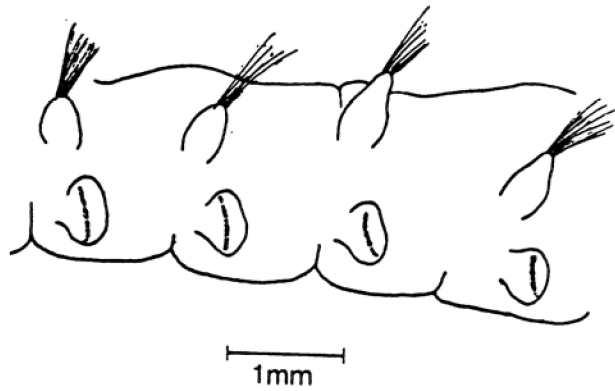


Figure 1 (from Williams, in press)

Figure 2 (from Hartman, 1969)



SCAMIT Code: MBC 35

Date Examined: October 16, 1985
Voucher By: Susan Williams (AHF)

Literature: Moore, 1923
Fauchald, 1972
Hartman, 1969

Diagnostic Characters:

1. Anterior thoracic segments fused, with fine needle-like spines in first 4 neuropodia (Figure 2). In all, 18 thoracic setigers.
2. Notosetae obvious from setiger 4; Fauchald (1972) mentions a small fascicle at setiger 3.
3. Dorsal postbranchial transverse membrane present, with 11-16 dentitions (Figure 1).
4. Nuchal hooks present; these gently curved.
5. Branchiae 4 pairs; long, subulate and often with a greenish hue.

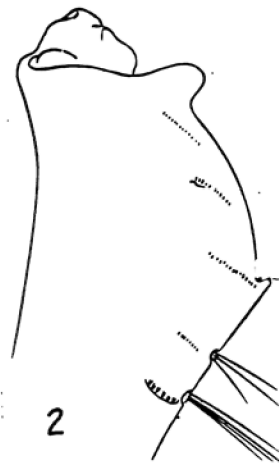
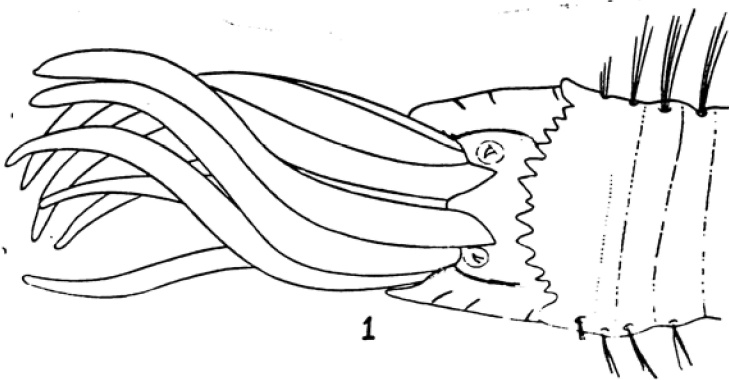
Related Species and Differences:

Melinna denticulata: 17 thoracic setigers; transverse membrane with 7-9 teeth.

Melinna elizabethae: Nuchal hooks strongly curved; transverse membrane with small dentitions.

Melinna oculata: Branchiae short, digitiform, corss-barred with dark and light bands; nuchal hooks strongly curved; transverse membrane with about 10 'rounded' dentitions.

Distribution: Central California to western Mexico, in canyon and slope depths.



Figures 1 and 2 from Hartman, 1969)

SCAMIT Code: AHF 37

Date Examined: October 16, 1985
Voucher By: Susan Williams (AHF)

Literature: Annenkova, 1937
Fauchald, 1977
Hartman, 1967
Hartman, 1969
Uschakov, 1955

Diagnostic Characters:

1. Palae present, of unusual form, being distally oblique (Figure 2).
2. Thorax with 15 setigers in addition to the palae; first notosetal fascicle minute, easily overlooked. Thoracic uncingers number 12.
3. Branchiae 3 pairs, inserted in a transverse row.
4. Smooth dorsal ridge at setiger 3 (Figure 1).

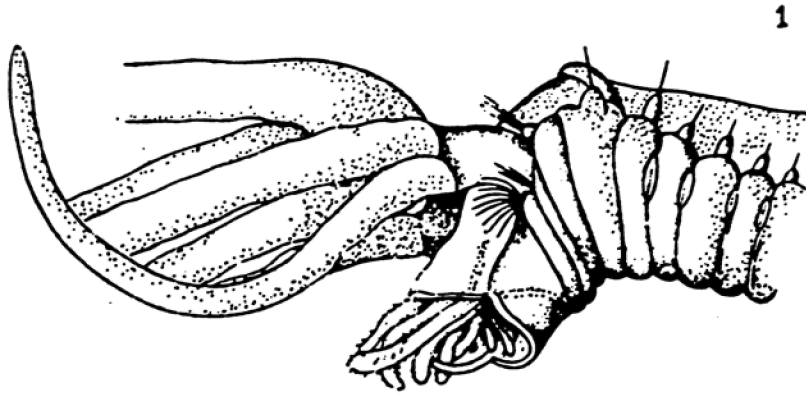
Related Species and Differences:

Melinnampharete eoa - see below.

Additional Remarks:

1. Hartman (1969) erroneously described M. gracilis with 14 thoracic setigers plus palae. Examination of the type material revealed a small fascicle of fine setae immediately following the palae.
2. This species will key to Eusamythella (Hartman, 1967) using Fauchald, 1977. The distinction between Eusamythella and Melinnampharete is based on number of thoracic setigers (15 vs 14). However, this is invalid, as Melinnampharete is described with 15, in addition to the palae (Annenkova, 1937). There are no appreciable differences between the two genera and they are most likely synonymous.
3. It is also quite likely that M. eoa Annenkova and M. gracilis Hartman are identical. Hartman (1969) states that M. eoa differs from M. gracilis in having 17 thoracic setigers, instead of 14. However, both species have 15 thoracic setigers (plus palae); Annenkova describes 17 thoracic segments, of which 15 bear notosetae. Also, Annenkova notes that 'The dorsal podial process of the third segment are hardly noticeable'. This fits with the situation in M. gracilis. Pending publication of the synonymy, Melinnampharete gracilis should be used for California specimens.

Distribution: Minimal, California to western Mexico, in basin depths.



Figures 1 and 2 from Uschakov, 1955 (M. eoa)



SCAMIT Code: AHF 38

Date Examined: October 16, 1985
Voucher By: Susan Williams (AHF)

Literature: Annenkova, 1931
Hartman, 1969
Moore, 1923 (as Melinna pacifica)
Uschakov, 1955

Diagnostic Characters:

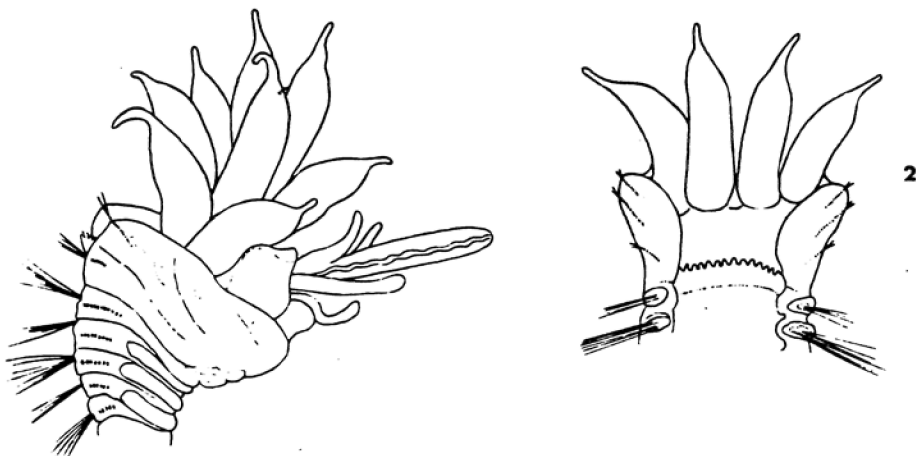
1. Anterior segments fused; neuropodia 1-4 with needle-like setae (Figure 1).
2. Thoracic setigers 17, with 13 'normal' uncingers.
3. Nuchal hooks absent.
4. Transverse membrane with 12-15 low, rounded dentitions; membrane forms shallow pocket (Figure 2).
5. Branchiae 4 pairs; thick, abruptly tapering to a filiform tip (Figure 2).
6. Oral tentacles 2 kinds: thick and slender (Figure 1).
7. Abdominal segments 30-44; pygidium a simple cone, with no anal cirri.

Related Species and Differences:

Melinnexis arctica: Largest oral tentacle cylindrical, papillated; 27 abdominal setigers; 2 anal cirri.

Melinnexis annkovae: Unpaired oral tentacle trihedral, twisted.

Distribution: Southern California to western Mexico, canyon, basin, abyssal depths.



1

Figure 1 and 2 from Hartman, 1969

Literature for Ampharetidae (Polychaeta)

- Annenkova, N. 1931. Zur Polychaetenfauna von Franz-Joseph-Land (Melinnexis gen. nov. arctica sp. n.). Zool. Anz. 95:269-272.
- _____ 1937. [The polychaete fauna of the northern part of the Japan Sea] (in Russian, English summary). Issledovaniia morei SSSR 23:139-216.
- Banse, K. 1979. Ampharetidae (Polychaeta) from British Columbia and Washington. Can. J. Zool. 57:1543-1552.
- Eliason, A. 1955. Ueue oder wenig bekannte schwedische Ampharetiden (Polychaeta). Goteborgs K. Vetensk. Handl. 6B (17):1-17.
- Fauchald, K. 1972. Benthic polychaetous annelids from deep water off western Mexico and adjacent areas in the eastern Pacific Ocean. Allan Hancock Monogr. Mar. Biol. 7:1-575.
- _____ 1977. The polychaete worms. Definitions and keys to the orders, families and genera. Nat. Hist. Mus. Los Angeles County Sci. Ser. 28-1-190.
- Hartman, O. 1969. Polychaetous annelids collected by the USNS ELTANIN and STATEN ISLAND cruises, chiefly from Antarctic seas. Allan Hancock Monogr. Mar. Biol. 2:1-387.
- _____ 1969. Atlas of sedentariate polychaetous annelids from California. Allan Hancock Foundation, University of Southern California, 812 pp.
- Moore, J.P. 1923. The polychaetous annelids dredged by the U.S.S. ALBATROSS off the coast of southern California in 1904: IV. Spionidae to Sabellariidae. Proc. Acad. Nat. Sci. Phila. 75: 179-259.
- Uschakov, P.V. 1955. Polychaeta of the far eastern seas of the USSR. Akad. Nauk SSSR, Keys to the Fauna of the SSSR 56:1-433.
- Williams, S.J. in press. Taxonomic notes on some Ampharetidae (Polychaeta) from southern California. Proc. Biol. Soc. Wash.

SCAMIT Code: AHF24

Date examined: September 10, 1984

Synonymy:

Stylaroides pluribranchiata Moore, 1923

Literature:

Hartman, 1969;
Uschakov, 1955;
Pettibone, 1954;
Moore, 1923;
Hartman, 1963.

Diagnostic characters:

All setae simple; neurosetae acicular, distally pointed with the tip drawn out as a slender filament. Branchial membrane short, rounded, with 60-70 pairs of branchiae. Notosetae of first setiger project forward, appear to be a sparse cephalic cage. Dorsal papillae broadly tubercular, terminating in filiform tip, arranged in 4-5 longitudinal rows; ventral papillae the same but smaller. Neuropodia of only 1-2 long, tiny, slender papillae. Nephridial papillae on fifth setiger, on ventrum. Bumpy appearance, greyish yellow to gold in color. When contracted the segments are very tightly folded together, so what appears to be 1 segment with 8-10 or more large dorsal papillae is actually 2 or 3 segments.

Related species and character differences:

Brada sachalina Annenkova, 1922 also has large tuberculate papillae with filiform tip, but only in 2-3 transverse rows in median segments, also only 21-22 segments.



Fig. 1 Ventral papilla, X50

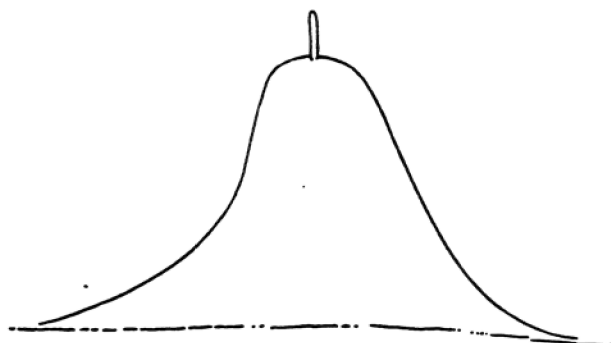


Fig. 2 Dorsal papilla, X50

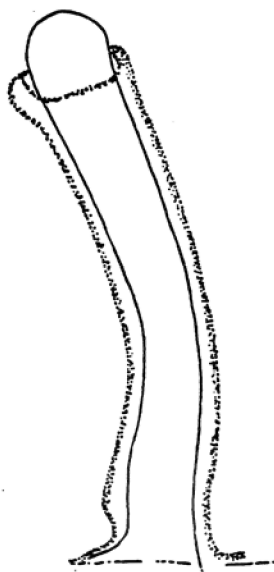


Fig. 3 Notopodial papilla, X1200

Fig. 1,2, 3 from Hartman, 1969

Distribution:

Hartman, 1969: Southern California, in deep slopes and canyons, in 123-1400m; in black sand and mud.

Hartman, 1963: Monterey Canyon through Catalina Canyon, 88-431m.

Fauchald, 1972: Southern California in deep slope and canyon depths; present records are from similar depths off Cedros Island, Baja California.

Comments:

This species was synonymized with *B. villosa* by Pettibone (1954) along with several others on the basis of extreme variability in the amount of papillae and sand incrustation. In the original description Moore says: "Parapodia consist of small flat notopodial and neuro-podial papillae, the former about three times the diameter and height of the latter, placed close together on the sides of the segments." Specimens seen have the opposite arrangement-small notopodia and large notopodia.

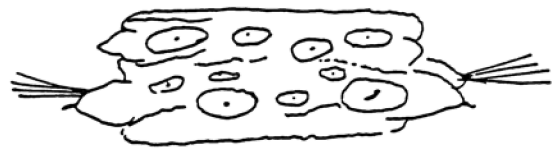
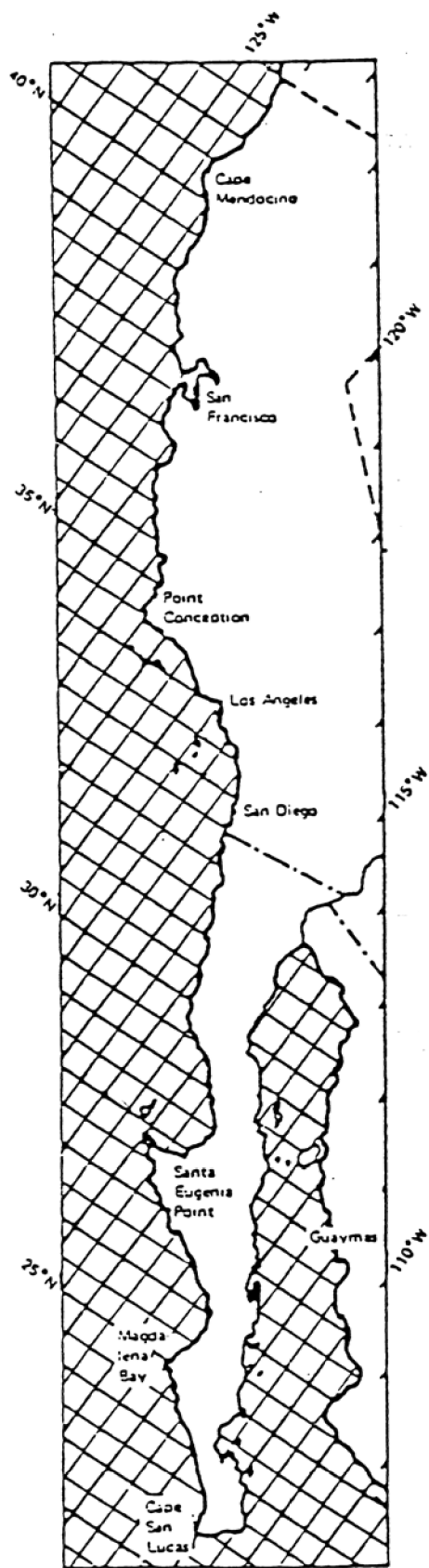


Fig. 4 Median setiger, dorsal view: 4 transverse rows of papillae in 4-5 longitudinal rows



Fig. 5 Median setiger, lateral view

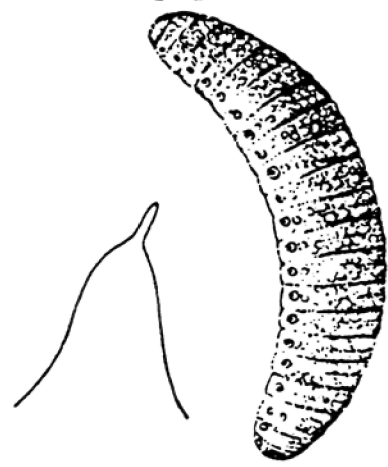


Fig. 6 *Brada sachalina*, entire organism and dorsal papillae (Ushakov, 1955)

SCAMIT Code: PL50

Date examined: September 10, 1984

Synonymy:

B. pilosa Moore, 1906

Literature:

Hartman, 1969;
Hobson and Banse, 1981;
Moore, 1906;
Berkeley and Berkeley, 1952;
Hartman, 1963;
Uschakov, 1955 (1965);
Pettibone, 1954.

Diagnostic characters:

All setae simple; neurosetae acicular, distally curved. Branchial membrane short, rounded, with about 30 pairs of branchiae. Cephalic cage absent, although notosetae of first setiger are elongate and project anteriorly. Body covered with filiform papillae, 8-12 rows in dispersed arrangement. Dorsal papillae with long, slender, filiform tip, or often with terminal enlargement. Most encrusted with sand at the base. A pair of nephridial papillae on ventrum of setiger 5, near the parapodia. Segments about 31-33 in number. Long slender papillae surrounding parapodia; forming a rosette. Grey color, fuzzy overall appearance. Sometimes the skin is inflated and translucent.

Related species and character differences:

B. inhabilis (Rathke, 1843) has numerous dermal papillae that are elongate and conical with short tapering tips, and 22-26 segments. *B. pluribranchiata* (Moore, 1923) has fewer, larger broadly tubercular papillae with short filiform tip.

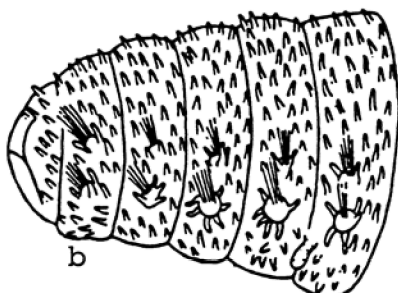
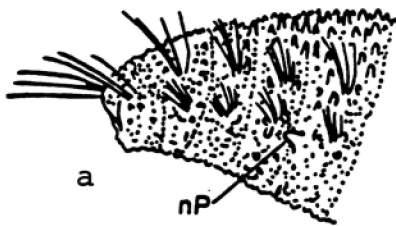


Fig. 1 Variation in cephalic cage formation



Fig. 2 Median dorsal papilla, silt encrusted



Fig. 3 Ventral papilla same magnification as Fig. 2

Distribution:

Hartman, 1969: Alaska south to southern California, in slope to basin depths, in mud, and mixed sediments; northwestern Europe.

Uschakov, 1955: Sea of Japan, Sea of Okhotsk and Bering Sea (depth: 0-592m); an arctic boreal species.

Hartman, 1963: Monterey Canyon through Tanner Canyon, 16-846m.

Comments:

"*Brada pilosa* Moore, here referred to *B. villosa* Rathke, may differ in that the first has fine, filiform epithelial papillae, densest dorsally, and median segments have 8-12 rows of papillae in dispersed arrangement. In typical *B. villosa* the median segments have coarser papillae, numbering 3-4 per row, and in dispersed arrangement."

-Hartman, 1969

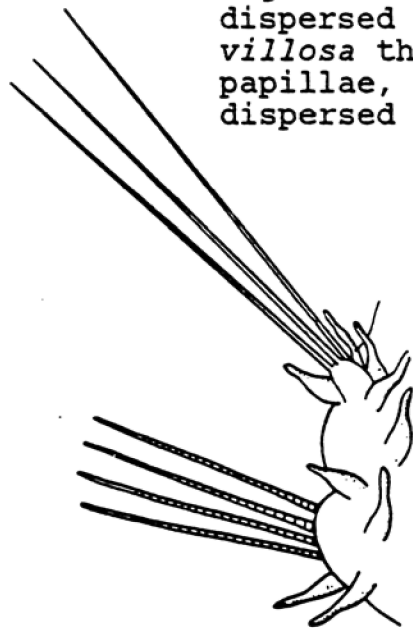
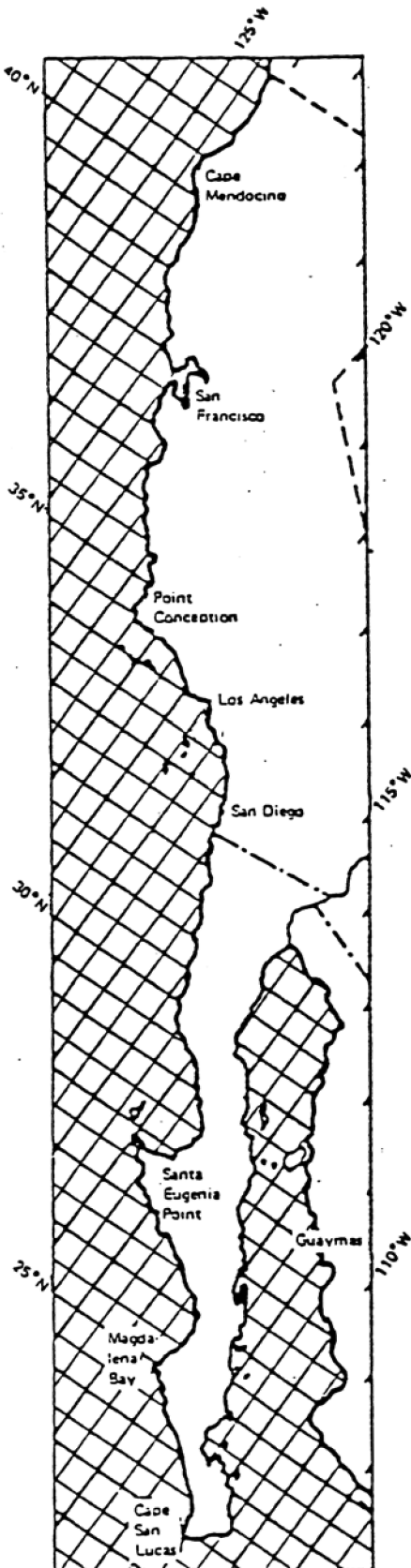


Fig. 4 Parapodium

Fig. 5 Notosetae



Fig. 6 Neuroseta



Fig. 1a from Hobson & Banse, 1981
 1b, 2, 5, 6 from Ushakov, 1955
 3, 4 from Hartman, 1969

SCAMIT Code: AHF25; LAC036

Date examined: September 10, 1984

Synonymy:

Flabelliderma commensalis (Moore, 1909) Hartman, 1969; *Flabelligera hearens* Chamberlin, 1919.

Literature:

Hartman, 1969
Light, 1978;
Moore, 1909;
Hartman, 1961;
Spies, 1977.

Diagnostic Characters:

Neurosetae of all setigers except the first, compound or pseudocompound falcigers. Rudimentary mucilaginous sheath on dorsolateral surfaces. All papillae long, pedunculate, with clavate tips, not incrustated with sand or silt. Cephalic cage present. Color in life: Adults reddish purple, ventrum dull orange yellow with green tinge, juveniles grey or light greenish-brown.

Variability:

Neuropodia may have 2 compound falcigers instead of one.

Related species and character differences:

F. infundibularis Johnson, 1901 has a very thick mucus sheath in which the bulbous tipped capillae are embedded. The papillae are translucent, unlike the obvious grey (preserved color) papillae in *F. commensalis*.

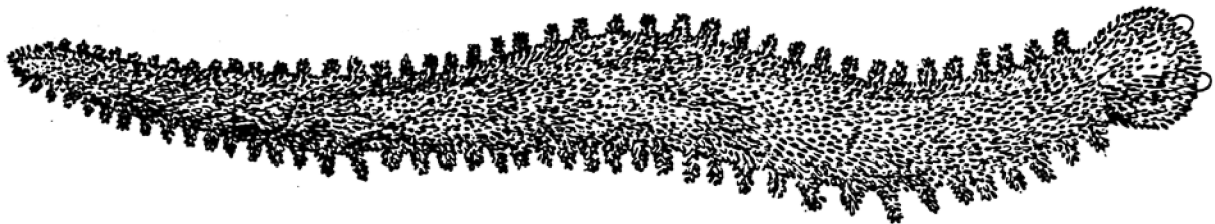


Fig. 1 Entire *Flabelligera commensalis*, mucous sheath rudimentary (Hartman, 1969)

Distribution:

Central and Southern California, intertidal to shelf depths.

Ecology:

Most commonly found on *Strongylocentrotus purpuratus* and *S. franciscanus*, also on *Centrostephanus coronatus*, on other sea urchins and some polychaetes. Free-living in kelp holdfasts and on rocky and mixed bottoms. "...uses its palps to feed on the faecal matter of its host, it will also employ its own respiratory current for feeding on loose detritus (Spies, 1975)".

-Fauchald and Jumars, 1979

Comments:

The illustrations of the whole animal in Hartman 1961 and 1969 are deceptive because they make the worm appear flattened and oval in cross-section, with very obvious cross papillation. In most preserved animals the papillation is minute and indistinguishable against the overall grey color, while the papillae of the notapodia is appressed to the body. The dorsum is flat and the neuropodia are situated ventrally, widely spaced from the notopodia.

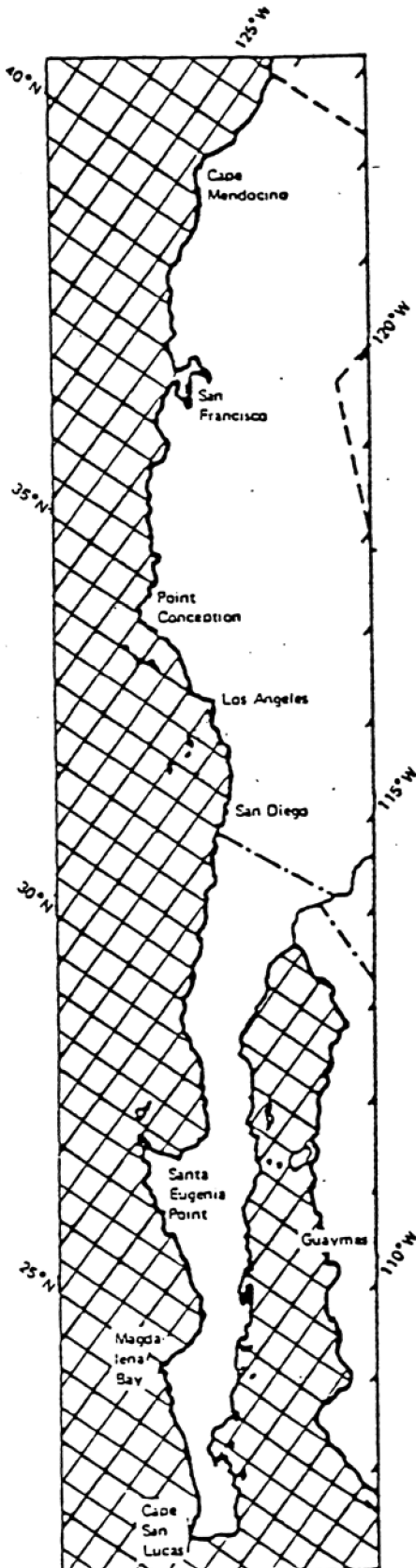


Fig. 2 Capillary setae of 1st setiger (Hartman 1969)



Fig. 3 Composite neurohook from setiger 25 (Hartman 1969)



Fig. 4 Cross section of median setiger



SCAMIT Code: HYP34, OCSD43; PL49

Date examined: September 10, 1984

Literature:

Hartman, 1969;
Hartman, 1963;
Pettibone, 1956;
Hobson and Banse, 1981.

Diagnostic characters:

Prominent cephalic cage, 4 pairs of thick branchiae, 2 pairs of much smaller lateral processes. Body uniformly and densely papillated, papillae small and closely packed. Cross striations of median region of cephalic setae widely spaced, much longer than wide.

Related species and character differences:

P. papillata (Johnson, 1901) has large papillae, well separated from each other; the cross striations of cephalic setae are barely longer than wide in median regions; 4 pairs of branchiae; generally found in rocky sediments. *P. inflata* (Treadwell, 1914) has a single row of small papillae per segment; there are 4-6 pairs of large branchiae and 12-13 pairs of much smaller branchiae; anterior end obliquely truncate; occurs intertidally in rocky areas. *P. negligens* (Berkeley and Berkeley, 1950) has neurosetae that tend to be twisted and pseudocompound, and the unidentate tips are enclosed by a indistinct hood. *P. plumosa* (Müller, 1776) apparently shares the same characteristics as *P. papillata*, and Pettibone (1956) synonymizes them. Hobson and Banse (1981) follows this synonymy.

Distribution:

Hartman, 1969: Southern California, in shelf and canyon depths, in fine green sand, silt or mixed debris.

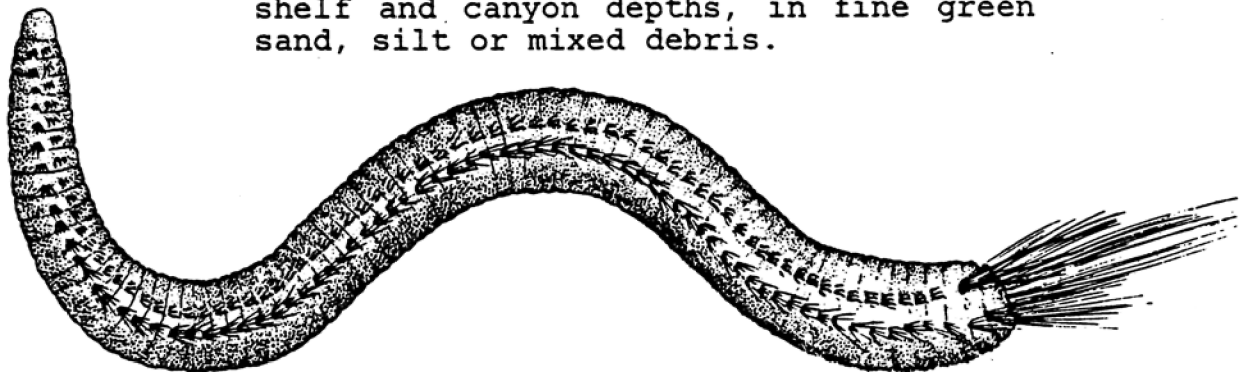


Fig. 1 Pherusa neopapillata, entire organism (hartman, 1961)

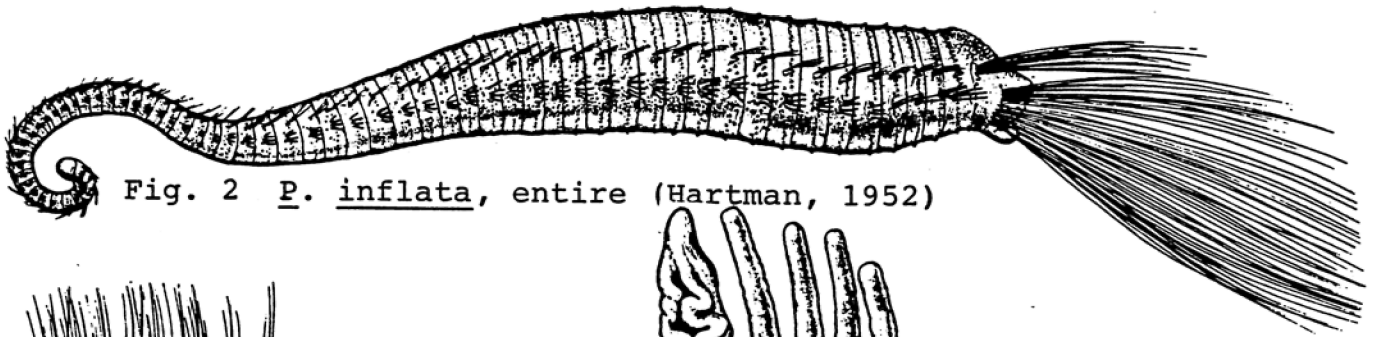


Fig. 2 P. inflata, entire (Hartman, 1952)

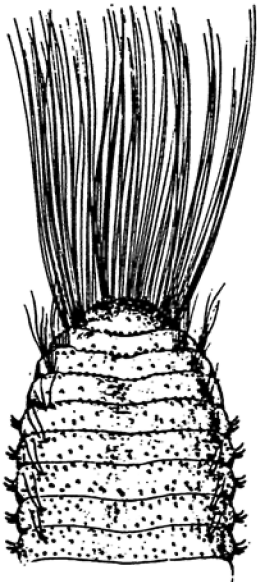


Fig. 3 P. papillata,
anterior end



Fig. 4 P. neopapillata, front and
side views, ant. end
(Hartmant, 1961)

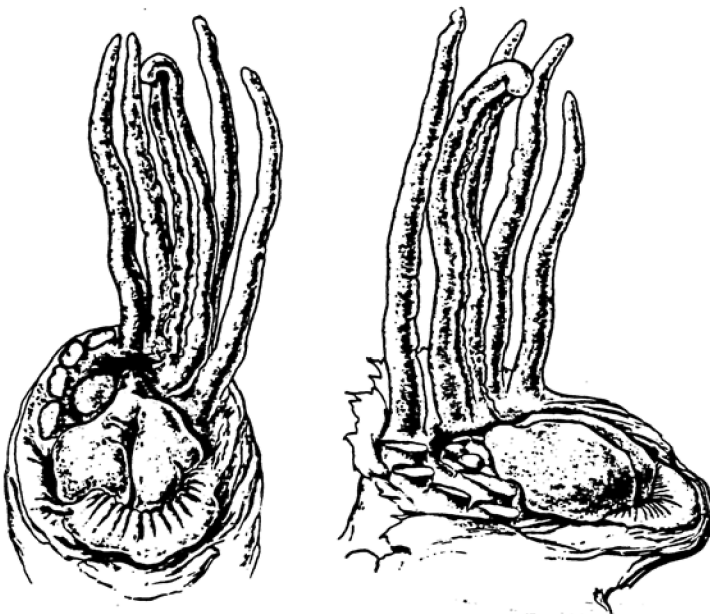


Fig. 5 P. papillata, front and side
views, ant. end (Hartman, 1961)

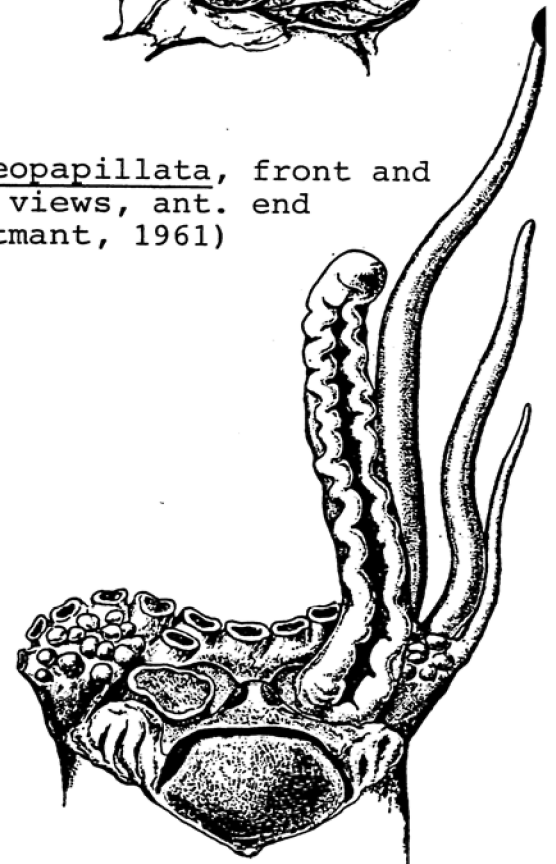
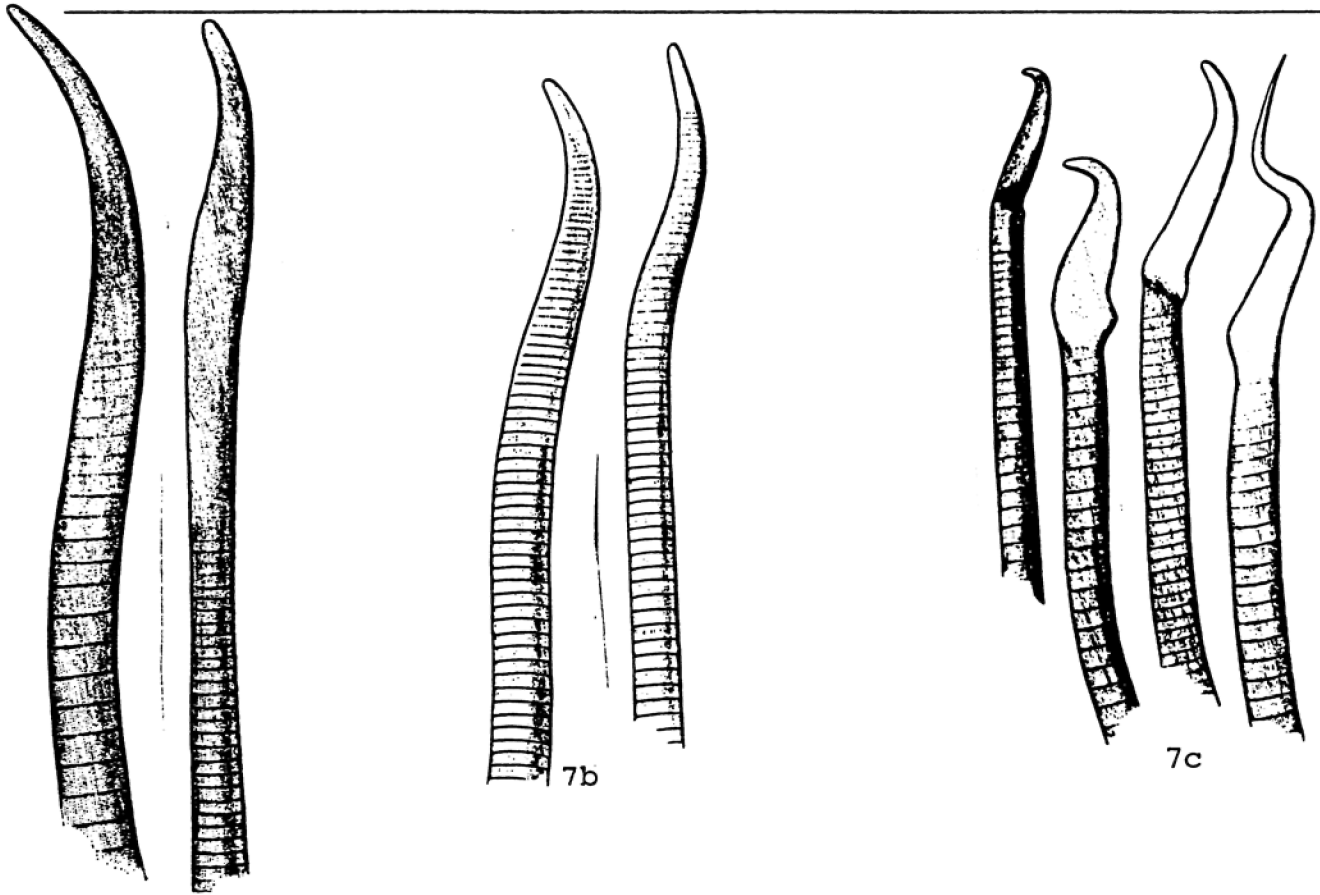


Fig. 6 P. inflata, front ant.
view (Hartman, 1952)



7a

Fig. 7 Neuropodial hooks; a. P. neopapillata, b. P. papillata, c. P. inflata (Hartman, 1961, 1952)

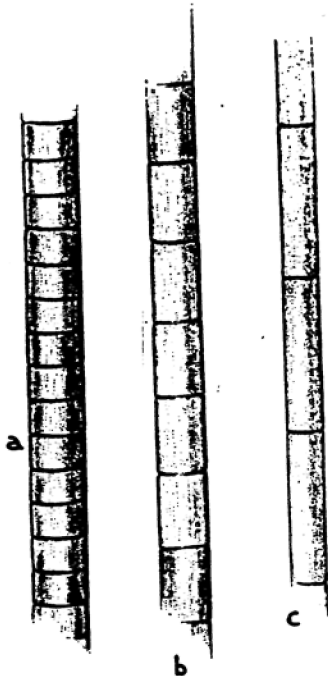


Fig. 8 P. neopapillata cephalic cage setae; a. basal, b. middle, c. post. (Hartman, 1961)

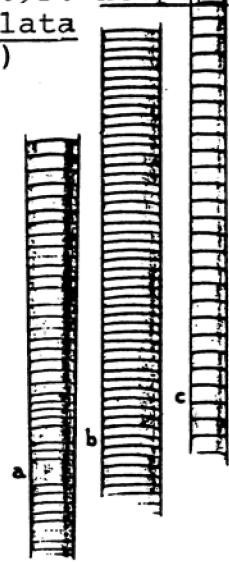


Fig. 9 P. inflata cephalic setae; a. basal, b. middle, c. post. (Hartman, 1952)

Specimen Code: PL51

Date examined: September 10, 1984

Synonym:

Scalibregma inflata Hartman and Fauchald, 1971.

Literature:

Hartman, 1969;
Blake, 1981;
Kudenov and Blake, 1978;
Hobson and Banse, 1981;
Fauvel, 1927;
Fauchald, 1972;
Imajima and Hartman, 1964.

Important characters:

T-shaped prostomium, lack of anterior acicular spines, branched gills on setigers 2-5 and prominent dorsal and ventral cirri in posterior parapodia. Overall appearance very distinctive. Preserved color rusty to bright orange.

Related species and character differences:

The genus *Scalibregma* is monotypic. However the genus *Sclerobregma* Hartman is closely related, differing mainly in the presence of acicular spines in anterior setigers. *Sclerobregma* may occur off western Mexico (see "comments" for further discussion).



Fig. 1 *Scalibregma inflatum* entire organism



Fig. 2 Anterior end, dorsal view

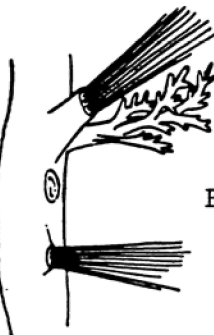


Fig. 3 Branchiate parapodium
(setigers 2-5)

Distribution:

Hartman, 1969: Western Canada south to southern California, in shelf, slope, canyon, and basin depths; in coarse sand and shelly sediments.

Fauchald, 1972: World-wide areas including mainland slope of Central American Trench.

Ecology:

"...live in galleries in soft sediment ... as much as 30-60 cm below the surface ... active burrowers and feed on detritus found in the sediment ...

Scalibregma inflatum may also feed at the surface."

Fauchald and Jamars, 1979

Comments:

Specimens from western Mexico reported by Fauchald (1972) have short, slender acicular spines in each of the first parapodia. Kudenov and Blake (1978) noted that the specimens should be re-examined because the spines are characteristic of *Sclerobregma*.

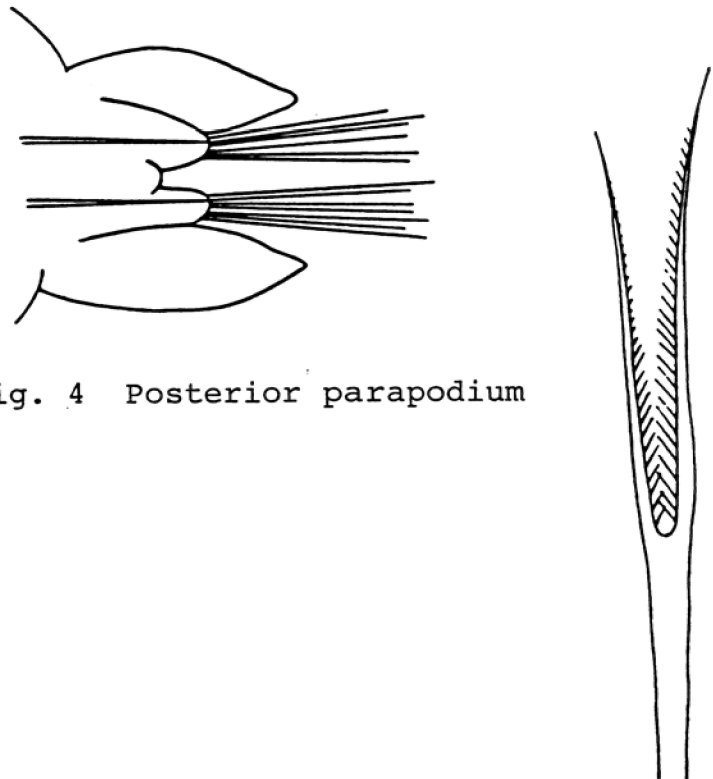
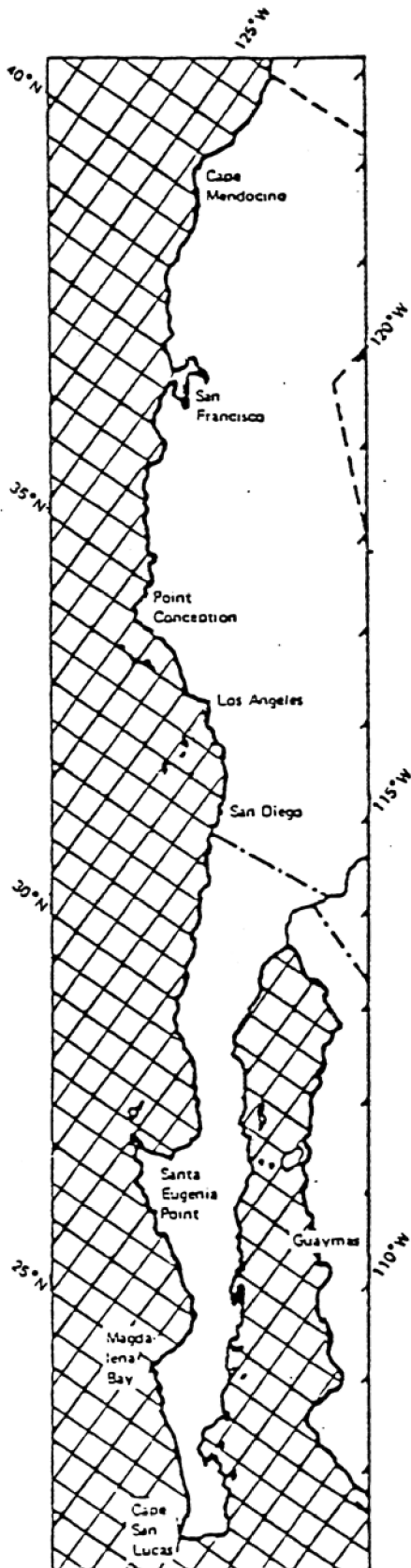


Fig. 4 Posterior parapodium

Fig. 5 Furcate setae

CHECKLIST AND BIBLIOGRAPHY OF WEST COAST CTENODRILIDAE, FLABELLIGERIDAE,
FAUVELIOPSIDAE, UNCISPIONIDAE, SCALIBREGMATDAE, AND ACROCIIRRIDAE

BY LESLIE HARRIS

MBC APPLIED ENVIRONMENTAL SCIENCES
947 Newhall Street
Costa Mesa, California 92627

CTENODRILIDAE Kennel, 1882

Ctenodrillus Claparède, 1863

=*Parthenope* Schmidt, 1957 (Preoccupied)

Ctenodrillus serratus (Schmidt, 1957)

=*Parthenope serrata* Schmidt, 1857 (cited
as *Parthenope cirrata* in Fauchald, 1977)

=*Ctenodrillus pardalis* Claparède, 1863

Central and southern California, intertidal; Europe; cosmopolitan (Hartman, 1969); British Columbia and Washington (Hobson and Banse, 1981; specific locality not cited)

FLABELLIGERIDAE Saint-Joseph, 1894

Brada Stimpson, 1854

Brada pluribranchiata (Moore, 1923) Hartman, 1959 (catalogue)

=*Stylarioides pluribranchiata* Moore, 1923

Southern California, in deep slopes and canyons, in 123-1400 m; in black sand and mud (Hartman, 1969); Southern California, in deep slope and canyon depths; the present records are from similar depths off Cedros Island, Baja California (Fauchald, 1972); Deep shelf and bathyal depths off southern California; Yaquina Bay, central Oregon, 2800 m (Fauchald and Hancock, 1981)

Brada sachalina Annenkova, 1922

=*Brada sachalina?* - Banse and Hobson, 1968

=*Flabelligera essenbergae tenebricosa* C. Berkeley, 1966

Sea of Okhotsk, Bering Sea and northeast Pacific Ocean (British Columbia and Puget Sound, Washington). In shelf and slope depths. (Hobson, 1976)

Brada verrucosa Chamberlin, 1919

1 locality off Acapulco, in deep slope depths (493 fm) (Fauchald, 1972)

Brada villosa (Rathke, 1843)

=*Siphonostoma villosum* Rathke, 1943; *Brada parthenopea* LoBianco, 1893; *B. pilosa* Moore, 1906; *B. pilosa* Treadwell, 1914 (homonym)

Alaska south to southern California, in slope to basin depths, in mud and mixed sediments; northwestern Europe (Hartman, 1969)

Diplocirrus Haase, 1915

=*Saphobranchia* Chamberlin, 1919

Diplocirrus micans Fauchald, 1972

Off Cedros Island, Baja and off Cabo Corrientes; 957-942 fm, 1355-1312 fm, 461-433 fms, ?2050-2027 fm, 1220 fm; green mud, mud and sand, ? red clay and rock. (Fauchald, 1972); Bathyal depths off western Mexico; Yaquina Bay, central Oregon, 1800 m (Fauchald and Hancock, 1981)

FAUVELIOPSIDAE Hartman, 1971

Fauveliopsis McIntosh, 1922

Fauveliopsis armata Fauchald and Hancock, 1981

Bathyal depths off Yaquina Bay, central Oregon, 2000 m, 1800 m, 2800 m, 2860 m (Fauchald and Hancock, 1981)

Fauveliopsis glabra (Hartman, 1960) Hartman, 1969

=*Brada glabra* Hartman, 1960

Southern California, in canyons and basins, in 113-976 m, mud and clay (Hartman, 1969); southern California in canyon and basin depths. Vicinity Cedros Island, Baja and off Punta San Telmo on mainland slope of central American Trench. (2402-2036 fm, red and green clay with rock and pebbles; 957-942 fm, green mud, 1355-1312 fm, green mud; 295-255 fm, rocky bottom; 2050-2027 fms, red clay and rock; 1255 fm) (Fauchald, 1972); Southern California in deep shelf and bathyal depths. Yaquina Bay, central Oregon, 1400 m, ? 2798 m (Fauchald and Hancock, 1981)

Fauveliopsis magna Fauchald and Hancock, 1981

Yaquina Bay, central Oregon, 2800 m (Fauchald and Hancock, 1981)

Fauveliopsis rugosus Fauchald, 1972

Off Cedros Island and Cabo Falso, Baja and off Tres Marias Islands. (957-942 fm, green mud; 461-433 fm, mud and sand; 709-683 fm, green mud; 840 fms; 1450 fms) (Fauchald, 1972)

Flabelliderma Hartman, 1969

Flabelliderma essenbergae (Hartman, 1961)
=*Stylarioides papillosa* of Essenberg, 1922
Flabelligera essenbergae Hartman, 1961

Southern California, (San Diego), at low tide, in root masses of eel grass (Hartman, 1969); Monterey Bay, 20 m, south to Guadalupe Island, Baja, intertidal. (Light, 1978); Point Conception, 28 ft (L. Harris)

Flabelligera Sars, 1829
=*Chloraema* Dujardin, 1839; *Siphonostoma* Rathke, 1843;
Siphostoma Otto, 1821; *Tecturella* Stimpson, 1854

Flabelligera affinis Sars, 1829
=*F. infundibularis* Johnson of Berkeley and Berkeley, 1952, Pettibone, 1954 (Hobson and Banse, 1981)
=*Chloraema Dujardini* Quatrefages, 1849. *C. edwardsii* Dujardini, 1839; *C. pellucidum* Sars, 1869; *C. sordidum* Quatrefages, 1849; *Flabelligera claparedii* Saint-Joseph, 1898; *F. induta* Ehlers, 1897; *Siphostoma affine* Leidy, 1855; *S. buskii* McIntosh, 1869; *S. gelatinosa* Dalyell, 1853; ?*S. papillosum* Grube, 1840; *S. vaginiferum* Rathke, 1843; *Siphostoma uncinata* Cuvier, 1830; *Tecturella flaccida* Stimpson, 1854

British Columbia and Washington (Hobson and Banse, 1981: specific locality not cited)

Flabelligera commensalis Moore, 1909

=*Flabelligera haerens* Chamberlin, 1919
=*Flabelliderma commensalis* (Moore, 1909) Hartman, 1969

Central and southern California, on purple urchins; Palos Verdes slope, in 30-50 ft, on rocky and mixed bottoms, free-living. Monterey Bay, intertidal, on sea urchin (type locality) (Hartman, 1969); Commonly found on *Strongylocentrotus franciscanus*, Palos Verdes (Dave Montagne, personal communication); Central and southern California, intertidal to shelf depths, free living in kelp holdfasts or commensal with urchins (*Strongylocentrotus* spp. and *Centrostephanus coronatus*) or polychaetes (Light, 1978)

Flabelligera infundibularis Johnson, 1901
Alaska to California; in 6-10 (sic) fms, in muddy bottoms. (Hartman, 1969 - map square 31 has canyon circled); Dume Canyon, 80-100 m (Hartman, 1963); Orange County deep, St. C-16, 257 m (L. Harris)

Ilyphagus Chamberlin, 1919

Ilyphagus bythincola Chamberlin, 1919

One locality off southwest Mexico in abyssal depths
(1879 fm, brown mud) (Fauchald, 1972)

Ilyphagus ilyvestis Hartman, 1960

Long Basin, in 1821 m, in clay (Hartman, 1969)

Pherusa Oken, 1807

=*Stylarioides delle Chiaje*, 1841; *Flemingia* Johnston, 1846;
Lophocephalus A. Costa, 1841; *Trophonia* Audouin and Milne
Edwards, 1830

Pherusa capulata (Moore, 1909)

=*Trophonia capulata* Moore, 1909
=*Stylarioides eruca* of Berkeley and Berkeley, 1941

Southern California, in intertidal, shelf and canyon
depths; in coarse sediments or mixed gravelly or sandy
mud with detritus (Hartman, 1969); Bahia de San Quintin
(Reish, 1963)

Pherusa abyssalis Fauchald, 1972

One locality, southern part Gulf of California and off
Acapulco in central American Trench (595 fm; 650 fm, mud;
1850 fm) (Fauchald, 1972)

Pherusa inflata (Treadwell, 1914)

=*Trophonia inflata* Treadwell, 1914
=*Trophonia minuta* Treadwell, 1914
=*Stylarioides dimissus* Hartman, 1936

Rocky intertidal areas from Oregon to western Mexico.
Deep water in scattered areas off western Mexico ("The
present specimens are slightly mutilated and the identi-
fication is considered dubious"; 2402-2036 fm, red and
green mud with rock and pebbles; 1850 fms; 1400 fms)
(Fauchald, 1972); British Columbia and Washington (Hobson
and Banse, 1981: marked with asterisk - not recorded from
area, but considered likely to occur)

Pherusa negligens (Berkeley and Berkeley, 1950)

=*Stylarioides negligens* Berkeley and Berkeley, 1950

Strait of Georgia, 183 m, British Columbia and Strait
of Juan de Fuca, Washington, 140 m (Hobson, 1974); British
Columbia and Washington (Hobson and Banse, 1981)

Pherusa neopapillata Hartman, 1961

Southern California, in shelf and canyon depths, in fine green sand, silt or mixed debris. (Hartman, 1969); Port of Long Beach, intertidal riprap; down to canyon depths (L. Harris)

Pherusa papillata (Johnson, 1901)

=*Trophonia papillata* Johnson, 1901

=*Stylarioides plumosa* of Berkeley and Berkeley, 1941

Alaska south to southern California, in littoral, shelf and canyon depths, in rocky sediments (Hartman, 1969)

Pherusa plumosa (Müller, 1776)

=*Pherusa obscura* Quatrefages, 1849

=*Amphitrite plumosa* Müller, 1776

=*Stylarioides Sarsi* McIntosh, 1908

=*Trophonia borealis* Hansen, 1882

=*Trophonia goodsirii* Johnston, 1840

=*Stylarioides papillata* of Berkeley and Berkeley, 1952, *fide* Pettibone, 1956

=*Stylarioides plumosa* of Berkeley and Berkeley, 1952, *fide* Pettibone, 1956

=*Pherusa neopapillata* of Banse et al., 1968

=*Flemingia muricata* Johnston, 1846

=*Pherusa Mülleri* Oken, 1807, in Støp-Bowitz, 1948

=*Pherusa mülleri* Quatrefages, 1849

British Columbia and Washington (Hobson and Banse, 1981: specific locality not cited)

Piromis Kinberg, 1867

=*Semiodera* Chamberlin, 1919

=*Pycnoderma* Grube, 1877

=*Balanochaeta* Chamberlin, 1919

Piromis americana (Monro, 1928)

=*Stylarioides capensis americana* Monro, 1928, 1933

=*Pherusa arenosa americana* (Monro, 1928)

Central California at Half Moon Bay, in 18 fms. rocky bottom; Pacific Panama, intertidal, under stone (Hartman, 1969)

Piromis gracilis Hartman, 1961

Western Mexico and Guatemala (Hartman, 1961)

Piromis eruca (Claparède, 1870)

=*Stylarioides arenosa* of Berkeley and Berkeley, 1952, *fide* Day, 1973

=*Balanochaeta eruca* (Claparède, 1870) Chamberlin, 1919

=*Pherusa incrustata* Quatrefages, 1865

=*Trophonia eruca* Claparède, 1870

=*Pherusa eruca* (Claparède, 1870)

British Columbia (Hobson and Banse, 1981, specific locality not cited)

Piromis hospitis Fauchald, 1972

One locality in upper slope depths (115-95 fm, sand mud pebbles) in the middle portion of Gulf of California (Fauchald, 1972)

Therochaeta Chamberlin, 1919

Therochaeta pacifica Fauchald, 1972

Canyon and upper slope depths from southern California to the vicinity of Cedros Island, Baja. Type comes from La Jolla Canyon, southern California, in 793 m depth (green sand, mud); also from off Santa Cruz Island, 365 fm, green mud, off San Clemente Island, 320 fm, green, sandy mud; off Natividad Island, 461-433 fm, mud and sand) (Fauchald, 1972)

UNCISPIONIDAE Green, 1982

Uncispio Green, 1982

Uncispio hartmanae Green, 1982

Offshore Santa Cruz Island, 222 m, hard clay with pebbles (Green, 1982)

Uncopherusa Fauchald and Hancock, 1981

Uncopherusa bifida Fauchald and Hancock, 1981

Yaquina Bay, central Oregon, 2860 m (Fauchald and Hancock, 1981)

SCALIBREGMATIDAE Malmgren, 1867

Asclerocheilus Ashworth, 1901

Asclerocheilus acirratus (Hartman, 1966) Blake, 1981

=*Sclerocheilus acirratus* Hartman, 1966

White Cove, Santa Catalina Island, in holdfasts of *Eisenia* Kelp) (Hartman, 1969); southern California, 1-200 m (Kudenov and Blake, 1978)

Asclerocheilus beringianus Ushakov, 1955

British Columbia, Washington; Bering Sea, and northwest Atlantic Ocean; in 84-5018 m (Hobson, 1974); 986 m, Bering Sea; New England, 1000-1500 m; northwest Atlantic, 4833-5018 m (Kudenov and Blake, 1978)

"Asclerocheilus" californicus Hartman, 1963

Blake (1981) puts this into an as yet unnamed new genus, differing from *Asclerocheilus* by the absence (in *Asclerocheilus*) or presence (in the new genus) of prolonged postsetal lamellae. Southern California, 201-200 m (Kudenov and Blake, 1978); Santa Monica Canyon, 695 m, mud, San Pedro Channel, in slope and canyon depths, in mud (Hartman, 1969)

Hyboscolex Schamarda, 1861, emended

=*Oncoscolex* Schmarda, 1861

not *Eusclerocheilus* Hartman, 1967, as stated in Kudenov and Blake, 1978 [see Blake, 1981]

Hyboscolex pacificus (Moore, 1909) Kudenov and Blake, 1978

=*Oncoscolex pacificus* (Moore, 1909)

=*Sclerocheilus pacificus* Moore, 1909

Western Canada south to western Mexico; southern California in slope and canyon depths, in rocky bottoms; Monterey Bay, intertidal. (Hartman, 1969)

Mucibregma Fauchald and Hancock, 1981

M. spinosa Fauchald and Hancock, 1981

Yaquina Bay, central Oregon, 2000 m (Fauchald and Hancock, 1981)

Scalibregma Rathke, 1843

Scalibregma inflatum Rathke, 1843

=*S. inflata* Hartman and Fauchald, 1971

Western Canada south to southern California, in shelf, slope, canyon and basin depths; in coarse sand and shelly sediments (Hartman, 1969); Australia; New Zealand; Antarctic Seas; South America; North America; Europe; South Africa. Intertidal to continental shelf depths; abyssal depths (Blake, 1981); 4436 m, northwest Atlantic (Hartman and Fauchald, 1971); World-wide areas. Present records from *Sal si Puedes* Basin and three localities along mainland slope of Central American Trench. (595 fm; 770 fm; 1250 fm; 1240 fm; 810 fm) (Fauchald, 1972)

ACROCIRRIDAE Banse, 1969; emended Orensanz, 1974

Acrocirrus Grube, 1872

Acrocirrus columbianus Banse, 1979

British Columbia, 4.5-7.5 m on breakwater (Banse, 1979)

Acrocirrus crassifilis Moore, 1923

Off Santa Cruz Island and Redondo Canyon, southern California, in 400-600 m, sandy mud (Hartman, 1969)

Acrocirrus heterochaetus Annenkova, 1934

Mainland sea of Japan and to 1500 m depth; Sea of Okhotsk; southwestern Bering Sea; Pacific coast of Alaskan Peninsula; southern California (off Palos Verdes Estate, from surface of Kelp) (Banse, 1969)

Acrocirrus incisa Kudenov, 1975

Puerto Penasco, Gulf of California, intertidal (Kudenov, 1975)

Acrocirrus occipitalis Banse, 1969

British Columbia, less than 29 m, rock reef (Banse, 1969)

Flabelligella Hartman, 1965; emended Orensanz, 1974

Flabelligella macrochaeta (Fauchald, 1972)

=*Flabelliderma macrochaeta* Fauchald, 1972

Two localities off Tres Marias Islands, in approximately 1500 m (Fauchald, 1972)

Flabelligella mexicana Fauchald, 1972

One locality off Cedros Island, Baja in abyssal depths (957-942 fms, green mud) (Fauchald, 1972)

Macrochaeta Grube, 1851

=*Ledon* Webster and Benedict, 1887

Macrochaeta pege Banse, 1969

=*Macrochaeta clavicornis?* Banse et al., 1968

Puget Sound (60-100 m, sand, broken shells) and adjoining waters (Banse, 1969).

Macrochaeta sp.

Redondo Canyon, 20 m, sand and silt (L. Harris)

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Publications with original descriptions are followed by the names of species described; all synonyms listed previously are included.

Annenkova, N. 1922. Aperçu de la famille des Chloraemidae (Annelida Polychaeta) de la collection du Musée zoologique de l'Académie des Sciences de Russie. Acad. Scie. U.S.S.R. Leningrad, C.R., :38-40. *Brada saschalina* (p. 39)

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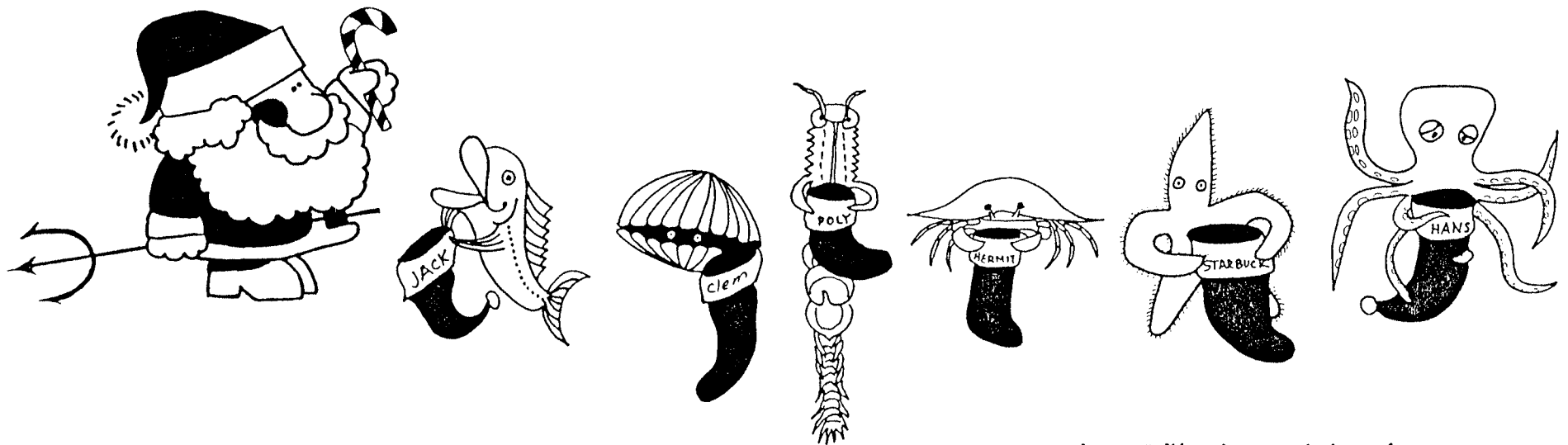
Down by the ocean where the seaweed grows,
There lives an old man whose age nobody knows.

They claim he's King Neptune, I say he's Saint Nick,
Cause around this season, he's never sick.

He gives to the humans, he gives to the fishes,
He gives to the inverts, and everything that wishes.

He can swim through the water, he can fly through the air,
To pass out his good tidings for all living things to share.

So the next time you go to the coast by the sea,
To go hunting or fishing, leave the inverts be,
For they look forward to Christmas just like you and me.



Southern California Association of
Marine Invertebrate Taxonomists