



**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
San Pedro, California 90731

September, 1994

Vol. 13, No.5

**NEXT MEETING:** SCBPP Trawl Caught Invertebrates (Final)  
**GUEST SPEAKER:** None  
**DATE:** October 17, 1994 (third Monday of the month)  
**TIME:** 9:30am - 3:30pm  
**LOCATION:** SCCWRP  
7171 Fenwick Lane  
Westminster



(from Word et al. 1977)

**OCTOBER 17 MEETING**

This will be the final meeting on SCBPP trawl caught invertebrates. Please bring any FID, voucher, or problem specimens from SCBPP trawl surveys for help with identification or just general discussion. Problems with trawl identifications need resolution so loading and analysis of trawl data can begin. Trawl voucher data will be examined to look for differences in usage between participating agencies. Bring along problem SCBPP infaunal organisms for discussion if time allows.

### POLYDORID MEETING

The second half of the *Polydora-Boccardia* complex meeting has been postponed until November. This meeting will cover only species of the genus *Polydora*, and will be given by Larry Lovell at his home. Due to the holiday this will be on the 3rd Monday of the month.

### A NOMENCLATURAL CHANGE

Kornicker (1994) transfers the local *Bathyleberis californica* to a new genus as *Xenoleberis californica*.

Kornicker does not mention either *B. garthi* or *B. hancocki*, restricting the composition of *Xenoleberis* to *X. californica*, *X. yamadai*, and *X. bex* (type). Neither *B. garthi* nor *B. hancocki* would fit in *Xenoleberis*, as both have a large exopodite on the mandible. These two species stay in *Bathyleberis* based on structure, and were implicitly excluded from *Xenoleberis* by Kornicker's composition statement.

### TAXONOMIC LIST UPDATE

Although the following changes will not appear in the SCAMIT Taxonomic Listing of Benthic Invertebrates until its annual update, we will be needing to use them in our SCBPP data. In consequence please note: *Rhamphidonta* sp A of Cadien is *Rhamphidonta santarosae* (Dall 1916); *Pseudostylochus burchami* is *Koinostylochus burchami*; Cephalaspidea sp A of Cadien is *Parvaplustrum* sp A; *Aglaja* sp A of Cadien is a synonym of *Melanochlamys diomedea*.

### RARE XANTHID CRAB

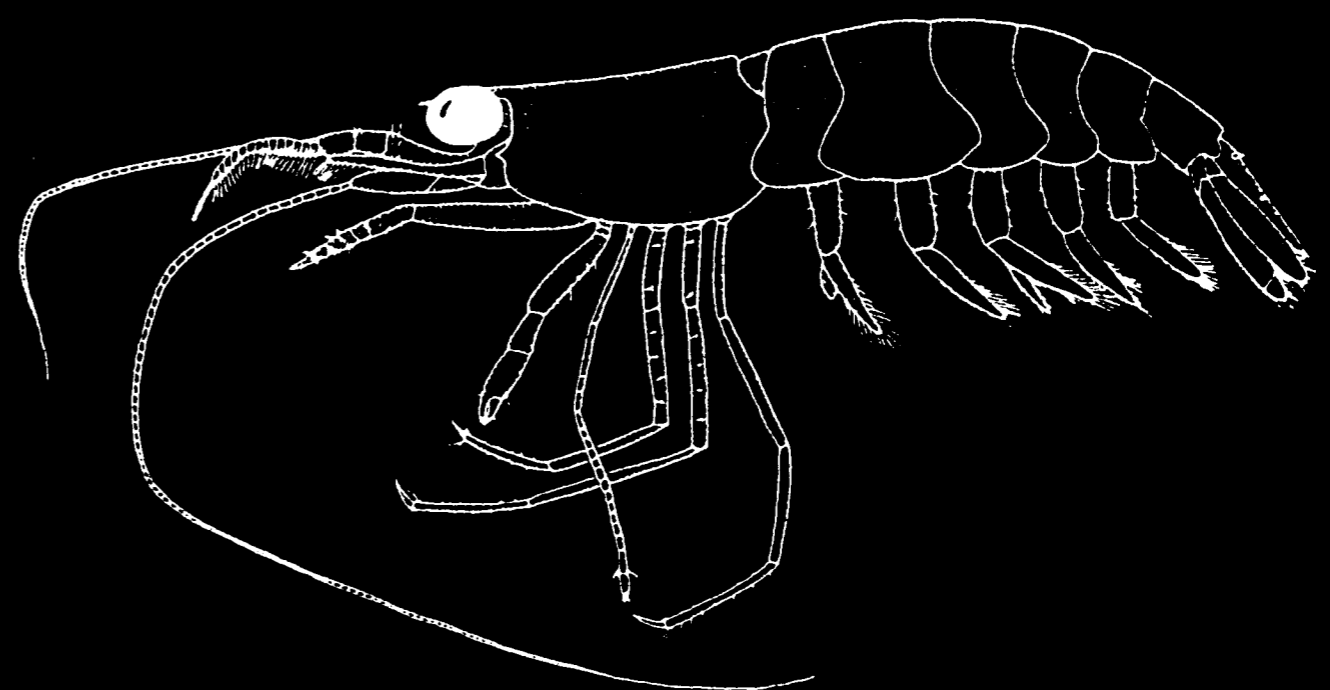
The report of a collection of a small xanthid

crab in San Diego, believed to be a second specimen of the rare *Micropanope latimanus*, prompted a letter from member Mary Wicksten. She sent along a copy of Rathbun's (1930) description of the taxon and commented "As far as a description goes, 'What you see is what you get'. There never has been an illustration of '*M. latimanus*'. Any type material of Stimpson or Lockington almost surely was destroyed by fire... Stimpson's collections burned up in Chicago, Lockington's in San Francisco. It is entirely possible that the species has been redescribed under another name. To make matters worse, rumor has it that the entire genus *Micropanope* is an artificial mess badly in need of revision. Are there any graduate students out there looking for a project?"

Since our last report the specimen has been examined by Jody Martin, Crustacean Curator at The Los Angeles County Museum of Natural History. He concluded that the specimen was not referable to either *Micropanope latimanus* of Lockington (1877) or of Stimpson (1871), but was probably yet another undescribed xanthid.

### SOUTHERN SHRIMP IN SAN DIEGO

In the same letter Mary Wicksten reports that the processid shrimp *Ambidexter panamensis* Abele 1972 has been taken in San Diego Bay.



*Ambidexter* (from Abele 1972)

She indicates that the species will key to *Processa canaliculata* in Schmitt's 1921 key. The genera *Ambidexter* and *Processa* can be separated by the condition of the first pereopods; both chelate in *Ambidexter* [thus the name], only one in *Processa*. Specimens of *Ambidexter* would key to Hippolytidae in Word and Charwat's 1976 key, and would not key in Butler 1980. Neither key includes the family Processidae.

This is not a new record. Two specimens of this species were taken in San Diego Bay in the 1880's by David Starr Jordan. These were mentioned in Abele's 1972 description. Since none of the available shrimp keys will reliably place this animal, Mary's reminder serves to keep us aware of the presence of this rare shrimp in our sampling area.

#### [...PS EDITOR'S NOTE]

I thank Mary Wicksten for her letter, and encourage others to follow in her footsteps. The SCAMIT Newsletter can serve as a rapid distribution network for such notes, aiding both the contributor and the reader. I urge you to send in any such short distributional, taxonomic, or ecological notes for inclusion in the Newsletter. Other postings or notices are also welcome, for example - specimens wanted, help needed, positions open, etc. The more the membership participates, the more it benefits. We are especially happy to hear from members unable to attend meetings.

#### MINUTES FROM MEETING ON SEPTEMBER 19

The first half of the meeting was spent discussing a few problem annelid groups and sharing some odd polychaetes. It was decided to leave the discussion of *Polydora* species until another meeting, as we would not have time to cover both *Polydora* species and

*Boccardia*, *Boccardiella*, *Pseudopolydora*, and *Carazziella* species. The afternoon was spent discussing these other groups. The meeting was led by SCAMIT member and private consultant, Larry Lovell.

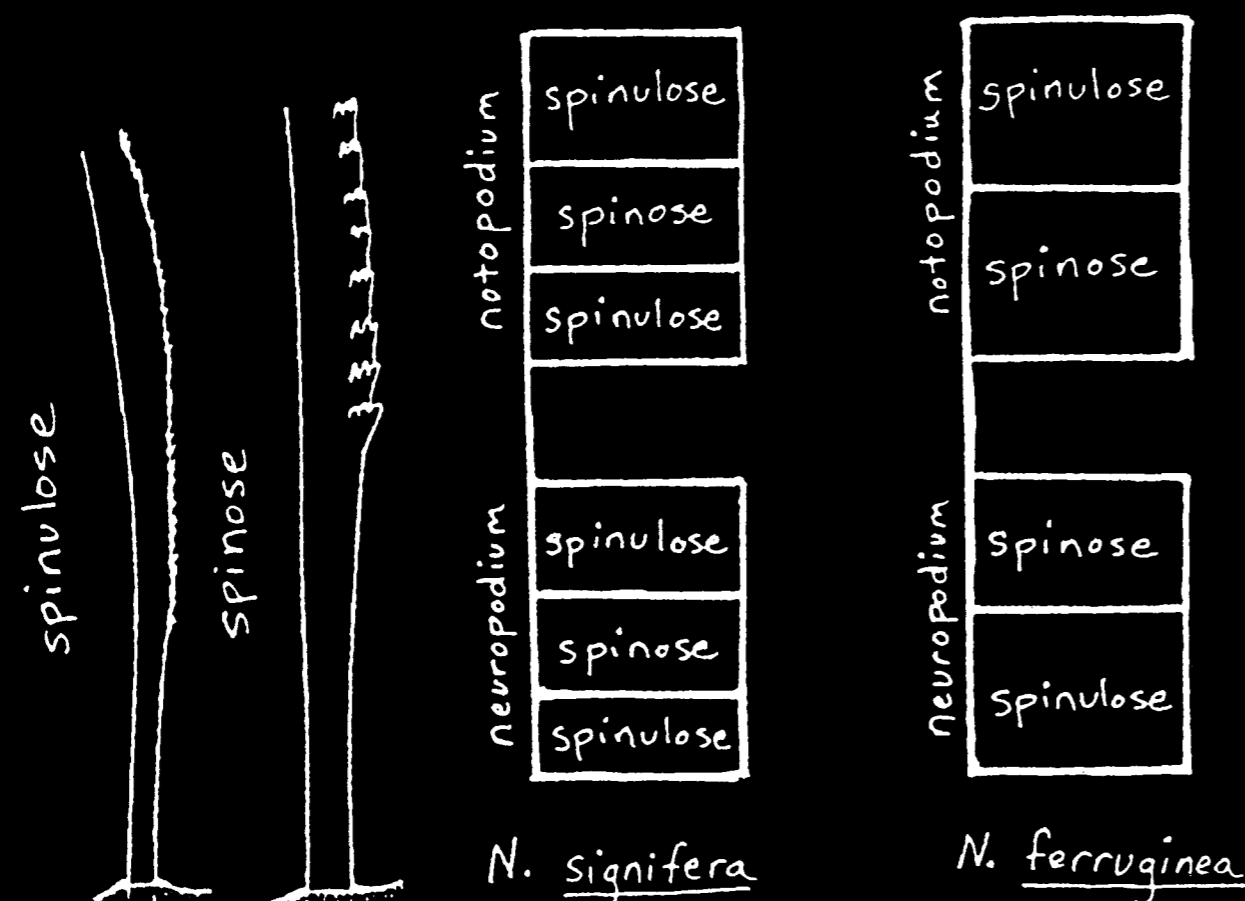
#### Problems with *Nephtys*

In the July newsletter (Vol.13 No.3) a cautionary note was addressed to members working with the polychaete family *Nephtyidae*. Several SCAMIT members had noticed upon re-examination of material originally identified as *Nephtys ferruginea* that 20 bifid distal papillae surrounded the proboscis rather than 22 as in Hartman's 1940 original description. It was thought that perhaps the southern California species *Nephtys ferruginea* was actually *Nephtys signifera* Hilbig 1992. However, this problem has been further investigated by Larry Lovell, who now believes that *Nephtys signifera* should be a junior synonym of *Nephtys ferruginea*. He is currently at work on a paper for publication detailing this. At the meeting Larry presented us with some of the evidence supporting this synonymy.

In Hilbig's original description of *Nephtys signifera* she describes a glandular area along the dorsolateral edges of the prostomium that stains with methyl green. Presence of this glandular area was viewed as a major differential character separating *N. signifera* from other related species. This glandular area has also been found in *Nephtys ferruginea*, but it is farther below the surface and not readily seen. The prostomium needs to be dissected to locate it. The distribution of spinose, spinulose, and smooth setae in the postacicular fascicles of the neuro- and notopodia also differed between *N. signifera* and *N. ferruginea*, according to Hilbig. Whereas, *N. signifera* is described as having smooth to spinulose setae in the upper and lower fascicles and spinose setae in the middle

fascicles of each ramus *N. ferruginea* has the same distributional pattern, only between the two rami.

Diagram of Parapodia Showing Distribution of Postacicular Setal Types



(illust. of setae from Hilbig, 1992)

Although, *N. ferruginea* is not described as having any smooth postacicular setae Larry believes this could be due to wear and tear on the setae making them look smooth, or perhaps the setae are not developed enough to have the fine spinules yet. It was also recently remarked by Hilbig (1994) that juvenile *N. ferruginea* have been mistaken for *N. signifera* because of their lack of *N. ferruginea*'s characteristic pigmentation. As mentioned previously *N. ferruginea* have 20 bifid distal papillae on the proboscis just as described for *N. signifera*. It is because of all this that Larry believes that *Nephtys signifera* are just underdeveloped or juvenile *Nephtys ferruginea*.

Larry gave some advice for examining nephtyids. When examining the parapodia one needs to make sure they are correctly mounted to show the postacicular setae rather than the preacicular setae, which are very different and have a cross-barred pattern to them. If not everted during preservation, the proboscis

needs to be extended to count the distal papillae at its end. Making a ventral slit from the prostomium down to about the 9th or 10th setiger and pulling out the proboscis provides easy access to the distal papillae.

Larry also brought up a problem with the closely related *Nephtys caecoides* and *Nephtys parva*. In the past it has been assumed that *N. parva* was a synonym of *N. caecoides*. If an animal fit the description of *N. caecoides*, but was small and lacked a pigment pattern, it was just considered a juvenile *N. caecoides*. This synonymy may not be valid. The parapodial lobe shape needs to be carefully examined along with the interramal cirri. Larry suggested that some additions be made to the *Nephtys* key on page 571 in the errantiate volume of Hartman's *Atlas of Polychaetes*.

For couplet 10a - *Nephtys caecoides*  
add the words "median parapodial lobes incised and well-developed; 22 bifid distal papillae and a single, median, unpaired, subdistal papilla on proboscis"

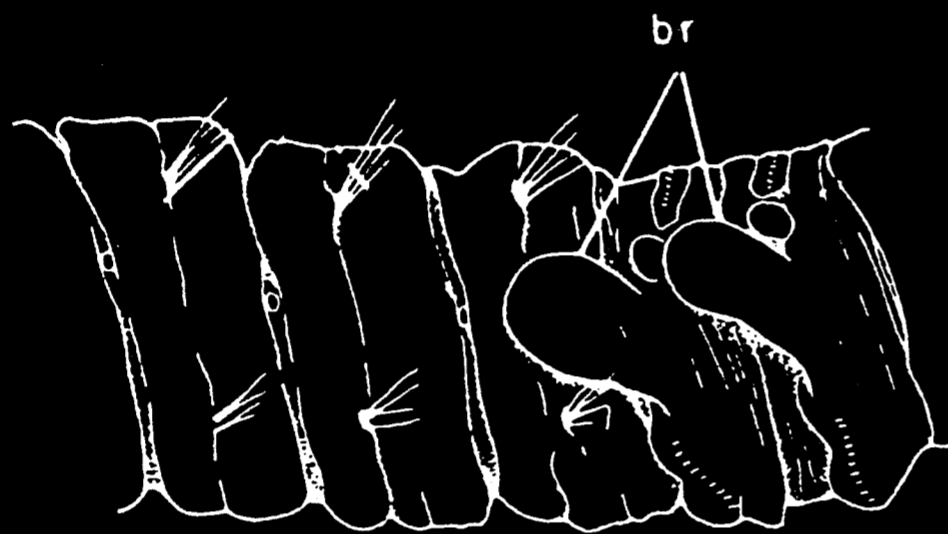
For couplet 10b - *Nephtys parva*  
add the words "median parapodial lobes not incised and short; 20 bifid distal papillae and no single, median, unpaired, subdistal papilla on proboscis"

The type material of *N. parva* still needs to be examined and compared to small (10-13 mm) *N. caecoides* to be sure that these differences are not the result of ontogenetic changes. Larry requests anyone with small *Nephtys caecoides* to forward them to him for examination.

#### Problems with *Notomastus*

The capitellid species *Notomastus lineatus*, has recently been found by SCAMIT members in the southern California area. It has been reported off Orange County at 60m and also

off Point Loma and in Santa Monica Bay. A good illustration of *N. lineatus* is in Uebelacker (1984). This species has been confused with *Notomastus latericeus* in the past. However, they have distinct differences in the shape of the branchiae or branchial lamellae on the abdominal neuropodia. In *Notomastus lineatus* the branchiae are large, superiorly inflated and rounded, while the branchiae of *Notomastus latericeus* are triangular extensions of the neuropodia.



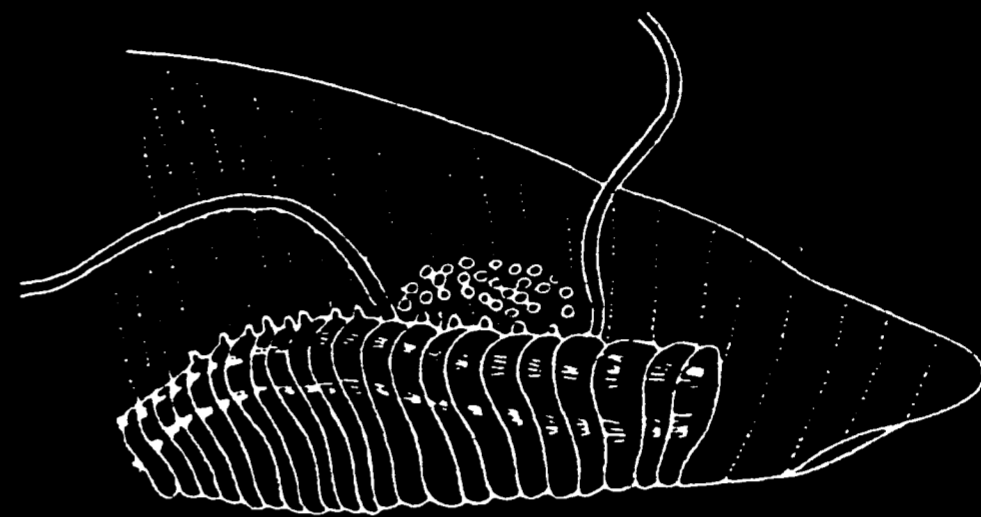
branchiae of *Notomastus lineatus*  
(from Ewing in Uebelacker, 1984)

*Notomastus lineatus* also has a distinctive methyl green staining pattern. Anterior thoracic segments stain solid or slightly mottled blue-green, while the abdominal setigers exhibit dorsal banding. Vertical cross-barring sometimes appears along the sides of the worm, but is not consistently present.

#### A Possible *Timarete*

Point Loma has recently reported seeing an odd cirratulid with more than one anterior setiger with many branchiae. They have found 2 specimens both from about 320 ft. The branchiae are at the anterior end in 2 pocket-like areas, one on each side of the body. The branchial pockets sit in vertical grooves or excavated areas on each side of the animal dorsally. Ushakov (1955) has a description of *Timarete*, which this cirratulid keys out to. However, a timaretid is described as having

short acicular setae posteriorly, which have not, yet, been seen on this particular cirratulid. SCAMIT members should be on the lookout for this odd cirratulid and, hopefully, we will be able to confirm its identity in the future.



anterior end of a *Timarete*  
(from Ushakov, 1955)

#### Maldanid Alert!

Two small (12mm) unusual polychaetes were collected from station 1328 of the Southern California Bight Pilot Project in 31 meters. They had some of the gross morphologies of Maldanidae (e.g. *Praxillura*) and Bogueidae, but lacked the specific setae needed to fit the descriptions for either group. A brief diagnosis is:

Conditions that fit both Bogueidae and *Praxillura*.

- maldanid-like worm with arched head and gaping mouth
- at least 28 setigers

Conditions that fit only Bogueidae.

- acicular spines absent, capillaries include slightly bilimbate with frilled edges, and also thinner longer serrate capillaries
- rostrate uncini present from first segment (young or juvenile)





---- no asetigerous preanal segments

---- pygidium simple cone with terminal anus

Conditions that fit only *Praxillura*

---- some pigment spots present dorso-lateral on anterior end

The diagnostic dilemma in assigning these specimens to either Bogueidae or *Praxillura* is that their current setal condition must be ignored and replacement of these setae with different setae assumed. Wolf (1983) discussed larval uncini replacement in Bogueidae and other polychaetes. He stated that rostrate uncini begin in setiger 1 for bogueids and later are lost and subsequently begin on setiger 4-5. Though similar replacement of uncini with acicular spines is unreported in *Praxillura*, Pt. Loma lab has found *Praxillura* (34mm) with as few as 5 setigers with spines (instead of 7-9). If your collections may contain additional specimens similar to these, please contact the SCAMIT editor so additional observations can be completed.

### Spionids

The afternoon was spent examining spionids of the genera *Carazziella*, *Boccardia*, *Boccardiella*, and *Pseudopolydora*. First Larry handed out a copy of a very useful table from Blake and Kudenov (1978). This table clearly describes the distinguishing generic characters in the *Polydora*-complex. These genera are mainly discriminated by the presence or absence of branchiae before the modified 5th setiger and the types of major spines on that setiger. Since it is often difficult to examine the spines of the 5th setiger because of their placement in the body it is sometimes helpful to mount them on a slide with their ventral side up or view them ventrally under the dissecting scope.

The genus *Carazziella* is distinguished by having branchiae posterior to setiger 5 and 2 types of major spines, of which both types may bear bristles. Of the 11 species currently known, 9 of them have bristles of both types of spines. The characteristics that the taxonomist needs to look at when examining species of *Carazziella*, and all species of the *Polydora* complex, are:

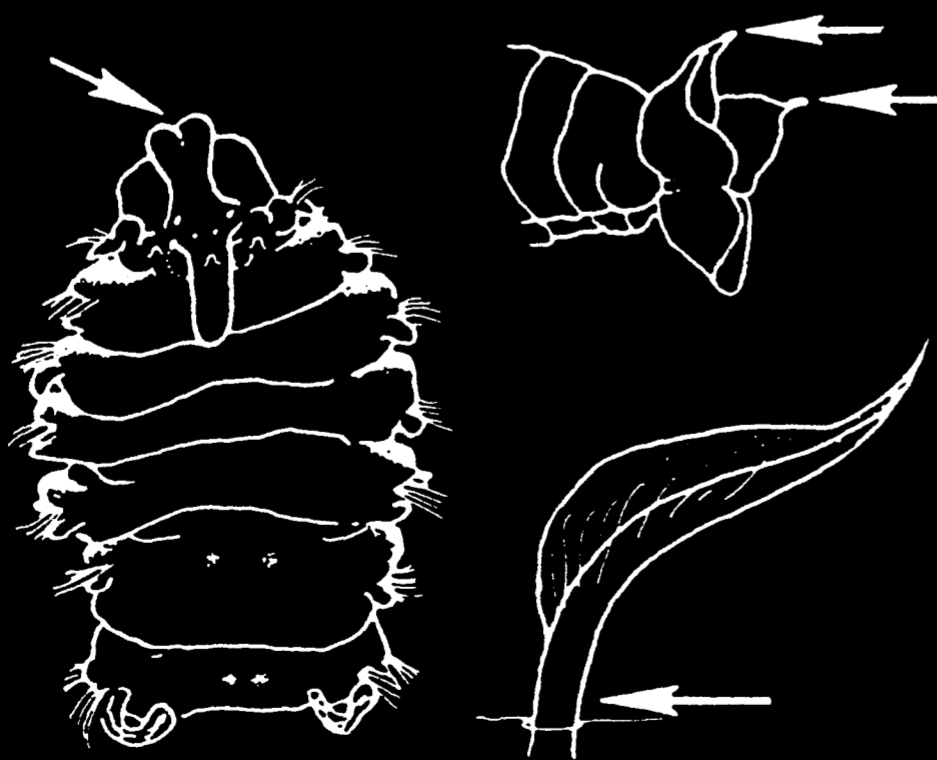
- 1) The presence/absence of notosetae and neurosetae on setiger 1
- 2) The shape of the prostomium. Is it incised or entire?
- 3) The presence of eyes and their arrangement on the prostomium.
- 4) The setigers at which branchiae appear.
- 5) The setiger at which hooded hooks begin, whether they are bidentate or unidentate, and if the dentition changes along the length of the worm.
- 6) The shape of the spines of the modified 5th setiger.
- 7) How far the caruncle extends and if it is whole or divided.
- 8) The presence of a "gizzard" in the digestive tract.

The common *Carazziella* reported in southern California does not fit the description of *Carazziella citrona*, whose type was described from Mission Bay. The main differences between the two are the setiger at which the hooded hooks start and the shape of the caruncle. The hooded hooks begin on setiger 10 for *C. citrona* and setiger 8 for the other. The caruncle is described as whole and entire for *C. citrona* and is split or divided for our common *Carazziella*.

Ron Velarde has looked at several specimens of our common *Carazziella* and finds that it most closely fits the description of the Australian species, *Carazziella phillipensis* Blake and Kudenov 1978. It was proposed at the meeting that our common *Carazziella* be called *Carazziella sp. A* of SCAMIT and Ron Velarde is currently working on a voucher sheet.

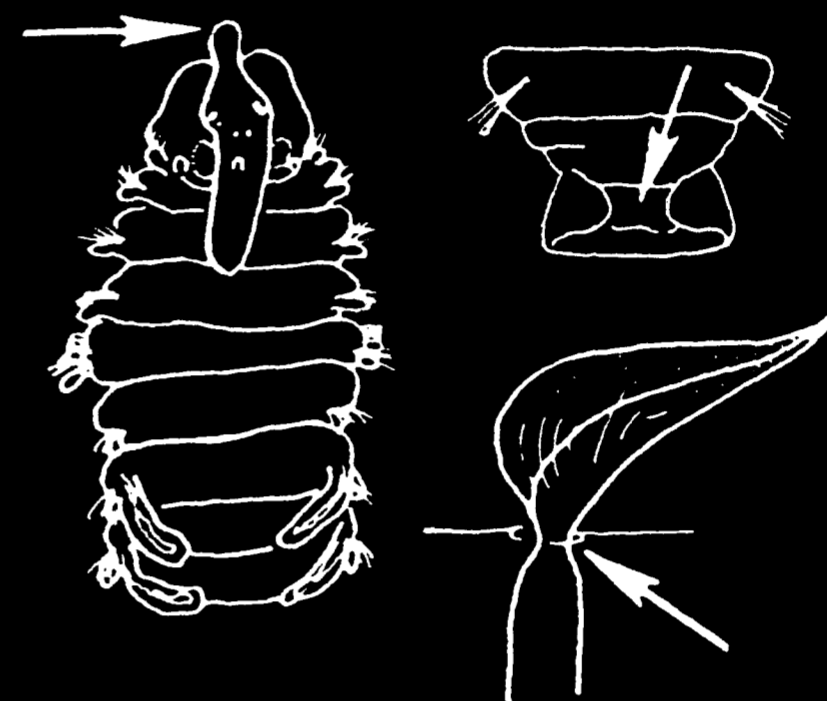
The genus *Pseudopolydora* has only a slightly modified setiger 5 and the branchiae begin posterior to it. The 2 types of major spines are arranged in double J- or U- shaped rows. The best literature sources for this genus are Light, 1978 and Blake and Kudenov, 1978. The two species of *Pseudopolydora* that we encounter in southern California are *P. kemp*i and *P. paucibranchiata*. They are distinguished by the shape of their prostomia, the presence or absence of a distinct constriction on the shaft of the limbate setae of the modified 5th setiger, and the shape of their pygidia.

*Pseudopolydora kemp*i has an incised prostomium, no constriction on the shaft of the limbate setae, and a pygidium with 2 well developed dorsal digitiform lappets. It also has major spines of the 5th setiger arranged in a double J-shaped row. Compared to *P. paucibranchiata*, *P. kemp*i is a smaller and thinner animal.



*Pseudopolydora kemp*i  
(from Light, 1978)

*Pseudopolydora paucibranchiata* has an entire prostomium that is bluntly rounded, a distinct constriction on the shaft of the limbate setae, and a reduced pygidium shaped into a ring-like disk with a wide median dorsal gap. It also has modified spines that are arranged in a double U-shaped row. It is also found in shallower habitats, like Anaheim Bay.



*Pseudopolydora paucibranchiata*  
(from Light, 1978)

The two genera, *Boccardia* and *Boccardiella* are distinguished from the other groups of the *Polydora*-complex by having branchiae present on setigers anterior to the modified 5th. *Boccardiella* has 1 type of major spine on the 5th setiger and *Boccardia* has 2 types.

Larry has modified the key from Hartman's Atlas to update it and include species of *Boccardiella*. This modified version has been included as one of the handouts with this newsletter. Larry showed us specimens of most of the species covered in the key from the Atlas and went over their distinguishing characteristics.

*Boccardia columbiana* (Berkeley, 1927)

- ◆ prostomium rounded
- ◆ two kinds of spines on the modified 5th setiger, falcate and brush-topped



- ◆ very prolonged, forward directed notosetae on the 1st setiger
- ◆ slight pigmentation on the lateral edges of the prostomium
- ◆ Habitat - rocky intertidal
- ◆ Literature references - Hartman, 1969 and Light, 1978

*Boccardia proboscidea* Hartman, 1940

- ◆ prostomium rounded
- ◆ 2 kinds of setae on the modified 5th setiger, falcate and brush-topped
- ◆ short notosetae on 1st setiger
- ◆ line of dusty pigment on each side of the prostomium
- ◆ Lit. ref. - Hartman, 1941; Light, 1978 and Woodwick, 1963

*Boccardia pugettensis* Blake, 1979

- ◆ prostomium incised and forming 2 distinct lobes
- ◆ notosetae present on setiger 1
- ◆ a reduced modified 5th setiger with falcate and brush-topped spines
- ◆ hooded hooks begin on setiger 7 and are bidentate but sometimes the apical tooth is lost or the hood is torn off
- ◆ Lit. ref. - Blake, 1979 original description and Hobson and Banse, 1981

*Boccardia basilaria* (Hartman, 1961)

- ◆ prostomium incised
- ◆ modified 5th setiger with 2 types of spines, falcate and brush-topped
- ◆ notosetae present on first setiger, but not prolonged
- ◆ hooded hooks are unidentate posteriorly, but may have a slight secondary tooth anteriorly
- ◆ Habitat - shallow; LA Harbor, Oxnard, Goleta at 60 ft.
- ◆ Lit. ref. - Hartman, 1961 and Light, 1978

*Boccardia tricuspa* (Hartman, 1939)

- ◆ prostomium entire
- ◆ modified 5th setiger with 2 types of spines, falcate and tricuspid



- ◆ no notosetae on setiger 1 only a small fascicle of neurosetae
- ◆ hooded hooks bidentate
- ◆ Lit. ref. - Woodwick, 1963; Hartman, 1969 and Light, 1978

*Boccardia berkeleyorum* Blake and Woodwick, 1971

- ◆ prostomium rounded
- ◆ 1st setiger lacks notosetae and a notopodial lobe only a small fascicle of neurosetae



- ◆ modified 5th setiger with 2 types of spines, falcate and brush-top
- ◆ bidentate hooded hooks
- ◆ posterior parapodia with simple acicular spines
- ◆ Lit. ref. - Blake and Woodwick, 1971 original description and Light, 1978

*Boccardiella hamata* (Webster, 1879)

- ◆ prostomium bifid
- ◆ only 1 type of major spine on modified 5th, falcate
- ◆ branchiae on setigers 2, 3, 6+, but missing from 4 and 5
- ◆ posterior notopodia with enlarged, recurved, falcate hooks
- ◆ Lit. ref. - Blake, 1966 and Blake and Kudenov, 1978

*Boccardiella truncata* (Hartman, 1936)

- ◆ bifid prostomium
- ◆ modified 5th setiger with only 1 type of spine, falcate
- ◆ branchiae absent on setigers 4 and 5
- ◆ posterior notopodia without enlarged, recurved, falcate hooks
- ◆ Lit. ref. - Hartman, 1969 as *Boccardia truncata*

Included in this newsletter is a copy of a table of *Boccardia* and *Boccardiella* species and their distinguishing characteristics. It was made by

SCAMIT member Leslie Harris several years ago, but it is still valid and very useful. It has been distributed before, but for those members not familiar with it, here it is again.

#### A NEW PROBLEM

Users of specialty papers for labels in wet specimen storage have now been impacted by the discharge requirements placed upon paper manufacturers. For many years, museums, surveys, and collectors have relied upon *Resistall Paper* from Byron Weston Paper Company for archival labels used in wet collections. Specially formulated, this paper was useful in both alcohol and formaldehyde storage. Another Byron Weston paper, *Linen Record*, has also been used and has consistently held up to wet storage conditions.

The Byron Weston Company has notified its customers that it will no longer manufacture *Resistall*. This is apparently the direct result of new and stringent discharge permits placed upon the manufacturer. *University Products* in Holyoke Massachusetts (order desk tel. 1 (800) 628-1912) currently has some supply of 28 pound *Resistall*. This represents the last available supply.

The L. A. County Sanitation Districts has successfully used *Linen Record* paper with watermarks through 1991 for wet storage labeling. Unfortunately, the 1993 version paper has apparently been greatly modified following these new discharge limitations.

The 1993 paper is unable to withstand even brief immersion in liquid (water, alcohol, etc) without sloughing and tearing. Small labels of less than 10 centimeters will tear under their own weight when handled.

There is currently no solution to this dilemma. A local supplier of Byron Weston papers has already contacted the Smithsonian for suggestions and is attempting to find



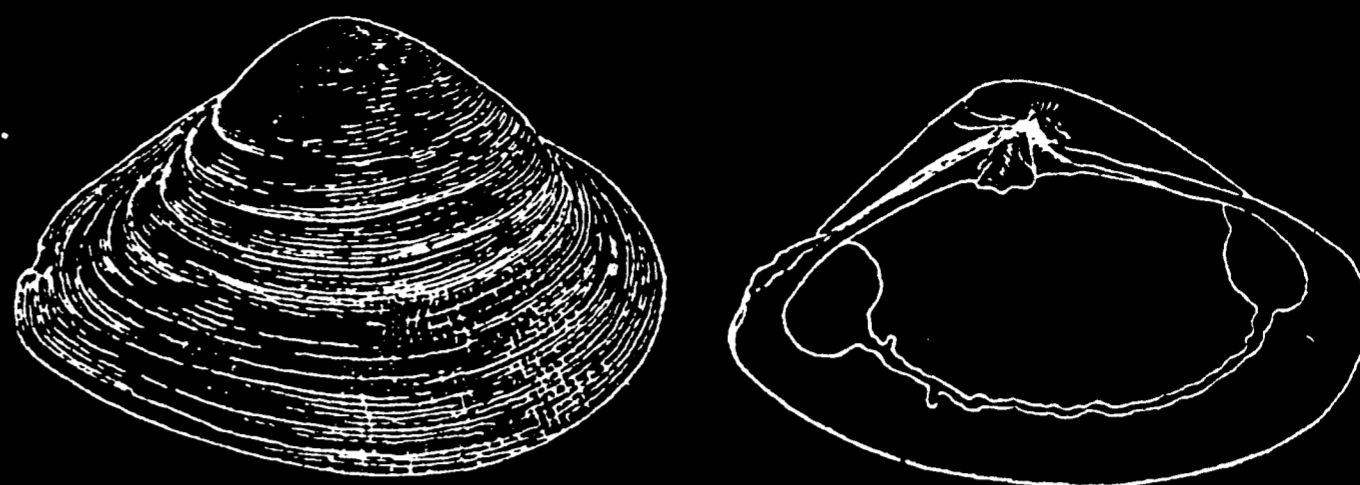
European or Japanese source of a suitable paper product. Others have placed notices on electronic bulletin boards seeking suggestions. If you have a suggestion or solution to this situation, please contact the SCAMIT Newsletter editor.

More  
Regulations,  
More Discharge Requirements,  
More Biological Surveys and Analysis,  
More Wet Storage of Specimens with Labels,  
More Regulations on Paper Manufacturers,  
No Paper for Wet Storage of Specimens,  
No Voucher Collections for Analysis,  
No Good Biological Surveys,  
Violations of Permits,  
More Regulations,  
More?

### WORKING VACATION

Being one of those biologists who enjoys what he does, your Editor (Don Cadien) took his son north along the coast into southern Oregon on vacation in late August. Numerous stops were made, among them - at Big Lagoon and Clam Beach above Eureka in Northern California, at Bodega Bay, and at the Cal. Academy of Sciences.

At Big Lagoon, while relaxing in the calm warm brackish water we examined the local biota. A bottom of mudstone and fine mud yielded *Corophium* sp., *Mytilus* sp., *Macoma balthica*, and a clam later identified by Terry Gosliner (Cal. Acad. Sci.) as *Potamocorbula amurensis*. This small clam, which has successfully invaded and now dominates much of the San Francisco Bay benthos, was not previously known from Big Lagoon, where it is now present in vast quantities. Terry sent off a sample to Jim Carlton, who tracks the distribution history of such introduced species.



*Potamocorbula amurensis* (from Habe 1949)

At Clam Beach, while frolicking in the surf, we saw small arthropods swash-riding on the waves sweeping over the beach. The way they burrowed into the sand made me believe they were phoxocephalid amphipods. They were easily caught with a cup and I collected some for later ID. They proved to be Barnard's *Dogielinotus loquax*, since transferred to *Probosciniotus* by Bousfield & Tzvetkova (1982). Happy to have finally found an animal I had long wanted to see, I became even happier when Clam Beach proved to be the type locality, making my specimens topotypes.

Later in the trip we camped for several days at Doran Beach on the spit that separates Bodega Bay from the open sea. Although tides were not good, we still had a considerable area of the south Bay exposed at low water. Molts of *Cancer magister*, *Cancer antennarius*, and *Cancer productus* were plentiful on the strand line, although the living animals stayed below the tide. Searching through the mixed green/brown algal mat which covered large areas of the south Bay yielded a surprising find: sand dollars living in algae! Subadult *Dendraster excentricus* were found both in the usual habitat (sand surface) and perched on thick mats of algae. These later animals seemed perfectly healthy and content, staying on the algal mat despite the nearby availability of sand. It is assumed they were carried onto the mat by the strong tidal flow near the baymouth. Why they stayed is a mystery,

although they may be waiting for the incoming tide to once again provide passive transport to open sand habitat.

One of the last stops on the trip was at the California Academy of Sciences for meetings with Gary Williams and Terry Gosliner. Numerous specimens of the gorgonian *Adelogorgia* were added to the Academy collection. These had been taken during the SCBPP trawling effort off San Diego in a net ripped by a reef. These specimens will help Gary pursue the question of whether there is more than one species of *Adelogorgia* on our coast. Material of several cephalaspid mollusks was left with Terry Gosliner for his examination. This material will assist in his reassessment of the California cephalaspids. Results of these investigations will be the basis of one or more SCAMIT meetings in 1995.

Our hosts gave us a tour of the Academy collections. Despite their size and coverage there are still gaps to be filled (they had no *Adelogorgia* prior to those we donated), and SCAMIT can have a role in connecting the Academy with specimens (particularly in trawls) taken during monitoring in southern California. I will be pursuing this with Gary, Terry, and collections manager Bob Van Syoc. A list of material needed will be prepared and distributed through the Newsletter.

#### PROPOSED WORKSHOP

The Department of Ecology for the State of Washington has a proposed workshop planned for early next year. The workshop will focus on taxonomic standardization of benthic invertebrate organisms from the Pacific Northwest region. Several of our SCAMIT members have been asked to lead the workshop. Enclosed in this newsletter is a questionnaire and a schedule of the suggested agenda.

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**SCAMIT OFFICERS:**

If you need any other information concerning SCAMIT please feel free to contact any of the officers.

President	Ron Velarde	(619)692-4903
Vice-President	Don Cadien	(310)830-2400 ext. 403
Secretary	Cheryl Brantley	(310)830-2400 ext. 403
Treasurer	Ann Dalkey	(310)648-5611

TABLE 3  
Some Taxonomic Characteristics of the Genera of the *Polydora*-complex

<i>Genus</i>	<i>Setiger 1</i>	<i>Setiger 5</i> <i>modification</i>	<i>Setiger 5</i> <i>major spines</i>	<i>Branchiae</i> <i>begin</i>	<i>Hooded</i> <i>hooks</i> <i>beginning;</i> <i>no. teeth</i>	<i>Hooded hooks</i> <i>Structure</i>
<i>Pseudopolydora</i>	Normal to achaetous	Slight to moderate	2 types, usually in J- or U-shaped double rows	Posterior to setiger 5	Setiger 8; bidentate	Secondary tooth closely applied main fang; with constriction on shaft
<i>Polydora</i>	With or without notosetae	Great	1 type, with or without companion setae	Posterior to setiger 5	Setigers 7-17; bidentate	With prominent angle between teeth; with or without constric- tion on shaft
<i>Carazziella</i>	With or without notosetae	Great	2 types in 2 rows, 1 or both may bear bristles	Posterior to setiger 5	Setigers 7-14; bidentate	With prominent angle between teeth; without constriction on shaft
<i>Tripolydora</i> *	Without notopodia and notosetae	Slight	1 type, with companion setae	Setiger 2, present on setiger 5	Setiger 9; tridentate	Secondary teeth closely applied to main fang; no constriction on shaft
<i>Boccardiella</i>	With or without notosetae	Great	1 type, with companion setae	Setiger 2, present or absent on setiger 5	Setiger 7; bidentate	With prominent angle between teeth; without constriction on shaft
<i>Boccardia</i>	With or without notopodia and notosetae	Great	2 types in 2 rows, 1 may be bristle- topped	Setiger 2, absent on setiger 5	Setigers 7-8; bidentate	With prominent angle between teeth; without constriction on shaft

\* Holotype of *Tripolydora spinosa* Woodwick, 1964 [Type-species] from Eniwetok was examined (USNM 254881).

(Table taken from Blake and Kudenov, 1978)



# Modified Key from Hartman's Atlas

## Boccardia Carazzi, 1895 and Boccardiella




### Key to Species

- . Fifth segment modified, with 2 kinds of setae . . . . . (Boccardia) . . . . . 4
- . Fifth segment not modified, with one kind of setae . . . . . (Boccardiella) . . . . . 2
- . Branchiae absent from setigers 4 to 6 . . . . . → Boccardiella ligerica
- . Branchiae absent from setigers 4 and 5 . . . . . also . . . . . 3
- . Posterior notopodia with enlarged falcigers . . . . . Boccardiella hamata
- . Posterior notopodia without falcigers . . . . . Boccardiella truncata
- . Segment 5 with tricuspid and falcate spines . . . . . B. tricuspis
- . Segment 5 with brush-topped and falcate spines . . . . . 5
- . First setiger with prolonged setae directed forward . . . . . B. columbiana
- . First setiger with small, inconspicuous setal fascicles . . . . . (or notosetae absent) . . . . . 6
- . Hooded hooks in posterior neuropodia are entirely falcigers . . . . . B. basilaria
- . Hooded hooks in posterior neuropodia are distally bifid . . . . . (or entire like B. pugettensis) . . . . . 7
- . Prostomium rounded at anterior margin . . . . . 8
- . Prostomium medially incised at anterior margin . . . . . 9
- 3. Posterior notopodia with acicular spines (spines twice as thick as capillary setae) . . . . . B. berkeleyorum
- 3. Posterior notopodia without acicular spines . . . . . B. proboscidea
- 1. Notosetae present on setiger 1 . . . . . B. pugettensis
- 1. Notosetae absent on setiger 1 . . . . . B. polybranchia

**BOCCARDIA**  
**Leslie Harris**  
**Los Angeles County Natural History Museum**

Species	Prostomium	Eyes	Median antennae	Notosetae setiger 1	Companion setae, set 5	Spiniger type setiger 5	Post notop spines	Pygidium shape	Hooded hook constriction	Caruncle, to setiger	Start of notopod hook	# Hooks per row	Branchiae, from - to	Pigmentation	Habitat
<i>Boccardia basilaria</i>	M	+	-	-	-	3-5 falcate; 6 bristle-top w/ constricted neck	acicular	semi-circular disc, 2 ventral lappets	-	end of 3	7		2,3,4...6 absent post	dusky in front along parapodia	silt & sand, subtidal
<i>berkeleyorum</i>	A	-	-	-	-	falcate; bristle-top w/ accessory tooth	acicular	4 small lobes	-	end of 4	7	ant 5-6, (up to 7) post 3-4	2,3,4...6 absent post ¼ body	none	in hermit crab shells, clams, Lithothamnoid
<i>chilensis</i>	M	-	+	+	-	falcate; distal concavity	none	simple collar, ventral incision	-	into 2			2,3,4...6 present	none	intertidal and subtidal
<i>columbiana</i>	U	+	-	+ long	-	2-5 falcate; 2-5 bristle-top	none	4 equal lobes	-	end of 3	7(8)		2,3,4...6 absent last few setigers	overall red-brown lateral along prostomium and edges of palpal grooves	boring in wood, algae, and shells
<i>matrix</i>	M	+		+	-	falcate; bristle-top with 2 heavy smooth bosses	none	4 lobes	-	end of 2	7	7-9 post 2-3	2,3,4...6 present	?	?
<i>perata</i>	M	+		+	-	falcate; bristle-top and club shaped	none	simple collar w/ several weak lobes	-	into 5			2,3,4...6 absent post ¼	?	?
<i>polybranchia</i>	M	+/-	-	-	-	falcate; inverted bristle-top cone w/ oblique base	none	disk-like	-	end of 3	7		2,3,4...6 absent post ½	life: green & red-yellow; preserv: dark along sides prost and palps	estuarine
<i>proboscidea</i>	U	+	-	+ short	-	falcate; bristle-top	none	4 lobes, dorsal smaller than ventral	-	end of 3	7		2,3,4...6 absent last few	laterally along pros & edges of palpal grooves	sand flats, bores in rocks among <i>Mytilus</i>
<i>pseudomatrix</i>	M	+		+	-	falcate; central cone w/raised margins	none	2 flattened glandular cushions	-	end of 2			2,3,4...6 absent post ¼	palps barred	?
<i>tricuspa</i>	U	+	-	-	-	falcate; tricuspid	none	4 small lobes	-	end of 3			2,3,4...6 absent post ¾	none	intertidal, boring or encrusting
<i>pugettensis</i>	M	+	-	+	-	simple, falcate; bristle-top	acicular	4 lobes, dorsal pair smaller than ventral	-	end of 2	7	5-6	2,3,4...6 to end of body	tan-brown, prost/ant set brown; small pr black spots on dorsum occasionally	shallow subtidal intertidal sands
sp.		+	+	-	?	simple, falcate	?	?	?	end of 3			2,3,4...6 absent post ½	?	?

**BOCCARDIELLA AND SELECTED GENERA**  
**Leslie Harris**  
**Los Angeles County Natural History Museum**

Species	Prostomium	Eyes	Median antennae	Notosetae setiger 1	Companion setae, set 5	Spiniger type setiger 5	Post notop spines	Pygidium shape	Hooded hook constriction	Caruncle, to setiger	Start of notopod hook	# Hooks per row	Branchiae, from - to	Pigmentation	Habitat
<i>Boccardiella hamata</i>		+	-	-	+	simple, falcate	long falcate, recurved hooks	small ring, 2 ventral lappets w/terminal process	-	end of 3	7(8)		2,3...6 absent post ¼	none	boring wood, algae and shells; encrusting in mud and sand
<i>ligerica</i>	 weak	+	-	-	+	simple, falcate	long falcate, recurved hooks	flattened plate w/2 terminal cirri	-	end of 2	7	ant 16 post 8-9	2,3...7 absent post ¾	none	intertidal mud flats
<i>truncata</i>		+	-	-	+	7-10 falcate	none	disk-like w/ dorsal gap	-	end of 2	7(8)		2,3,4...6 absent post 1/5	life: greenish-brown dark spots behind parapodial bases	intertidal in sandstone reefs
<b>GENERA:</b>															
<i>Polydora</i>				+/-	+/-	1	+/-		+/-		7-17 bidentate		post to 5		
<i>Caraziella</i>				+/-	-	2			-		7-14 bidentate		post to 5		
<i>Boccardia</i>				+/-	-	2	+/-		-		7-8 bidentate		start 2; absent on 5		
<i>Boccardiella</i>				+/-	+	1			-		7 bidentate		start 2; +/- on 5		



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600 • (206) 407-6000 • TDD Only (Hearing Impaired) (206) 407-6006

September 30, 1994

Dear Taxonomists Interested in Marine Benthic Invertebrates from the Pacific Northwest:

This letter is a follow-up to the Pacific Northwest Aquatic Taxonomy Meeting organized by Linde Looy (Fraser Environmental Services), Bill Duncan (B.C. Environment), Gordon Green (Royal British Columbia Museum), and others and held at The Royal British Columbia Museum in Victoria, B.C. in January of this year. As a preliminary organizational effort, the meeting was successful in bringing together the large group of aquatic taxonomists working in the Northeastern Pacific region and in raising many relevant issues concerning taxonomic work. Most participants felt that to be successful, any subsequent taxonomic workshops should be limited to smaller groups of taxonomists whose interests focus on a more restricted group of organisms.

The Marine Benthic Monitoring Unit of the Washington State Department of Ecology would like to pursue the development of a smaller series of workshops. These would focus on taxonomic standardization of benthic invertebrate organisms collected from the Pacific Northwest region, including coastal and estuarine systems from Oregon, Washington, British Columbia, and Pacific Alaska. Specifically, we would like to host the first of these workshops, beginning with the examination of some of the problematic polychaete species discovered in samples we have collected from Puget Sound.

This letter is being addressed to those individuals from the Taxonomists Working Group Membership Directory (1994-1995) that specifically indicated an interest in the taxonomy of coastal and estuarine benthic invertebrates from this area. The letter will also be published in the next Southern California Association of Marine Invertebrate Taxonomists (SCAMIT) newsletter in an effort to reach anyone inadvertently overlooked in the mailing process. Participants should include any interested taxonomists from private consulting, government agencies, universities, or any other organization conducting research pertaining to the ecology and taxonomy of these organisms.

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**September 30, 1994**

**Ecology's Marine Benthic Monitoring Unit has participated in the long-term Puget Sound Ambient Monitoring Program (PSAMP) since 1988, collecting benthic invertebrates annually from 34 permanent and 42 rotational (3 sets of 14) stations located throughout Puget Sound, the Strait of Georgia, and the Strait of Juan de Fuca. From this work, a taxon list has been generated that includes 640 Polychaeta and other Annelida, 430 Arthropoda, 306 Mollusca, 74 Echinodermata, and 231 other taxa. Working with an extensive species list generated by over twelve taxonomists, Ecology recognizes the need for taxonomic standardization of the names of organisms found within Puget Sound as well as throughout Pacific Northwest waters. Such standardization serves to create compatible data sets between years of a program, as well as between various regional biological monitoring programs.**

**Mr. Larry Lovell, Mr. Eugene Ruff, and Mr. Tony Phillips, taxonomists from Southern California (all SCAMIT members) who have been identifying polychaetes for the PSAMP program, have cordially agreed to co-lead "SCAMIT-style" polychaete training sessions at our proposed workshop. Ms. Leslie Harris, the collection manager for the Los Angeles County Museum-Allan Hancock Foundation Polychaete Collection (LACM-AHF), will also co-lead the workshop. The LACM-AHF polychaete collection is second only to the Smithsonian's in size and contains the world's largest assemblage of eastern Pacific type and non-type lots. Leslie has offered to examine vouchers or problem material sent to her before the meeting. The specimens will be compared to types and authoritative material identified by Olga Hartman, Kristian Fauchald, and others. Samples to be verified by Leslie for discussion during the workshop must reach her before December 15th. For further information on how to send specimens, contact Leslie at:**

**Los Angeles County Museum of Natural History  
Invertebrate Zoology/ Polychaetes  
900 Exposition Boulevard  
Los Angeles, California 90007  
tel: (213) 744-3234 or (213) 740-5157  
fax: (213) 746-2999  
email: [docker@netcom.com](mailto:docker@netcom.com)**

**The combined experience and skill of these four taxonomists should provide for lively and informative workshop sessions.**

**Enclosed you will find a questionnaire on which you may indicate your desire and willingness to participate in this proposed workshop, and a subsequent series of similar**



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September 30, 1994

workshops based on these interests. Tentative dates, times, and an agenda for the first workshop to be held at Ecology's headquarters in Olympia, Washington, have been suggested. Please complete and return the questionnaire and any agenda suggestions to me by October 31. After receiving your responses, a final schedule and agenda will be mailed in late November. Thank you for your time and attention. We hope to make this an interesting, informative, and successful event.

Sincerely,

*Margaret Dutch*

Margaret Dutch  
Environmental Specialist  
Ambient Monitoring Section

MD:kd  
Enclosures

## Questionnaire

Please RSVP and return questionnaire to the address below by October 31, 1994:

Margaret Dutch  
WA State Dept. of Ecology - EILS      206-407-6021 (telephone)  
300 Desmond Drive                      206-407-6884 (FAX)  
P.O. Box 47710  
Olympia, WA 98504-7710

1. Do you think that a series of taxonomic standardization workshops, focused on the coastal and estuarine benthic invertebrates ranging from Oregon to Pacific Alaska, would be interesting and useful?
2. Would you participate in such a series of taxonomic standardization workshops?
3. Would you attend a Puget Sound Polychaete Workshop hosted by the Department of Ecology in Olympia, Washington on January 26 and 27, 1995?
4. If these dates are not suitable for you, would February 2 and 3, 1995 be better?
5. How far from your home would/could you travel to attend these workshops?
6. How many days/hours do you think are reasonable or would you be willing to spend on such a workshop?
7. Do you think more than one major taxonomic group (e.g., Polychaete, Mollusca, Arthropoda, Miscellaneous Taxa) could/should be presented at one meeting?
8. We are proposing that this series of workshops include coastal and estuarine benthic invertebrates with geographic distributions ranging from Oregon to Pacific Alaska. Do you think this is too broad a distribution? Should we limit our work to examination of specimens from a more limited geographical range? What range would you suggest?
9. Would your work place be interested in hosting the next in this series of regional taxonomic workshops?
10. Do you have any comments regarding the attached suggested agenda? What would you add to or delete from it? (Please use back of paper to make further comments)?

Your Name:

Affiliation:

Mailing Address:

## SUGGESTED AGENDA

### DAY 1

- 9:00 a.m. - Registration, coffee & donuts
- 9:30 - Welcome address (Ms. Margaret Dutch)
- taxonomic standardization - definition, need
  - workshop goals
  - brief review of workshop agenda
  - introduction of Ecology personnel, workshop leaders from Southern California
- 9:45 - Introductions - everyone in room to participate:
- name
  - affiliation
  - taxonomic specialty
  - reason for attending workshop
- 10:00 - Taxonomic Standardization - Historical perspective and resources
- Southern California Association of Marine Invertebrate Taxonomists (SCAMIT) (Mr. Larry Lovell)
  - Los Angeles County Museum - Allan Hancock Foundation Polychaete Collection (Ms. Leslie Harris)
- 10:30 - Break
- 11:00 - Puget Sound Ambient Monitoring Program - Department of Ecology's Marine Sediment Monitoring Program (Dr. Roberto Llansó)
- overview of program
  - presentation of master species list
- 11:30 - Workshop Organization (Mr. Larry Lovell, Mr. Eugene Ruff, Mr. Tony Phillips, Ms. Leslie Harris)
- Outline the organization of afternoon and next day taxonomic workshop sessions
- 12:00 noon - Break for lunch, discuss supper plans, make supper reservations
- 1:00 p.m. - Polychaete workshop session to be co-lead by Mr. Larry Lovell, Mr. Eugene Ruff, Mr. Tony Phillips, and Ms. Leslie Harris. The sessions will begin with presentation of specimens by the co-leaders to the audience. The presentations will be interactive, with open and lively discussion between the co-leaders and the audience members. Audience members will also be encouraged to present their specimens and taxonomic problems to the group. At least one dissection and one compound microscope will be available with video display capability for viewing by the audience. Other dissection and compound scopes will be set up in the room for use by participants. Refreshments will be available throughout the day for informal breaks and for the comfort of participants.
- 4:30 p.m. - Break for the day

**DAY 2**

- 9:00 a.m. - Continuation of the polychaete workshop session to be co-lead by Mr. Larry Lovell, Mr. Eugene Ruff, Mr. Tony Phillips, and Ms. Leslie Harris.
- 12:00 noon - Break for lunch
- 1:00 p.m. - Continuation of the polychaete workshop session to be co-lead by Mr. Larry Lovell, Mr. Eugene Ruff, Mr. Tony Phillips, and Ms. Leslie Harris.
- 3:30 p.m. - Discussion of future Pacific Northwest invertebrate taxonomic workshops
- workshop format and standardized agenda for future meetings
  - location of subsequent meetings
  - method of communication and costs
  - other details
- 4:30 p.m. - Adjourn