



**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
San Pedro, California 90731

May 1990

Vol. 9, No.1

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**NEXT MEETING:** Nassarius

**GUEST SPEAKER:** Don Cadien  
Sanitation Districts of Los Angeles County

**DATE:** Monday, 11 June 1990, 9:30 A.M.

**LOCATION:** Cabrillo Marine Museum  
3720 Stephen White Drive  
San Pedro, CA 90731

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**MINUTES FROM MEETING ON MAY 14, 1990**

The first part of the meeting was devoted to determining what groups of crustaceans, mollusks, echinoderms, and other minor phyla were problematic taxa, and which groups SCAMIT wanted to cover during the next year. A tentative schedule was made up and is enclosed. As always, this schedule is tentative and subject to change. If someone comes to town and is willing to present information on a particular group, SCAMIT can surely find an audience.

The afternoon session of the meeting was devoted to arranging the SCAMIT literature collection into a usable, functional library. Several collections of literature have been donated to SCAMIT and we made an initial attempt at organizing this literature.

Additional sessions to further organize the literature will be scheduled for future SCAMIT meetings. A special thanks to those people who helped with this initial organization of the SCAMIT literature.

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

SCAMIT newsletter is not deemed to be a valid publication  
for formal taxonomic purposes.

Cladocarpus: John Ljubenkov from MEC Analytical presented a revised key to the species of Cladocarpus from the eastern Pacific. The key was revised to include a new species which John has found. The key for the species of Cladocarpus is included in this newsletter. The voucher sheets for Cladocarpus sp.A will also be included in either this newsletter, or a later edition.

SCAS Meeting: The annual meeting of the Southern California Academy of Sciences was held May 11 - 12 at California State University, Dominguez Hills. Next year's meeting in May 1991, will be the 100th anniversary meeting, and will be co-hosted by the Natural History Museum of Los Angeles County, the University of Southern California and the California Museum of Science and Industry. SCAMIT will try to organize a symposium for this 1991 meeting.

Picnic Reminder: Remember to mark your calendars for the annual SCAMIT picnic to be held Saturday, August 18, 1990 at Doheny State Beach. We are planning to eat at about 1:00 so try to arrive early so you can avoid any traffic or parking problems, be there for fun and games, and best of all, you get the better pick of the eats! Also, if you are planning to attend, please let Larry Lovell at (619) 945-1608, know how many people there will be in your party and most of all, how you can help!

Upcoming Meetings:

June 18 - 22:  
Seattle, WA

Western Society of Malacologists,

For further information contact:  
Roland Anderson  
The Seattle Aquarium, Pier 59  
Seattle, WA 98101  
(206) 386-4359

December 27 - 30, 1990:  
Monterey, CA

Western Society of Naturalists,

For further information contact:  
Dr. David H. Montgomery  
Department of Biological Sciences  
California Polytechnic State University  
San Luis Obispo, CA 93407  
(805) 756-2446 or 541-6812 (home)

December 27 - 30, 1990:  
Antonio, TX

American Society of Zoologists, San

For further information contact:  
Mary Adams-Wiley  
ASZ  
104 Sirius Circle  
Thousand Oaks, CA 91360  
(805) 492-3585

SCAMIT 1990 - 1991 SCHEDULE

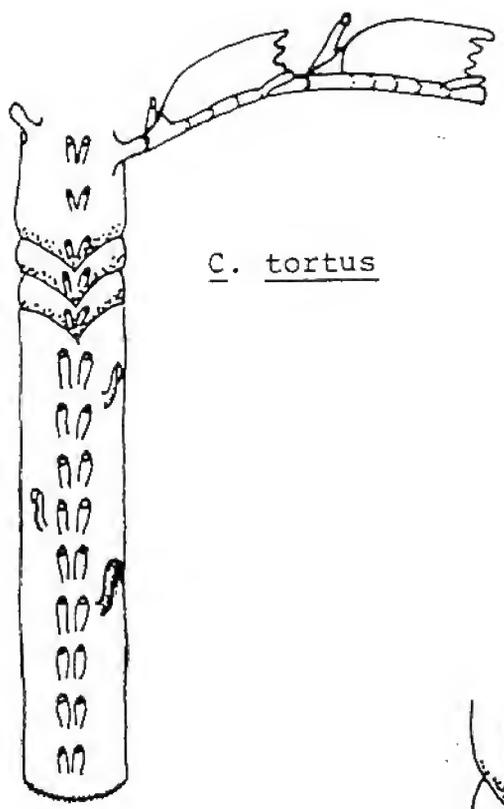
<u>DATE</u>	<u>TOPIC</u>	<u>PRESENTER</u>
6/11/90	<u>Nassarius</u>	Don Cadian, Sanitation Districts of LA County
7/9/90	Hydrozoa	John Ljubenkov, MEC Analytical
8/13/90	Scale Worms	Ross Duggan, City of San Diego
9/10/90	Open	
10/15/90	<u>Orchomene</u> and <u>Hippomedon</u>	Ron Velarde, City of San Diego Doug Diener, MEC Analytical
11/19/90	Spionidae	Larry Lovell, Private Consultant
12/10/90	Sponges	Karen Green, Private Consultant
1/14/91	Flatworms	
2/11/91	Hesionidae	Ron Velarde, City of San Diego
3/11/91	Nuculanidae	Paul Scott, Santa Barbara Museum of Natural History
4/8/91	Cirratulidae	Tony Phillips, Hyperion



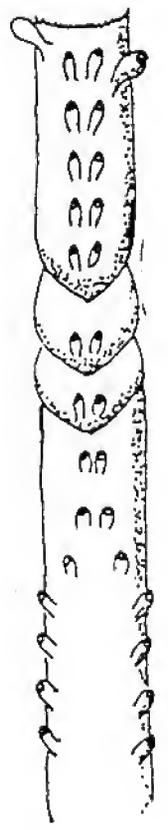
May 14, 1990

A KEY TO THE EASTERN PACIFIC GENUS Cladocarpus Allman, 1874  
by John Ljubenkov, MEC Analytical

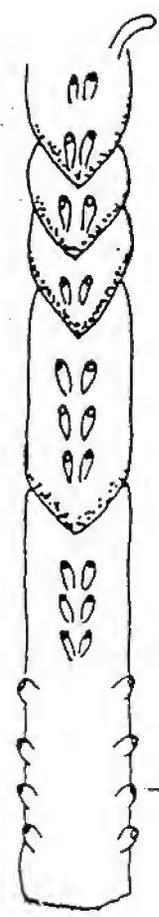
1. Stem simple, composed of only one tube.....2
1. Stem fascicled, composed of many tubes.....C. distomus
2. Front of stem with median row of single nematophores;  
with weak chevrons or no chevrons.....3
2. Front of stem with paired row of nematophores;  
no hydrothecae on stem face.....4
3. No chevrons: no hydrothecae on stem face.....C. moderatus
3. Weak chevrons; hydrothecae on stem face below  
first branch pedicel and above chevrons.....C. gracilis
3. One large nematophore on the face of each  
of the two chevron points; remainder of  
nematophores much smaller, running up face  
of stem with their openings mainly  
alternating right to left.....C. sp.A
4. Paired nematophores always narrowly spaced  
in row; very steep angle on chevrons.....C. tortus
4. Abrupt transition from widely spaced,  
paired nematophore row on the lower stem  
to narrowly spaced, paired nematophore  
row just below the first chevron.....C. vancouverensis
4. A few transitionally spaced nematophore  
pairs between the wide and narrow pairs.....C. pinguis



C. tortus



C. pinguis



C. vancouverensis

- var wandor



C. moderatus

Hydrotheca



C. sp A



lower stem



C. gracilis

# The Polyplacophoran Newsletter

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Fax 0382 201604

We (Karen Gowlett-Holmes and Allan M. Jones) are intending to organise and distribute a newsletter containing information of interest to all those around the world who are studying, or are interested in, the chitons and their allies. It is proposed to share the co-ordination of both content and distribution initially between KG-H and AMJ, although any offers of assistance will be welcomed: the newsletter will be produced for the time being using facilities offered by AMJ.

The idea for a newsletter stemmed from discussions at the American Malacological Society Symposium in Key West, Florida, in 1987. Whilst it was clear that there was a reasonable exchange of ideas etc between the American and European workers, we felt that there was much to be gained from facilitating a wider exchange of ideas, materials, etc, through the medium of a semi-formal newsletter. This document is a call for information, addresses of interested parties, brief articles for inclusion and requests for exchange of materials as well as for any reactions to the whole concept of such a newsletter.

\*\*\*\*\*

We would like to include in the early issues brief accounts of the areas of current activities of as many workers as possible and we would appreciate receiving a paragraph from as many researchers as possible describing their current activities and outlining any future intentions. Can you offer material or facilities to other workers, either through visits or by post? We have included a list of those to whom we have sent a copy of this circular...can you give us further names to put on the mailing list?

We hope that you will find this idea worth assisting; without the support of participants throughout the world, it will fail to achieve its primary aim. Please respond initially by completing the attached questionnaire and returning it to either KG-H (southern hemisphere, Asia) or AMJ (northern hemisphere).

\*\*\*\*\*

The primary objectives of the newsletter as currently envisaged can be summarised as:

1. To promote and facilitate exchange of news, ideas, and information on a worldwide scale.
2. To disseminate information on current and proposed research projects.
3. To provide a medium for the advertisement of requests for material and specimens.
4. To provide a medium for advertising forthcoming conferences, etc
5. To provide a medium for articles on observations/investigations not yet complete enough for formal publication.

Polyplacophoran Newsletter  
Request for information

Name & Title .....  
.....  
.....

Present address .....  
.....  
.....  
.....  
.....  
.....

Y    N

Do you wish to receive copies of the newsletter?

Y    N

Would you be willing to pay a small subscription to cover the costs of production and distribution?

Y    N

Would you be willing to provide a **research profile**? If so, please attach this to this questionnaire when you return it.

Y    N

Do you have any requests for supply or exchange of specimens from other workers? If so please outline them for us.

Y    N

Do you know of any other persons who would like to be included on a mailing list? Please **attach details** for any such persons/groups when replying.

Please provide a **list of any relevant publications produced since 1987**. It is hoped to collate an annual list of publications as part of the newsletters function.

Do you have any **constructive suggestions** for the content and objectives of this newsletter over and above those stated in our outline.

## Preliminary Notice

### FIRST INTERNATIONAL SYMPOSIUM ON CHITONS: PAST AND PRESENT

Venue: Adelaide, South Australia  
Proposed dates: 2-6 December 1991

Following the success of the Symposium on the Biology of Polyplacophora held at the Annual Meeting of the American Malacological Union at Key West, Florida, in July, 1987, participants agreed that a symposium specifically on chitons should be held, hopefully with a much broader scope. This is the preliminary notice of such a symposium to be held at the South Australian Museum, Adelaide.

Participation is invited from all people with an interest in any aspect of chiton biology, taxonomy or palaeontology.

The South Australian Museum is located in the centre of Adelaide, adjacent to the University of Adelaide, and very close to the central shopping district. The S.A. Museum holds a large collection (over 9,000 lots) of both Recent (dry and spirit) and fossil chitons, including types of over 190 species. The Natural Sciences Division of the S.A. Museum moved into a new, purpose-built building in 1985, and has excellent collection storage and working areas. We are able to offer participants the opportunity to study the collections before, during and after the Symposium, the S.A. Museum does not charge bench fees.

South Australia has the most diverse chiton fauna of any area in the world. Adelaide is within a short distance of a wide variety of chiton habitats, sheltered seagrass beds to exposed rocky reefs, and so offers ample opportunities for field work. Localities for fossil chitons are further afield, but several can be reached in a day's travel by road. If there are sufficient expressions of interest, field trips will be organised, from half day local trips to trips of several days to more distant locations. Trips will also be organised to areas such as the Barossa Valley wine district and to fauna parks.

We hope you will be able to attend this Symposium, and would welcome any suggestions you may have on any aspect of it, including alternative dates. If necessary, the timing of the Symposium will be altered to enable as many people as possible to attend.

Please return the completed form by as soon as possible

To: Mrs K.L. Gowlett-Holmes, Telephone: (08) 223 8830  
Marine Invertebrates Section, +618  
South Australian Museum,  
North Terrace, FAX: (08) 232 1714  
Adelaide, South Australia, 5000. +618

Please send me the Second Announcement and other information on the First International Symposium on Chitons: Past and Present, 2-6 Dec 1991.

Name:.....  
Mailing Address:.....  
..... City:.....  
State:..... Country:..... Mail/Zip Code:.....  
Telephone Office:(...) Home:(...) FAX:(.....)

Affiliation:.....

Area of Research/Interest:.....  
.....  
.....

I would be interested in leading/participating in the following workshop(s):-

- Chiton Ecology
- Biogeography and Systematics
- Palaeontology
- .....
- ..... (we would welcome suggestions)

I would like to present a paper. Yes No

I would be interested in ancillary fieldtrips. Yes No

Pre-symposium	Post-symposium	Both
Intertidal/snorkel	SCUBA Diving	Fossil

I would like tourist information. Yes No

I would like information on accommodation. Yes No

University College Hotel/Motel Self-contained Units

I would like to make the following suggestions:-  
(e.g. alternative dates, etc).

.....  
.....  
.....  
.....  
.....



**Southern California Association of  
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3720 Stephen White Drive  
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June 1990

Vol. 9, No.2

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**NEXT MEETING:** Hydrozoa

**GUEST SPEAKER:** John Ljubenkov  
MEC Analytical Systems Inc.

**DATE:** Monday, July 9, 1990, 9:30 A.M.

**LOCATION:** MEC Analytical Systems Inc.  
2433 Impala Dr.  
Carlsbad, CA 92009

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**MINUTES FROM MEETING ON JUNE 11, 1990**

Nassarius: Don Cadien, Sanitation Districts of Los Angeles County, hosted this months Nassarius meeting. Most of the meeting involved discussion of the characters available to differentiate the juvenile species of Nassarius. A discussion of the Nassariidae is included in this newsletter.

Cladocarpus sp. A: John Ljubenkov, MEC Analytical Systems, provided a voucher sheet for Cladocarpus sp. A. It can be added to the revised key to the species of Cladocarpus that was included in the previous edition of the SCAMIT newsletter (Vol 9 no. 1).

Next Meeting: A map to MEC is included in this newsletter.

New Publications: Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: DECAPOD CRUSTACEANS. An order form for this publication is included with this newsletter

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Monterey, CA

For further information contact:  
Dr. David H. Montgomery  
Department of Biological Sciences  
California Polytechnic State University  
San Luis Obispo, CA 93407  
(805) 756-2446 or 541-6812 (home)

December 27 - 30, 1990: American Society of Zoologists,  
San Antonio, TX

For further information contact:  
Mary Adams-Wiley  
ASZ  
104 Sirius Circle  
Thousand Oaks, CA 91360  
(805) 492-3585

## NASSARIIDAE OF THE WEST COAST

D. B. Cadien

County Sanitation Districts of Los Angeles County

11 June 1990

Representatives of only two genera of the gastropod family Nassariidae occur on the U.S. west coast; *Ilyanassa* and *Nassarius*. The first genus contains only the species *I. obsoleta* (Say 1822). Although not native to the west coast (introduced from the Northwest Atlantic) *Ilyanassa obsoleta* is now found from British Columbia to San Francisco Bay on mudflats. A second introduced species, the Japanese *Nassarius fraterculus* (Dunker 1859), has been reported from Washington (Austin 1985). Both of these introduced species are illustrated in Rice (1971) and Abbott (1974).

Nine other species of *Nassarius* have been reported to occur in the northeast Pacific north of Mexico:

*catallus* (Dall 1908)  
*cerritensis* (Arnold 1903)  
*delosi* (Woodring in Woodring, et al 1946)  
*fossatus* (Gould 1849)  
*insculptus* (Carpenter 1864)  
*mendicus* (Gould 1849)  
*perpinguis* (Hinds 1844)  
*rhinetes* (Berry 1953)  
*tegula* (Reeve 1853)

The extant species fall into several subgenera, but will not be discussed by subgenus. As several reviewers have remarked, the diagnoses of the subgenera are largely overlapping, and allocation of species into subgenera is a matter of much disagreement. The most recent comprehensive examination of our fauna is that of Demond (1952), which is still largely valid. Like nearly all analyses, however, hers did not address juveniles.

*catallus*. range - off San Miguel Island to Panama (Demond 1952); in 40-364m. Demond's record from off San Miguel Island is the only one from waters north of Mexico of which I am aware. Keen (1971) treats this species as a southern form which does not range into our waters. If Demond's record is accurate the species reaches its extreme northern range endpoint within the southern California bight, perhaps as an intermittent El Nino relict. Materials in the collection of the Los Angeles County Museum of Natural History (LACMNH) indicate that this is predominantly a Panamic species, which reaches the effective northern limit of its range near Cedros Island on the outer coast of Baja California. Although this species was well represented in the LACMNH collection, there were no lots from U.S. waters. Illustrated in Keen (1971).

*cerritensis*. range - Long Beach (recorded in Oldroyd 1927, not reported in this area in the last 60 years) to Guaymas, Mexico: in 35-55m (Keen 1971). This species is questionably a member of the fauna (Woodring in Burch 1945), the modern record of Oldroyd needs reexamination, although the species occurred in (and was described from) Pleistocene deposits in southern California. All of the numerous lots of this species in the LACMNH collection were from Mexican waters. Illustrated in Keen (1971).

*delosi*. range - ?Oregon to San Ignacio Lagoon, Baja California; in 60-80m (Demond 1952 - as *californiana*). This is a replacement name for the species identified as *N. californiana* (Conrad 1856) by Arnold (1903). It is very similar to *N. rhinetes* which has also been confused with Conrad's (an extinct Pliocene species) in the literature. Uncertainty as to the correctness of literature records leads to the uncertainty in the range. Dr. James McLean (LACMNH) believes this to be a more southern form than *N. rhinetes*, if the two can be proven to be valid species. Specimens in the LACMNH collection came from as far north as Monterey Bay, but most were from Baja California. The species is rare, and has been reported only twice since Woodring's erection of the name in 1946 (both by Chace - 1957, 1962). The only illustrations are in Arnold (1903), and in Woodring et al (1946).

*fossatus*. range - Sitka, Alaska to Cedros Island, Baja California (Demond 1952); intertidal to 40m (Woodring in Burch 1945). The largest of the west coast species, adults are found only intertidally or just subtidally (0-10m). Juveniles are found infrequently at somewhat greater depths where sediments consist of sands which are not too fine. Illustrated in McLean (1969).

*insculptus*. range - Pt. Arena to the Gulf of California: 40-400m (Abbott 1974). This is the only nassariid to occur commonly in California at depths greater than 60m. It is quite abundant at many locations on the upper slope off southern and central California. Illustrated in Keen (1971).

*mendicus*. range - Forrester Island, Alaska to Magdalena Bay, Baja California (Demond 1952); intertidal to 80m. The subspecies or form *N. cooperi* has a somewhat narrower range both geographically and bathymetrically. Although most familiar from mudflats and shallow muddy bottoms, this species also occurs offshore in areas receiving enough particulates to provide a muddy bottom at shallow shelf depths (ie. off river mouths and near outfalls). It is the only west coast species with prominent axial ribs, and is usually easily identifiable as a result. Juveniles have this sculpture less well developed and must be carefully examined. Illustrated in McLean (1969).

*perpinguis*. range - Puget Sound to Magdalena Bay, Baja California; in 20-100m (Demond 1952). Illustrated in McLean (1969).

*rhinetes*. range - Oregon to San Ignacio Lagoon, Baja California (Demond 1952); 3-70m (Abbott 1974). This is Berry's replacement name for a recent species frequently misidentified as the Pliocene *Schizopyga californiana* (Conrad 1856). Addicott (1965) commented on the similarity of *N. rhinetes* and *N. delosi* without suggesting the two were synonymous. Cadien (1980) implicitly indicated they were synonymous by listing *N. delosi* (which has priority), and omitting *N. rhinetes* from the list of valid species. Dr. James McLean indicated (personal communication - D. Cadien June 1990) that the two species were probably valid, but that some controversy over their validity remains. If they are in fact both valid, he believes *N. rhinetes* to be more northern in its distribution than *N. delosi*. Their ranges overlap in central California, and one LACMNH lot taken off Monterey contains both species. Illustrated in Berry (1953) and in Abbott (1974).

*tegula*. range - San Francisco, CA to Panama (Austin 1985): intertidal mudflats and shallow water in bays. This is the smallest of the species considered, and the only one with a heavy callus on the body

whorl as an adult. Even in areas where grain size favors bay species at depth (i.e. at 60m off Palos Verdes) this species does not occur. Illustrated in McLean (1969).

A key to the adults of west coast *Nassarius* species exists (Demond 1951, 1952 - the same key is offered in both), but it includes a number of species from Baja California which do not occur further north. It also retains *Nassarius californiana* and omits *N. delosi*. Many of the discriminatory characters of the adult are not evident in juveniles, and confusion of small specimens of co-occurring species is an everpresent problem. Those species which are ecologically isolated can be easily separated from the normal shallow shelf group. Only two of the eight species can be separated in this fashion; *Nassarius tegula* and *N. insculptus*. *Nassarius tegula* only occurs in shallow warm embayments on fine muddy sediments. There are no records from open coastal areas, or from sandy sediments. Even where muddy sediments are available offshore at depth (i.e. 60m off Palos Verdes) this species is absent.

Although *N. insculptus* has a composite bathymetric range placing it in depths as shallow as 40m, it is usually found much deeper in the southern California Bight. Most lots in this part of the species' range are from deeper than 150m. There is thus little or no overlap bathymetrically with other members of the genus, at least in the Bight.

The remaining species all have the potential of co-occurring at some time, and discrimination of the juveniles of these species becomes a desirable capability. With the assistance of several large lots of some of the more commonly co-occurring species from the LACMNH collection, we attempted to develop reliable separatory characters for juveniles during the meeting. The two species which were most in need of separatory criteria for juveniles were *Nassarius fossatus* and *N. perpinguis*.

Individuals were drawn from several lots, and matched as closely as possible by size. The characters which proved most useful in separation of juveniles were those of suture (more impressed in *N. perpinguis*), strength of the ornamentation on the subsutural band (smaller, but much more well defined granulation of the subsutural band in *N. perpinguis*), spire angle (generally narrower in *N. perpinguis*, although the differences are less pronounced in the smallest juveniles), and degree of whorl inflation. This last character was perhaps the most constant. In all cases (down to specimens of 4mm total length) the whorls of *N. perpinguis* were more rounded than those of *N. fossatus*. Whorls of *N. fossatus* are virtually straight sided on the spire, although the body whorl itself is more inflated. Even on the body whorl, however, the straight-sidedness evident in the spire is manifested by a change in angle at the periphery of the whorl which separates it into anterior and posterior slopes differing in angle.

One other useful character was the loss of definition of the axial ribs on the anteriormost portion of the body whorl in *N. fossatus*. This character, while always found in *N. fossatus* regardless of size, was also present in the smallest *N. perpinguis* and cannot be relied upon to separate shells in the 4-6mm range. For larger animals it should prove more useful, but separations based on this character should be confirmed with one or more of the other characters mentioned above.

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Addicott, W. O. 1965. On the identification of *Schizopyga californiana* Conrad, a California Pliocene gastropod. Proceedings of the California Academy of Sciences, 4th Series, 33(2): 47-58.  
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Woodring, W. P., M. N. Bramlette, and W. S. W. Kew. 1946. *Geology and paleontology of Palos Verdes Hills, California*. U.S. Geological Survey Professional Paper # 207: 145pp.

Cladocarpus sp. A  
Plumulariidae, Hydrozoa

SCAMIT Code: MEC

Date Examined: May 14, 1990  
Voucher by: John Ljubenkov, MEC

Synonymy: None

Literature:

- Fraser, C.M., 1937. Hydroids of the Pacific Coast of Canada and The United Staes. University of Toronto Press. 277pp. + 44 plates
- \_\_\_\_\_, 1938. Hydroids of the 1934 Allan Hancock Pacific Expedition. Allan Hancock Pac. Exp, Vol. 4, no. 5, pp. 1-74.
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- Clarke, S.F., 1907. Rept. Scient. Results Exp. Eastern Trop. Pac. VIII. The Hydroids. Mem. Mus. Comp. Zool. Harvard, Vol. 35, pp. 1-18.

Diagnostic Characters:

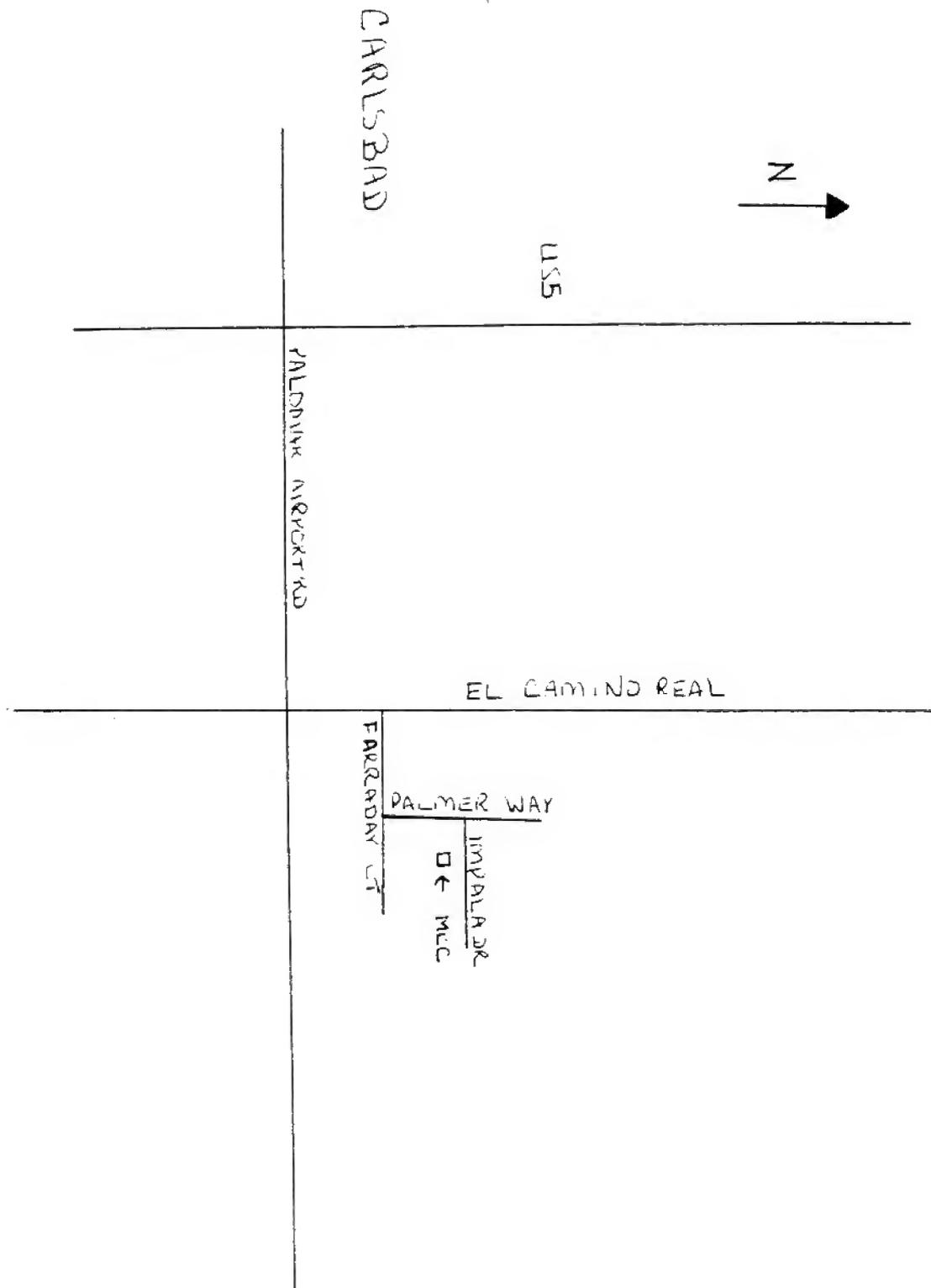
1. Nematothecae (specialized cups which hold defensive stinging polyps) form a single row on the leeward side of the colony stem (or hydrocaulis).
2. Just below the origin of the branch pedicels are two V-shaped structural creases which delineate a single chevron-shaped segment.
3. The first two nematothecae are each nestled at the point formed by each crease.
4. A node formed by two annuli is often found below the chevron segment.
5. Hydrothecae similar to the other members of genus.

Distribution: Only one station at Encina Outfall, about 47 meters deep. 20 colonies collected. Spring 1990

Remarks:

The hydrothecae of Cladocarpus is similar to those of Aglaophenia but is deeper bodied and like Aglaophenia has a small nematophore on either side at the top and an unpaired elongate nematophore at the base. The chevron shaped segments are characteristic of Cladocarpus and appear to be a flex point on which the colony can pivot to maintain itself properly in a

changing current. There are probably two sub-genera characterized by having a single or double row of hydrocauline nematophores. Also occurring in large numbers at this station is Campanularia gelatinosa, which has a root-like base and may also be adapted for high current velocities



MAP TO MARINE ECOLOGICAL CONSULTANTS (MEC)

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American Fisheries Society Special Publication 17

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**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
San Pedro, California 90731

July 1990

Vol. 9, No.3

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**NEXT MEETING:** Etymology \*note Schedule Change\*

**GUEST SPEAKER:** John Ljubenkov  
MEC Analytical Systems Inc.

**DATE:** Monday, August 13, 1990, 9:30 A.M.

**LOCATION:** Cabrillo Maritime Museum  
3720 Stephan White Drive  
San Pedro, CA 90731

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**MINUTES FROM MEETING ON JULY 9, 1990**

John Ljubenkov presented a workshop on hydroids. Much of the time was spent defining the characters that are commonly used to identify hydroids. The following are some of the characters and their definitions/illustrations.

**Hydrothecae-**

campanulariform	-bell/cup-shaped hydrothecae located on the terminal end of the stalk
sertulariform	-hydrothecae arranged on opposite sides of the stalk
plumulariform	-hydrothecae arranged in one row on the branches of the colony

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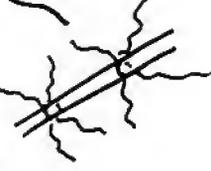
Hydrorhizae- colony shape/method of attachment

- |             |  |
|-------------|--|
| filiform    | -colony forms a net on the surface of the substrate              |
| lamelliform | -base of the stalk is disk-like                                  |
| rhizoid     | -root-like structures that anchor the hydroid in a mud substrate |

Stalk Structure-

- |              |                                   |
|--------------|-----------------------------------|
| monosiphonic | -single stalk supports the colony |
| polysiphonic | -multiple stalked, "fascicled"    |

Ramification- "the branching pattern of the colony". These characters are essentially the same as in vascular plant taxonomy.

- |           |  |
|-----------|--|
| irregular | -    |
| whorled   | -  |
| opposite  | -   |
| alternate | -   |

Operculum position-

- |                      |  |
|----------------------|--|
| adcauline (adjacent) | - operculum attachment is closest to the stem    |
| abcauline (opposite) | - operculum attachment is farthest from the stem |

Tentacle Structure-

- |              |              |
|--------------|--------------|
| filiform     | -simple      |
| monifiliform | -beaded      |
| capitate     | -bulbous tip |

John also showed some examples of local benthic hydroids. Much of the rest of the meeting time involved the identification of specimens provided by the participants.

Thank you John for a very informative session.

Etymology: During the June meeting, John raised the topic of the number of gender problems in species names occurring within many of the agency's species lists as well as the scientific literature. John also distributed an editorial he had written on this subject "A Note on the Use of Latin in Scientific Words". A short discussion followed that led to the designation of the August SCAMIT meeting to Etymology and correction of agency's species lists. A Note on the Use of Latin in Scientific Words by John Ljubankov has been included in the newsletter.

Schedule Change: The Scaleworm meeting originally scheduled for August 13, 1990 has been rescheduled for September 10, 1990. A meeting on Etymology will be substituted for the August meeting.

Barnard Meeting Note: A Barnard amphipod workshop has been scheduled for the December SCAMIT meeting. As a result there have been some changes to the original schedule. The Orchomene and Hippomedon meeting scheduled for October has been rescheduled for December so as to coincide with the Barnard amphipod workshop. The Sponge meeting originally scheduled for December has been rescheduled for May 1991.

The following topics will replace those topics listed in the schedule in the SCAMIT Newsletter Vol 9, No 1.

<u>Date</u>	<u>Topic</u>	<u>Presenter</u>
8/13/90	Etymology	John Ljubankov, MEC Analytical
9/10/90	Scaleworms	Ross Duggan, City of San Diego
10/15/90	<u>Epitonium</u>	Helen DuShane, L.A. Co. Museum
11/??/90	Spionidae	Larry Lovell, Private Consultant
12/10/90 12/11/90	Amphipod Workshop & <u>Orchomene</u> and <u>Hippomedon</u>	J.L. Barnard, Smithsonian Institution James Thomas, Reef Foundation Florida Doug Diener, MEC Analytical Ron Velarde, City of San Diego



Amphipod Indexes: Two new marine amphipod indexes (J.L. Barnard and C.M. Barnard) are now available. If you are interested, the information for acquiring the indexes is included in the newsletter.

Picnic Reminder: Remember to mark your calendars for the annual SCAMIT picnic to be held Saturday, August 18, 1990 at Doheny State Beach. We are planning to eat at about 1:00 so try to arrive early so you can avoid any traffic or parking problems, be there for fun and games, and best of all, you get the better pick of the eats! SCAMIT will provide the main course and the drinks. SCAMIT members will provide the side dishes. If you are planning to attend, please let Larry Lovell at (619) 945-1608, know how many people there will be in your party and what side dish you will be bringing. Have Fun!

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

Officers

President	Ron Velarde	(619) 226-0164
Vice-President	Larry Lovell	(619) 945-1608
Secretary	Ross Duggan	(619) 226-8175
Treasurer	Ann Martin	(213) 648-5317

## A NOTE ON THE USE OF LATIN IN SCIENTIFIC WORDS.

Latin is a language in which every noun has a sex or gender. Each noun is either masculine, feminine, or neuter and there is no way to guess by the meaning of the word what gender it is. An adjective which modifies a noun must end in the proper ending for that gender. Therefore, the ending of a species name, if it is an adjective or a participle in the nominative singular, must have the proper ending. The problem for SCAMIT members comes when a species is placed in another genus whose name is a different gender than the original genus name of the taxon. Article 31(b) of the International Code of Zoological Nomenclature is quite specific in stating that this must be done. To do otherwise causes many other problems in the citations of scientific names, and makes the author of the mistakes appear ignorant of the rules.

A Latin dictionary, for example Langescheid's, and the International Code of Zoological Nomenclature are indispensable works to aid the taxonomist in determining the correct endings. The basic procedure may be summed thusly:

Step 1: Determine the gender of the genus. In the dictionary all nouns have an m, f, or n cited to indicate gender.

Step 2: Determine the root of the adjective which forms the species name and add -us for male, -a for female, and -um for neuter names.

There are two main exceptions:

1: Nouns in apposition - The ICZN gives an example of a species name phobifer which actually could be either an adjective translated as "fear bearing" or a noun in apposition, in which case it would be translated as "The Fear Bearer". If it is a noun then the ending will not change with a generic name of another gender. If it is taken as an adjective, one of the above mentioned endings must be appended. Authors should be specific about usages in cases such as this or rulings will be made by grammarians from the International Commission.

2: Nouns in the Genitive - The genitive case denotes possession and is translated "of (a name)" or by adding " 's " to the name. If the name is feminine the ending -ae is appended, e.g. myrae ("of Myra" or "Myra's") or idae ("of Ida" or "Ida's"). If the name is masculine -i is appended, e.g. hyperioni ("of Hyperion"). If the name is in honor of two men or a man and a woman the ending is -orum, e.g. berkeleyorum, and in the case of two or more women the ending is -arum, but unfortunately no examples come to mind. These endings do not change with the gender of the generic name.

The correct application of the rules of Latin to scientific

names depend on taxonomists recognizing the roots which compose the names they use. This can often be a tricky procedure when the names are composed of more than one root. Let us take the latin word maculus, meaning a spot. This is a noun whose gender is masculine. When an adjective is formed from this word, the root to which the endings are added is maculat-. This means the word is actually changed around so that it may accept different endings in a way unpredictable to the inexperienced student. The ICZN gives a list of examples of these changing endings. Now, if we wish to construct the phrase "the spotted man", we take the word vir which means "man" and is masculine and add maculatus (with the masculine adjectival ending) and we have vir maculatus, the spotted man.

There are other rules to remember in the coining of scientific names, but they are too much to go into here. Please refer to the references cited above because all the rules are important. Remember that the more you begin to recognize the words which compose the scientific names you use, the more you will learn to appreciate the poetry and sense of the names.

We are sending you one or more of the following items:

1. Name Index to Freshwater Gammaridea
2. Name Index to Marine Gammaridea
3. Geographic Index to Marine Gammaridea

If you want any of the others mentioned above please write to J.L. Barnard, NHB-163, Smithsonian Institution, Washington, D.C. 20560, USA

We will be reissuing the above items in the future in updated and more complete form; the data bases are being updated continuously.

If you wish to have future issues please send us a postcard to the above address stating WHICH item you want to receive in the future. Thank you.

We will be happy to learn of needed corrections but please send us only corrections based on literature already published from the years 1758 to 1986. We do not enter unpublished information.



**Southern California Association of  
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August 1990

Vol. 9, No.4

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**NEXT MEETING:** Scaleworms (non-Aphroditidae)  
**GUEST SPEAKER:** Ross Duggan  
City of San Diego  
**DATE:** Monday, September 10, 1990, 9:30 A.M.  
**LOCATION:** Allan Hancock Foundation, Room 30  
University of Southern California

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MINUTES FROM MEETING ON August 13, 1990

Latin Grammar for Scientific Names Workshop: John Ljubenkov, MEC Analytical Systems Inc. hosted this month's meeting. The goal of the meeting was to provide an elementary working knowledge of the correct structure of the scientific name. A long-term SCAMIT goal is the correction of the erroneous names on participating agency's species lists.

John introduced the proper nominative and genitive endings for the construction of species names from male, female and neuter nouns. In addition, some of the time was spent on the correct pronunciation of the vowels within the latin alphabet. Most of the time was spent scanning species lists and discussing various examples of errors in the species suffixes.

John is working up a detailed synopsis discussing the correct use of Latin in scientific nomenclature. It will be distributed in a SCAMIT newsletter in the near future. For the time being, the following is a list of relevant literature and English-Latin dictionaries.

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### Latin - English Literature

- Borror, D.J. 1971. Dictionary of Word Roots and Combining Forms. National Press Books. Palo Alto, California.
- Handford, S.A. and M. Herberg. 1966. Langenscheidt Pocket Dictionary - Latin English/ English Latin.
- ICZN, 1965, 1985. International Code of Zoological Nomenclature.
- Jaeger, E.C. 1978. A Source Book of Biological Names and Terms. 3rd Ed. Charles C. Thomas, Springfield, Illinois.
- Mayr, E. 1969. Principles of Systematic Zoology. McGraw-Hill Book Company. New York, New York.
- Ottenheimer, I. and M. Ottenheimer. 1955. Latin - English Dictionary. Ottenheimer Publishers, Inc. Baltimore, Maryland.
- Simpson, D.P. 1963. Cassell's Latin Dictionary - Latin/English, English/Latin. MacMillan Publishing Company, New York, New York.
- Traupman, J.C. 1981. The New College and English Dictionary. Bantam Books, New York, New York.

Thank you John for a very enlightening session!

Biological Criteria Symposium: Suzanne Marcy, Ph.D., Criteria and Standards Division, Environmental Protection Agency has invited SCAMIT to participate in a poster session during the EPA's sponsored Symposium on Biological Criteria: Research and Regulation December 12-13, 1990 in Arlington, Virginia (see attached announcement). There was a brief discussion defining the benefits of this opportunity for SCAMIT. The most obvious being recognition at the national level of the work SCAMIT has done in the area of taxonomic standardization, and more importantly, stressing the relevance of this work for the development of accurate criteria for environmental monitoring. Additionally, SCAMIT will be presented as a model for establishment of other regional taxonomic standardization organizations.

Tom Parker moved to fund the air and hotel expenses for one member of SCAMIT to present a poster during the poster session. Don Cadien seconded the motion which was then passed unanimously by the SCAMIT officers.

Larry Lovell was selected to represent SCAMIT at the symposium and will also undertake the organization of the poster and abstract.

Epitonium Meeting: Helen DuShane, L.A. County Museum has requested a species list of Epitonium for the October SCAMIT meeting. If you have any specimens to add to the list please contact Don Cadien at (213) 775-2351 ext. 401

SCAMIT Picnic: The SCAMIT picnic on Saturday August 18th was a great success. The food was outstanding and a good time was had by all. I would like to take this opportunity to thank Larry for the excellent job he did in organizing this year's picnic.

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

Officers

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Vice-President	Larry Lovell	(619) 945-1608
Secretary	Ross Duggan	(619) 226-8175
Treasurer	Ann Martin	(213) 648-5317



Ron



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JUL 18 1980

OFFICE OF WATER

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

Dear Dr. Parker:

I received your name from Jim Thomas of the Reef Foundation in Florida. He told me something about your work; it seems to support our efforts at EPA to develop biological criteria for estuarine and near coastal waters.

We are conducting a symposium on biological criteria in December of this year. I would like to consider your research in a possible platform or poster presentation in the symposium. Enclosed you will find a symposium announcement and a copy of the document, "Biological Criteria National Program Guidance for Surface Waters."

I hope to hear from you soon. You may call me at (202) 382-7144.

Sincerely,

Suzanne Marcy, Ph.D.  
Criteria and Standards Division (WH-585)

Enclosures

Wetlands

## BIOLOGICAL CRITERIA: RESEARCH AND REGULATION

### Symposium Announcement and Call for Papers

The U.S. EPA Office of Water is sponsoring a special symposium on the development of biological criteria for all surface water types. The symposium will be held December 12 and 13, 1990 at the Hyatt Regency Crystal City, 2799 Jefferson Davis Highway, Arlington, Virginia 22202. The Biological Criteria Symposium will immediately follow the U.S. EPA sponsored conference on "Water Quality Standards for the 21st Century" to be held at the same location on December 10-12.

The Symposium will be divided into five major topics including:

- Biological Criteria in Regulations
- Defining Habitat Variables
- Reference Site Selection
- Designing Biological Surveys
- Representing Biological Integrity and Evaluating Non-Attainment

Each session will include four papers. Speakers will be invited and will represent investigative expertise in streams and rivers, lakes and reservoirs, estuaries and near coastal waters, and wetlands. Following formal presentations, session speakers will engage in a panel discussion.

In addition to the invited speakers, we are soliciting high quality poster presentations from the general scientific community on evaluating biological integrity, and developing biological criteria for marine, estuarine, freshwater, and wetland habitats. Please submit titles and 200-400 word abstracts of papers to:

Dr. Suzanne K. Macy Marcy  
U.S. Environmental Protection Agency  
Office of Water Regulations and Standards (WH-585)  
401 M Street S.W.  
Washington, D. C. 20460  
202 FT5 382-7144

Abstracts must be postmarked by August 1, 1990.

Tentative Symposium Schedule  
Biological Criteria: Research and Regulation

Wednesday, December 12, 1990

1:00 - 1:15 p.m.	Opening Remarks
1:15 - 1:45 p.m.	Keynote Address
1:45 - 2:15 p.m.	CSD Biocriteria Program Overview, Dr. Suzanne K. Macy Marcy
2:15 - 2:30 p.m.	BREAK
2:30 - 3:45 p.m.	Biocriteria in Regulations -- EPA Headquarters View -- EPA Regional View -- State Agency View -- Panel Discussion
3:45 - 4:00 p.m.	Overview of Draft Technical Guidance, Request for Written Comments by End of Conference
4:00 - 5:30 p.m.	Dedicated Poster Session
5:30 p.m.	Adjourn

Thursday, December 13, 1990

8:00 - 9:30 a.m.	Habitat Variation -- Streams and Rivers -- Lakes and Reservoirs -- Estuaries and Near Coastal Areas -- Wetlands -- Panel Discussion
9:30 - 9:45 a.m.	BREAK
9:45 - 11:15 a.m.	Reference Sites -- Streams and Rivers -- Lakes and Reservoirs -- Estuaries and Near Coastal Areas -- Wetlands -- Panel Discussion

11:15 - 12:30 p.m.	LUNCH
12:30 - 2:00 p.m.	Designing Biological Surveys <ul style="list-style-type: none"><li>-- Streams and Rivers</li><li>-- Lakes and Reservoirs</li><li>-- Estuaries and Near Coastal Areas</li><li>-- Wetlands</li><li>-- Panel Discussion</li></ul>
2:00 - 2:15 p.m.	BREAK
2:15 - 3:45 p.m.	Representation of Biointegrity and Evaluation of Non-attainment of Uses <ul style="list-style-type: none"><li>-- Study Design</li><li>-- Statistics</li><li>-- Hypothesis Testing</li><li>-- Diagnosis</li></ul>
3:45 - 4:30 p.m.	Collection/Discussion of Comments on Draft Technical Guidance
4:30 - 5:00 p.m.	Summary and Closing Remarks







**Southern California Association of  
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September 1990

Vol. 9, No.5

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**NEXT MEETING:** Epitoniidae  
**GUEST SPEAKER:** Helen DuShane  
Los Angeles County Museum of Natural History  
**DATE:** Monday, October 15, 1990, 9:30 A.M.  
**LOCATION:** Los Angeles County Museum of Natural History  
Times Mirror Conference Room (ground floor)

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**MINUTES FROM MEETING ON September 10, 1990**

Scaleworm Meeting: Ross Duggan, City of San Diego hosted this month's meeting. The purpose of the meeting was to introduce a key to the most common non-aphroditid scaleworms collected between the depths of 20 - 100 meters by monitoring agencies in the Southern California Bight. In addition, four provisional species were discussed.

Unfortunately the scaleworm key and voucher sheets were not complete in time for this newsletter. However, they should be completed before the distribution of next month's newsletter.

Epitoniidae Meeting: For those of you planning to attend next month's meeting on Epitoniidae, remember to bring along your specimens for Helen DuShane to check.

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for formal taxonomic purposes.

ICZN Bulletin: Included in this newsletter is a synopsis of the recent meeting (July 4 - 5, 1990) of the International Commission of Zoological Nomenclature (ICZN). The results of this meeting will substantially affect future nomenclature guidelines. SCAMIT is interested in your thoughts on the new guidelines. Please send your comments to:

Ron Velarde  
City of San Diego  
Marine Biology Laboratory MS 45A  
4077 North Harbor Dr  
San Diego, CA 92101

Perhaps a SCAMIT meeting in the near future could include a discussion of the changes that will take place.

Biological Criteria Symposium: Larry Lovell, Ron Velarde, Don Cadien and Tom Parker are organizing the paper to accompany SCAMIT's poster at the Biological Criteria Symposium (SCAMIT Newsletter, 9:4). The abstract for the poster is included in this newsletter. If you have any suggestions or concerns please feel free to contact SCAMIT officers who will put you in touch with a committee member.

Spionidae Meeting Schedule Change: The November meeting on Spionidae has been re-scheduled for early next year. Ron Velarde will present a workshop on the Hesionidae for the November meeting.

Larry Lovell has requested species lists from SCAMIT members for the Spionidae meeting. If you have not already contacted Larry you may reach him at the following address.

Larry Lovell  
1036 Buena Vista Drive  
Vista, CA 92083

Telephone: (619) 945-1608

Nucalanidae Meeting: Paul Scott, Santa Barbara Museum of Natural History has requested species lists and specimens for the Nucalanidae meeting scheduled for Monday, March 11, 1990. The meeting will be held at the Santa Barbara Museum of Natural History. Please send all information and specimens to the following address.

Paul Scott  
Associate Curator of Invertebrate Zoology  
Santa Barbara Museum of Natural History  
2559 Puesta Del Sol Road  
Santa Barbara, CA 93105

New Phone Number at the Hancock Worm Lab: As of Saturday, October 13, 1990 the new phone number at the Allan Hancock Worm Lab will be (213) 740-5157.

L.A. County Museum Seminars: A schedule for the research seminars at the L. A. County Museum of Natural History has been included in this newsletter. The seminars take place in the Times Mirror conference room in the museum every Thursday at 3:00.

SCCWRP Keys to Invertebrates: SCAMIT is in possession of 50 to 100 copies of SCCWRP's Invertebrates of Southern California Coastal Waters: II. Nantania. If you are interested in obtaining one or more of these copies please contact Tom Parker at the LACSD (213) 775-2351 X401.

Retraction: There was a misleading statement on an informational bulletin distributed in the July SCAMIT Newsletter (9:3). The statement on the announcement itself implied that SCAMIT was providing the "Barnard Index" in a following newsletter. It was SCAMIT's intention only to provide the address from which you can obtain the index. SCAMIT apologizes for any inconvenience this may have caused.

Reminder: Just a reminder to mark your calendars for the two special events in December. The SCAMIT Christmas party will be held at the Cabrillo Marine Museum on Saturday evening December 8th, and the Barnard Amphipod workshop is scheduled for Monday and Tuesday December 10th and 11th. More information will be available in future newsletters.

Zoological and Natural History Literature: Larry Lovell has recently discovered that Donald Hahn, Natural History Books has a substantial collection of literature that is not listed in his catalog. Mr Hahn has suggested that if you are interested in purchasing some of this literature you can contact him at the address listed below. He will be attending a Booksellers convention in Glendale during April, and he will be happy to bring along the literature you are interested in.

Donald E. Hahn  
Natural History Books  
Box 1004  
Cottonwood, AZ 86326-1004

(602) 634-5016

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

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## MEETINGS OF THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

What will doubtless be recorded as the most momentous meeting in the history of the International Commission on Zoological Nomenclature (ICZN) took place July 4-5, 1990, at the International Congress of Systematic and Evolutionary Biology, held at the University of Maryland, USA. At these sessions the Commission developed a series of fundamental principles to be adopted for the preparation of the forthcoming 4th edition of the International Code of Zoological Nomenclature that will revolutionize both the theory and practice of zoological nomenclature. Significantly these principles were first enunciated as the result of an all-day session of the Commission held on America's celebration of the anniversary of the signing of its Declaration of Independence, July 4. Like the statements in that document, these historic changes in the code promise to free systematic biology from the tyranny of the past and provide sound and comprehensive guidance for the future.

Members of the ICZN in attendance at these meetings all contributed to a series exciting and productive exchanges of ideas that led to overwhelming support for the fundamental and revolutionary revisions in the code described below. They included: O. Kranus (FR Germany, President), H.G. Cogger (Australia, Vice-President), W.J. Böck (USA), J.D. Corliss (USA), D. Heppell (UK), P.T. Lehtinen (Finland), A. Minelli (Italy), C. Nielsen (Denmark), W.D.L. Ride (Australia), J.M. Savage (USA), R. Schuster (Australia), and F.C. Thompson (USA). Clearly the Commission undertook the new initiatives for code revision in response to the changing needs of the user community and the burgeoning requirements for stable biodiversity data bases. Their goal was to retain the most essential features of previous codes while designing a foundation for the nomenclature of the future.

Underlying all of the Commission actions were three primary principles. First, that as emphasized in the Preamble to the present Code (3rd ed.) the overriding purpose of the Code is "to promote

stability and universality." The Commission agreed that this goal is best achieved by adopting procedures that validate names in current use rather than through following strict priority. Second, as succinctly stated by both Linnaeus and Strickland (the promulgator of the first Code of Zoological Nomenclature) that the names given to organisms are simply symbols representing taxa that enhance communication about, and allow development of information bases regarding them. Consequently the Commission decided that matters relating to details of orthography, transliteration, strict adherence to the rules of Latin grammar, determinations of gender and spelling are secondary to establishing and maintaining a unique, distinctive and stable name for each valid taxon. Third, that the provisions of the Code must be simplified and designed to insure easy and automatic application of them by practicing systematists, with minimum need to petition the Commission for use of its Plenary Powers.

In the following paragraphs I will mention the most important proposals for change adopted during the Commission's deliberations, including a meeting open to all members of the zoological community on July 5. These matters will be presented below in what I perceive to be their order of significance not in the order in which they were considered. It should be noted that the Commission reaffirmed throughout these meetings that the Linnean classification system, its hierarchy of taxa and the binomial system of nomenclature are fundamental and irreducible bulwarks of the Code.

Without question the most significant and revolutionary changes adopted at these meetings were those that will severely constrain the strict application of priority by giving heaviest weight to the criterion of current usage as the determinant for establishing the validity of names. The first and interim step in this process will be the bringing together of materials in Articles 23c, 79 and 80 of the Code making it mandatory that senior synonyms that have not been used in the 50 years prior to the date of publication of their rediscovery are to be rejected and are not to be used to upset a long

accepted name. No application to the Commission will be necessary (contrary to the present Code) to maintain current usage.

Much more important than this improvement, in what might be called the statute of limitations for the resurrection of old names, are a sequence of decisions that the Commission believes will provide a stable and universal zoological nomenclature for the 21st century. The first of these involves the early establishment by the commission of a List of Available Generic Names in Zoology. The list would be developed substantially from Neave's Nomenclator Zoologicus and the Zoological Record with additions and corrections. At the time of publication (e.g. 1996) the dates in the list (regardless of any subsequent findings) would be the final determinants of priority. In addition and most importantly, only the generic names on this list would be available for use! Any other name, subsequently discovered or not, would not exist for nomenclatural purposes. Obviously new names proposed after 1996 would be available from their date of publication.

A second step in this process will be to ask the appropriate specialist committees (e.g. Nomenclature Committees of the International Congress of various taxonomic groups) to prepare lists of family-group, genus-group and species-group names in current usage. These might be based on up-dated versions of the lists of living mammals and amphibians prepared by the Association for Systematic Collections, for example. After appropriate consideration the Commission would certify such a list as an Official List of Names in Current Use (LNCU). Names not on this list would not be available and would not exist for nomenclatural purposes. Obviously new names proposed for taxa after the publication of the LNCU would become available from their date of publication. This procedure means that for a particular group there will be no necessity to search for any names published prior to the appearance of the LNCU thus completely freeing the systematist from the past. Essentially each LNCU will be a new (although mini-) Systema Naturae and will serve as the new starting point for nomenclature in that particular major group. In poorly known groups it may be sometime before LNCU's will be prepared. For these taxa

the revised Article 23c and the List of Available Generic Names in Zoology will provide maximum stability until LNCU's are available.

In another significant area the Commission recognized the inherent incongruity between the absence of knowledge of classical languages by most practicing systematists and the requirements of the Code. It was agreed that scientific names are only symbols for taxa in themselves carrying no special meaning and under the current Code may even be arbitrary combinations of letters. Consequently, while the Commission believes that names for taxa should continue to be based primarily on words of Latin and Greek derivation, the pertinent articles on name formation in the Code will be re-written without reference to the rules of Latin grammar. Specifically a simple and uniform method will be devised for forming family-group names for the future. The accepted spellings of older family-group names will be established by current usage not Latin grammar!

Two other specific issues in the area of grammar were considered. It was agreed that in the case of species-group patronyms that terminate in -li or -i, either spelling would be admissible regardless of the original spelling (e.g. petersli or petersi; boylli or boyli). Less clearly resolved was the matter of agreement in gender between generic and species-group names based on adjectives. The idea that generic names should be without gender received considerable support, however, there was no agreement on how to establish fixed spellings for the adjective-based species-group names. One alternative might be to make all generic names feminine for purposes of zoological nomenclature. Certainly it would be best if all members of a particular genus had the same adjectival terminations.

The area of what constitutes publication and the criteria of availability were revisited. Clearly with development of new methods of electronic publication and printing unintentional, accidental, personal or even mischievous proposals of new names for taxa are possible. The Commission favored the notion that to be published for purposes of zoological nomenclature a new name must appear in one of a substantial number of approved scientific journals

or in books from an extensive list of publishers that were registered with the ICZN. Logistics for such a plan are complex and need further investigation but the aim is to insure publication in the primary scientific literature as opposed to privately printed and/or unedited sources. In the area of availability it is proposed that in order to be available (after a certain date) a new name must be accompanied by an abstract and/or diagnosis purporting to distinguish it from other similar taxa in a language using Latin letters, preferably "a language of the Code." A language of the Code being any language so designated in the Code. Candidate languages are to be determined at a later date.

The Commission agreed that provisions should be added to the Code so that in cases where a type genus of a family-group name has been misidentified the first available name for the same taxon is to become the type genus and 2) similarly a misidentified type species of a genus-group name should be replaced by the first available name for the same taxon. Another change would require all future species-group descriptions to include a designation of a holotype, syntypes or hapantotype or in certain cases of ephemeral organisms, an illustration that may be composite (some special designation will be required for these). Such types must be deposited in a museum or similar institution. After a stated date no new species-group name would be available if it does not meet these requirements.

Although the Code does not treat names of order-, class- or phyla-groups the commission is often thought to have authority in this area. There seems to be some advantage to the community if the ICZN could provide a list of such names in current use, with some indication of preference in usage. Consequently the ICZN will undertake the preparation of a list of recommended names in these categories in zoology. Hopefully this will encourage universality of usage of order-, class- and phyla-group names as key words, in titles and in abstracts.

An editorial committee chaired by F. Christian Thompson is in the process of drafting these dramatic changes into definitive form for action at the meetings of the International Union of Biological Sciences at Amsterdam, the Netherlands, in September 1991. It is

important that systematists voice their support of these changes, which are based upon the Commission's response to the demands of both taxonomists and other members of the biodiversity community. Your comments may be directed to the Executive-Secretary, International Commission on Zoological Nomenclature, c/o Museum of Natural History, Cromwell Road, London SW 7 5BD, Great Britain. It is vital to the welfare and future of systematic biology that the progressive and exciting innovations in zoological nomenclature developed by the ICZN at Maryland become implemented. Your individual aid, through endorsement of the major principles described above, in bringing this great enterprise to fruition for the benefit of biologists and biology generally is an essential ingredient in adoption of a Code of Zoological Nomenclature that emphasizes stability based on current usage and is designed for the needs of systematists in the 21st century.

I will conclude by noting specific actions by the Commission, of particular interest to readers of this journal in the case of the three herpetological works on Australian and New Zealand taxa by Wells and Wellington (Case 2531). It was decided that each of the three titles would be considered individually. In addition before any further action is to be taken on these cases the Commission will seek the advice of the Nomenclature Committee of the World Congress of Herpetology for their opinion as to whether or not any or all of the three works in question pose a threat to the stability or universality of scientific nomenclature for the amphibians and reptiles of Australia and/or New Zealand. Of course until the Commission makes a final decision on this matter the nomenclature (existing usage) utilized prior to the Wells and Wellington publications should be followed. - JAY M. SAVAGE, Department of Biology, University of Miami, P.O. Box 249118, Coral Gables, Florida 33124.

# RESEARCH SEMINARS

in History and Earth and Life Sciences

# NATURAL HISTORY MUSEUM

of Los Angeles County

TIMES MIRROR CONFERENCE ROOM  
(ground floor)

PLEASE POST/CIRCULATE

900 Exposition Boulevard  
Los Angeles, California 90007

## FALL 1990 SCHEDULE

- 20 SEPTEMBER F. G. HOCHBERG - *Santa Barbara Museum of Natural History*  
**GESTALT OF PATTERN AND TEXTURE IN OCTOPUS SYSTEMATICS**
- 27 SEPTEMBER DAVID J. BOTTJER - *Earth Sciences, University of Southern California*  
**LIFE IN OXYGEN-DEFICIENT MARINE SETTINGS: MODERN AND ANCIENT**
- 4 OCTOBER NORMA L. GREENE - *Costume Society of America*  
**WOMEN AND THE AUTOMOBILE**
- 11 OCTOBER CAMM C. SWIFT - *Ichthyology Section, LACMNH*  
**THE DISAPPEARING FRESHWATER FISH FAUNA OF CALIFORNIA**
- 18 OCTOBER THEODORE J. CROVELLO - *California State University, Los Angeles*  
**KNOWLEDGE BASES IN SYSTEMATICS AND BIOGEOGRAPHY**
- 25 OCTOBER PETER C. KELLER - *Public Programs, LACMNH*  
**PETROGENESIS OF GEM SPECIES UNDER VARYING GEOLOGICAL REGIMES**
- 1 NOVEMBER JUDI V. R. ACHJADI - *Indonesian Embassy, Washington, D.C.*  
**INDONESIAN TEXTILES: THE FABRIC OF LIFE**
- 8 NOVEMBER JOSEPH R. JEHL, Jr. - *Hubbs Sea World Research Institute, San Diego*  
**ORNITHOLOGY OF MONO LAKE**
- 15 NOVEMBER ROBERT L. MCKERNAN - *University of California, Riverside*  
**PEERING INTO DARKNESS: STUDIES ON BIRD MIGRATION IN SOUTHERN CALIFORNIA**
- 29 NOVEMBER JOEL W. MARTIN - *Crustacea Section, LACMNH*  
**INVERTEBRATE ASSOCIATES OF A NEW SPECIES OF JELLYFISH FROM SOUTHERN CALIFORNIA**
- 6 DECEMBER JACK D. FARMER - *University of California, Los Angeles*  
**PALEOECOLOGY AND EVOLUTION OF THE LATE PROTEROZOIC BENTHOS**
- 13 DECEMBER ERROL W. STEVENS - *Historic Records Section, LACMNH*  
**FREDERIC HAMER MAUDE, PHOTOGRAPHER OF CALIFORNIA AND THE SOUTHWEST**

TIMES MIRROR CONFERENCE ROOM  
Seminar 3:00 Coffee/Refreshments 2:45  
--ALL INTERESTED PERSONS ARE INVITED TO ATTEND--



**BIOREMEDIATION COORDINATOR** - Due to NETAC's role as coordinator of the effort to evaluate technologies to remediate Alaskan beaches resulting from the EXXON Valdez oil spill, NETAC has become a recognized leader in the Bioremediation industry. As a result, NETAC has been designated by the U.S. Environmental Protection Agency as the focal point for the Bioremediation Industry.

Therefore, to increase staff capabilities, NETAC is seeking an individual to coordinate NETAC's technical efforts and to interact with the "EXPERTS" in the Bioremediation field. This individual must demonstrate a proven track record in the bioremediation industry and familiarity with a broad range of bioremediation technologies, laboratory treatability tests, testing protocols and environmental regulations. Minimum of M.S. degree in microbiology or related field preferred. Salary commensurate with experience.

The National Environmental Technology Applications Corporation (NETAC) through a unique cooperative agreement with the U.S. EPA, facilitates the commercialization of priority environmental technologies by providing technical, business development and marketing assistance to entrepreneurs, technology developers, suppliers and technology users from industry and government. NETAC is a dynamic, rapidly growing organization that seeks self-starters with demonstrated technical and communication skills. NETAC offers competitive salaries and benefits.

Please send your resume and salary requirements in confidence to:

NATIONAL Environmental Technology Applications Corporation  
Director of Administration  
University of Pittsburgh Applied Research Center  
615 William Pitt Way  
Pittsburgh, Pa. 15238



**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
San Pedro, California 90731

October 1990

Vol. 9, No.6

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**NEXT MEETING:** Hesionidae

**GUEST SPEAKER:** Ron Velarde  
City of San Diego

**DATE:** Monday, November 19, 1990, 9:30 A.M.

**LOCATION:** Allan Hancock Foundation, Room 30  
University of Southern California  
Los Angeles, CA

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MINUTES FROM MEETING ON October 15, 1990

Epitoniidae Workshop: Helen DuShane, Los Angeles County Museum of Natural History conducted the Epitoniidae workshop for the October SCAMIT meeting. The Epitoniidae have a worldwide distribution with over 3000 recognized species. Of these there are 27 species that inhabit the eastern Pacific between Alaska and Cedros Island. Most of the species of epitoniids occur in the temperate and tropical latitudes within the first 40 meters, however some have been recorded at depths down to 350 meters. The two genera discussed at the meeting were Nitidiscala and Asperiscala. These two genera differ from each other in that Asperiscala has spiral ribs between the costae and Nitidiscala lacks spiral ribs between the costae.

Nitidiscala tincta (Carpenter, 1865) is the most common local species of Epitoniidae and is generally found only within the intertidal zone. However, N. tincta may also occur in deeper waters. Most of the epitoniids recorded are found to be associated with anemones. Helen is very interested in any observations concerning this association.

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

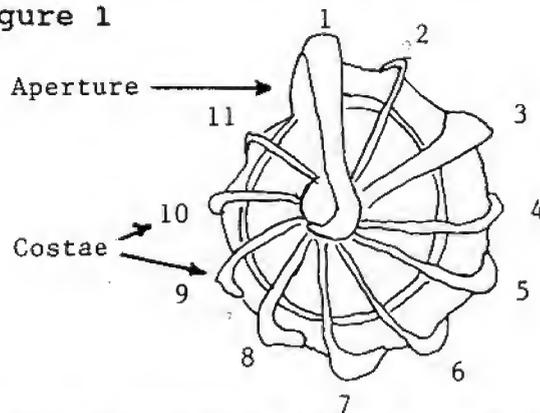
SCAMIT newsletter is not deemed to be a valid publication  
for formal taxonomic purposes.

There are four other species of Nitidiscala that occur in the offshore waters of the southern California bight; N. californica (Dall, 1917), N. hindsii (Carpenter, 1864), N. sawinae (Dall, 1903), N. indianorum (Carpenter, 1865). These species are very difficult to differentiate from each other. The participants at the epitoniid workshop concluded that identification of these five species should be limited to Nitidiscala spp. due to the fact that the only specimens commonly encountered by most SCAMIT members are small, and even distinguishing mature specimens can be a confusing task.

There are two species within the genus Asperiscala that occur with relative frequency within the southern California bight; A. lowei (Dall, 1906) and A. bellastrata (Carpenter, 1864). These two species can be differentiated by the number of costae per whorl and degree of spiral sculpturing between the costae. Asperiscala lowei has 25 - 32 costae per whorl and many fine spiral ribs between the costae. Asperiscala bellastrata has only 15 - 17 costae per whorl and has fewer spiral ribs between the costae than A. lowei. The number of costae is most reliable trait in the larger specimens. When identifying smaller specimens you should rely upon the degree of spiral sculpturing also.

To facilitate an accurate count of the costae per whorl the following procedure was suggested. Hold the shell so that the base of the columella faces you (fig. 1) (holding between the thumb and forefinger seems to work well even for small specimens). Begin counting starting with the aperture and ending with the first costa that is situated at a right angle to the aperture

Figure 1



If you are interested in more information on the epitoniids refer to the following reference: DuShane, H., 1979. The Family Epitoniidae (Mollusca:Gastropoda) in the northeastern Pacific. Veliger 22(2):91-134

Biological Criteria Meeting: The abstract for the poster to be displayed at the Biological Criteria meeting during December was not included in the previous edition of the SCAMIT newsletter as was mentioned. It is included in this newsletter.

New SCAMITEER: Alexander Patrick Duggan was born on October 10th, 1990 at 5:28pm. Alex weighed in at 8 lbs 15 oz. Congratulations to the new parents, Ross and Carolyn Duggan.

November SCAMIT Meeting: Just a reminder that the Spionidae workshop originally scheduled for the November meeting has been rescheduled for February. Larry Lovell is patiently waiting for your species lists of spionids.

Ron Velarde, City of San Diego will present a workshop on the Hesionids for the November SCAMIT meeting at the Allan Hancock Foundation worm lab. Remember to bring your hesionids to the workshop.

Taxonomic Sufficiency: A new report discussing the level of taxonomic sufficiency necessary to assess environmental impact has been published and may peak your interest. Taxonomic Level Sufficient for Assessing Pollution Impacts on the Southern California Bight Macrobenthos by Steven P. Ferraro and Faith A. Cole of the Pacific Ecosystems branch, Environmental Research and Development Laboratory, Narrangansett. The document was published by the Office of Research and Development, Environmental Protection Agency, Department of the Interior, Newport, Oregon 97365.

SCAMIT Christmas Party: The SCAMIT Christmas party is scheduled for Saturday evening, December 8th from 6:00 pm to 9:00 pm at the Cabrillo Marine Museum. The party is potluck style. SCAMIT will provide the entree, drinks and plates/utensils. J.L. Barnard (Santa Claus) and James Thomas will attend this year's Christmas party. If you have any questions about the party, or if you would like to help you may contact Larry Lovell at (619) 945-1608.

Barnard Amphipod Workshop: Just a reminder that the Barnard Amphipod workshop will be held at the L.A.C.M.N.H. in the Times Mirror room at 9:30 am on Monday and Tuesday December 10th and 11th. Dr. James Thomas will conduct the workshop with Dr Barnard. Ron Velarde and Doug Diener will also present a workshop on Orchomene and Hippomedon.

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

SCAMIT Officers:

President	Ron Velarde	(619) 226-0164
Vice-President	Larry Lovell	(619) 945-1608
Secretary	Ross Duggan	(619) 226-8175
Treasurer	Ann Martin	(213) 648-5317



**Regional Standardization of Taxonomy:  
The Southern California Association of Marine  
Invertebrate Taxonomists  
(SCAMIT)**

Lawrence L. Lovell, Taxonomic Consultant, 1036 Buena Vista Drive  
Vista, California 92083. SCAMIT Vice-President

and

Ronald G. Velarde, City of San Diego, Marine Biology Laboratory,  
MS 45A, 4077 North Harbor Drive, San Diego, California 92101.  
SCAMIT President

**Abstract**

The Clean Water Act requires the implementation of aquatic habitat monitoring, and numerous surveys have been conducted to characterize those biological communities. A fundamental component of these surveys is taxonomic data which lists the taxa and their abundance. There are typically several surveys conducted by both public and private organizations within a given geographic region. A problem in realizing the full potential of these data is the lack of taxonomic consistency among surveys. The Southern California Association of Marine Invertebrate Taxonomists (SCAMIT) was formed in 1982 to provide regional standardization among benthic marine surveys in the southern California bight. SCAMIT schedules a yearly agenda of taxonomic topics, including regular exchange of specimens that have been noted as inconsistently identified or are new to science. National and regional taxonomic experts lead workshops presenting innovative identification techniques, new taxonomic keys, and review of voucher collections. A central voucher collection is maintained consisting of specimens exchanged and reviewed at meetings. The results of these meetings and workshops are distributed in a monthly newsletter. Several aspects of biological criteria development can benefit from regional standardization of taxonomy. The biological survey design should include a component for regular calibration of taxonomic data. Selection and assessment of regional reference sites should utilize regionally standardized data. Selection of aquatic community components for detailed analysis, whether for statistical manipulation or toxicity testing, should be supported by the survey's taxonomic data. Biological indices, commonly used as regulatory tools to manage complex environmental impact issues, are dependent upon the quality and comparability of the underlying taxonomic data. SCAMIT's activities have greatly enhanced taxonomic quality control and standardization among benthic marine data bases in southern California. Implementation of taxonomic standardization in other regions should serve to improve national biological criteria for surface waters programs.

NATURAL HISTORY MUSEUM  
of Los Angeles County

900 Exposition Boulevard  
Los Angeles, California 90007

JOB ANNOUNCEMENT

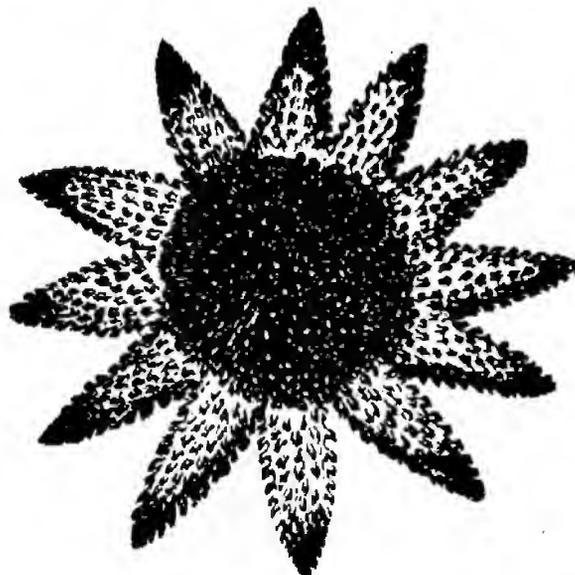
Echinoderms Collection Position

The Invertebrate Zoology Section at the Natural History Museum of Los Angeles County invites applications for a new position: COLLECTION MANAGER or CURATORIAL ASSISTANT, funded by the National Science Foundation. It will be filled in the winter of 1990, and is open immediately.

Appointment will be made at the appropriate level, depending on the experience of the selected applicant. Minimum qualifications are a BS or BA in biology, paleontology or museum science, with coursework in invertebrate zoology, or equivalent experience.

This full-time position is for 18 months, with the possibility of permanent appointment. Maximum starting salary is \$28,200/year plus benefits. Duties include reorganization, recuration, and inventory of a major systematic resource, the largest collection of Recent echinoderms on the West Coast.

Applicants should submit a curriculum vitae plus three letters of recommendation to Dr. Gordon Hendler, Natural History Museum, 900 Exposition Boulevard, Los Angeles, CA 90007. For questions regarding this position please telephone (213) 744-6391, (213) 744-3367, or FAX (213) 746-2999. LACMNH is an Equal Opportunity Employer.



#### LACM AWARDED NSF GRANT FOR ECHINODERM COLLECTION UPGRADE

Dr. Gordon Hendler, Invertebrate Zoology Section Head at the Los Angeles County Museum of Natural History announced an award made to the Echinoderm Collection in September. The National Science Foundation, Biological Resources Research Program, has provided \$209, 950 for the improvement of the Museum's echinoderm collection.

During the last decade the collection has grown rapidly, chiefly through the incorporation of the Allan Hancock Foundation Collection and other "orphaned" collections. LACM now houses the largest echinoderm collection in the western United States and the third largest in the country; its holdings are cosmopolitan, with unexcelled coverage of the eastern Pacific and Caribbean faunas. NSF support will be used to purchase much needed supplies and equipment, and to hire technical personnel for the collection upgrade. Some grant funds will also be used to support visits to the Museum by specialists from other institutions, who will assist in working up portions of the collection.

As principal investigator, Hendler will implement an 18 month program designed to re-organize and transfer the specimens to environmentally controlled areas within the museum. New compactor carriages will be installed in space designed for alcohol preserved material, and new steel museum cabinets will be housed in a separate room dedicated to dry collection storage. Wet material will be transferred from inadequate glassware to new bottles, re-alcoholled, and shelved on compactors. Dry specimens in substandard containers will be transferred to plastic boxes, and part of the dry collection will be housed in new cases. A collection manager, to be appointed, will coordinate the collection transfer and reorganization, and prepare a collection inventory which will be used as the basis for anticipated future computerized cataloguing of the echinoderm holdings.



Southern California Association of  
Marine Invertebrate Taxonomists

3720 Stephen White Drive  
San Pedro, California 90731

November 1990

Vol. 9, No.7

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**NEXT MEETING:** Barnard Amphipod Workshop

**GUEST SPEAKERS:** J.L. Barnard, Smithsonian Institution  
James D. Thomas, Reef Foundation  
Additional speakers listed below.

**DATE:** Monday and Tuesday, December 10 & 11, 1990,  
9:30 A.M.

**LOCATION:** Los Angeles County Museum of Natural History  
Times Mirror Conference Room (ground floor)

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MINUTES FROM MEETING ON November 19, 1990

Hesionidae: Ron Velarde, City of San Diego hosted this month's meeting. Ron presented a key to the Hesionidae for southern California. Ron is also developing voucher sheets for Podarkeopsis sp. A and Microphthalmus sp. A. Both the key to the Hesionidae and the voucher sheets will be distributed in the next edition of the newsletter.

Scaleworm Key: The scaleworm key presented at the September SCAMIT meeting has been completed and is included in this newsletter. In addition to the pictorial and verbal keys, there are voucher sheets for each provisional species listed in the key.

Another polynoid species has been added to the key since the September meeting. Two specimens of Arcteobia cf. anticostiensis were recently collected from Point Loma in 150 ft of water. If you are not careful you could mistakenly call these animals Harmothoe sp. B. The neurosetae are bifid and reminiscent of Harmothoe sp. B, however, there are two types of notosetae; capillary and stout.

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

SCAMIT newsletter is not deemed to be a valid publication  
for formal taxonomic purposes.

The pictorial key to the scaleworms was created using the Macintosh program Superpaint. New species may be added to the key easily to make a customized key for your specific monitoring program. Anyone interested in having a copy of the computer file for the scaleworm pictorial key may send a micro floppy disk to Ross Duggan at the following address:

Ross Duggan  
Point Loma Marine Biology Laboratory  
Ocean Monitoring Program  
4077 North Harbor Drive MS 45A  
San Diego, CA 92101

SCAMIT Christmas Party: The SCAMIT Christmas party is scheduled for Saturday evening, December 8th from 6:00 pm to 9:00 pm at the Cabrillo Marine Museum. The party is potluck style. SCAMIT will provide the entree, drinks and plates/utensils. J.L. Barnard (Santa Claus) and James Thomas will attend this year's Christmas party. If you have any questions about the party, or if you would like to help, you may contact Larry Lovell at (619) 945-1608.

Barnard Amphipod Workshop: In addition to J.L. Barnard and James Thomas there will be three additional presentations. Ron Velarde, City of San Diego will discuss Orchomene and Doug Diener, Marine Ecological Consultants Inc. will discuss Hippomedon. On Monday, December 10th Jodie Martin, L.A. Co. Mus. of Natural History, will present a talk including a film on the symbionts occurring on the giant jellyfish that appeared in the southern California waters this past summer.

Spionidae Meeting: Larry Lovell has requested species lists for the Spionidae (non-Polydorid) meeting scheduled for February. Please send your species lists to Larry at the following address.

Larry Lovell  
1036 Buena Vista Drive  
Vista, CA 92083

Telephone: (619) 945-1608

National Institute for the Environment: A proposal for the establishment of a National Institute for the Environment was received by SCAMIT and is included in the newsletter.

Zoological and Natural History Literature: If you want any literature from Donald Hahn, Natural History Books, please send him your new wish list. He is destroying the old wish lists and will be loading the new lists on a computer. He will be attending a Booksellers convention in Glendale April 27-28, 1990. His address and phone number are:

Natural History Books  
Box 1004  
Cottonwood, AZ 86326-1004  
(602) 634-5016

New Literature:

Fautin, D.G., A. Bucklin and C. Hand. 1989. Systematics of sea anemones belonging to genus Metridium (Coelenterata: Actiniaria) with a description of M. giganteum new species. The Wasmann Journal of Biology 47(1-2):77-85.

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**"It is time for the U.S. to treat the environmental health of the nation and the planet with the same seriousness it devotes to the health of its citizens."**

**National  
Institutes for the  
Environment**

*Global deforestation. Mass extinction. Global climate change. Ozone depletion. Acid rain. Pollution and toxic wastes. Rapid human population growth and dwindling natural resources. We face a world in which accelerating social change and global deterioration threaten our security and very survival, especially that of our children. These changes present us with historic opportunities and challenges. Solutions to many environmental problems still lie within reach. But we cannot delay. The problems we face will grow unimaginably more difficult and costly to fix with time.*

*In the 1940's the United States created the National Institutes of Health to attack serious health problems like cancer and polio. NIH sponsored the pioneering research that led to many of the medical advances that we enjoy today.*

*It is time for the U.S. to treat the environmental health of the nation and the planet with the same seriousness it devotes to the health of its citizens. It is time to create the National Institutes for the Environment (NIE). The NIH was created from the peace dividend at the end of World War II. The NIE can be created from the peace dividend at the end of the Cold War.*

*The NIE is an idea whose time has come. A broad national consensus is emerging that more effective action on the environment is needed. We do not own the Earth; we are trustees. If we do not manage the Earth wisely, our children will hold us accountable for its destruction.*



**Tropical deforestation in Brazil to create pasture for cattle ranching.  
Photo: S. P. Hubbell.**



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National Institutes for the Environment  
A Proposal

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# The Proposed National Institutes for the Environment

## The Unique NIE Mission –

*The NIE would create a new forum for environmental scientists, managers, and policy makers in the U.S. Although the NIE would increase funding for environmental research targeted on critical problems, it would not replace existing research efforts; it would complement and strengthen them. There are many established environmental research efforts currently under way among government agencies. The critical missing link in this research has been communication and coordination among diverse scientific disciplines and particularly among scientists, environmental managers, and policy makers. The NIE would supply this missing link.*

The main functions of the NIE would be to 1) sponsor environmental research via grants to universities and other qualifying research organizations; 2) increase the U.S. production of environmental scientists; 3) develop a global environmental data base and national environmental library; and 4) promote public environmental education.

Environmental research would be sponsored through competitively awarded, panel-reviewed grants to individual investigators as well as to multidisciplinary investigatory teams. The NIE would sponsor fundamental and applied research among the natural, engineering, and policy sciences. Research would focus on complex issues such as global climate change, sustainable resource use, inventory of biotic resources, habitat destruction, species extinction, and the degradation of the human environment.

## *Creation of NIE Institutes*

A major focus of the NIE would be to satisfy the critical need for more research and better coordination and communication among scientific researchers, environmental managers, and policy-makers. To do this the NIE would establish a number of research institutes focused on major environmental problem areas, and whose research would be targeted and coordinated through the administrative umbrella of a guiding committee that would set research targets and policy for all institutes.

## *Effects of Establishing the NIE*

Through these research institutes, guided by a scientific oversight committee, the NIE would forge a new way for all stakeholders in the environment—academic and government research organizations, environmental groups, industry, and policy analysts—to work together and serve

society's environmental needs. One mechanism could be regular hearings and periodic formal reviews of institute research programs. Input from all stakeholders in the environment would be invited. This new partnership would lead to:

## *Improved Environmental Research and Policy Decision-Making*

The NIE would promote research among government agencies, academic institutions and industrial scientists, collaborations that currently are difficult to form under our present system of environmental research. Such collaborations would work on common high-priority projects and strengthen the partnership among scientists, managers, and policy makers.

Establishing the NIE would also improve the process of identifying and ranking problems to set a national environmental agenda. The NIE would help set uniform standards and national strategies for environmental action.

## *Accelerated Progress Toward Solving Environmental Problems*

The NIE would foster mission-oriented research based on its agenda of critical environmental problems. It would help determine which problems could be remedied or mitigated, and assess research progress toward solutions. It would monitor the success of practical applications in order to guide future research directions.

Finally, it would provide graduate fellowships to train the next generation of environmental scientists.

# The Need for the National Institutes for the Environment

Almost everyone today acknowledges that the environment is in trouble. Recent polls show that the environment and the economy are the top two concerns of Americans.<sup>1</sup> But there is disagreement about the extent and even the nature of the problems.

We still suffer from a profound ignorance about the true state of the environment and the best ways to solve our environmental problems. This lack of understanding has hindered the nation's ability to develop and implement policy for sound environmental management and protection.

Our government cannot enact sensible and enforceable regulations unless the scientific issues are understood, the technological expertise exists, and an informed public creates the political will. The result of poorly conceived regulations based on limited or faulty data and a lack of an informed consensus is a tidal wave of environmental litigation that can cost the nation billions in wasted dollars.

Unfortunately, the nation is ill equipped to meet this environmental challenge. Few Americans are aware of the acute and growing national shortage of qualified environmental scientists. The capacity of colleges and universities to train environmental scientists is disappearing nationwide, largely because funding for programs of environmental research and training is inadequate, unstable, and fragmented. We are unprepared to manage and protect the environment because there is no one to do the work.

The U.S. needs better ways to assign priorities to environmental problems and to seek their solution. We need the National Institutes for the Environment to set the priorities, train the necessary scientists to provide the critical data, and sponsor mission-oriented research that will address the priority problems. The results of this research then need to be communicated efficiently to policy-makers and the public.

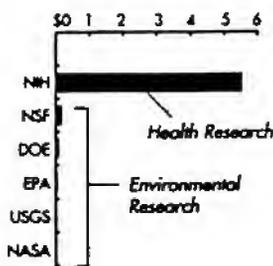
The NIE would establish a highly credible

applied environmental science agency. No present federal agency effectively sets national priorities for research and graduate training in the environmental sciences. The NIE would seek scientific understanding of the environment without bias or preconceived notions, through competitively awarded grants. The NIE would recognize the true multidisciplinary character of environmental problems, and support the natural, social, and engineering sciences. In contrast, much current environmental research is in-house and non-competitively awarded. Too often the research is an ad-hoc reaction to a crisis rather than a carefully planned program to understand the fundamentals of the environmental problem. As a result, environmental research today is of uneven quality and is often conducted by government and the private sector to defend or attack existing or proposed regulations.

We need an agency that will quickly inform policy-makers and the public about new scientific discoveries and technological breakthroughs. The NIE will not be a regulatory agency, but will explore the policy implications of its research programs. A key feature of the NIE will be reevaluating its research progress for policy-makers and the public in a timely fashion. NIE research will speed up and improve environmental legislation, rather than be an excuse for inaction.

Finally, we need the NIE because we lack a single, coordinated source for environmental data and information. Monitoring data of vital environmental importance is reported piecemeal, or is restricted or simply unavailable. Development of a successful national and global environmental effort depends critically on having accessible and accurate information. The NIE would create a National Library for the environment, open and accessible to all, and would create and maintain a program on environmental statistics and risk assessment.

Research on Health vs. the Environment (\$ Billions)



The United States currently spends billions on health and environmental research, but most of this money is directed at improving human health. In fact, the U.S. spends about 2200% more on health research than on research to cure all environmental problems combined. This imbalance cannot continue. The graph lists total FY 1991 projected expenditures for investigator initiated research grants by each agency.

<sup>1</sup> New York Times, January 25, 1990, page B9.

# The Proposed Organization of the NIE

To stimulate national discussion of the NIE concept, we propose the following organization for the agency. The NIE would house 5 problem-oriented Institutes to fund extramural research and 4 Intramural Centers to provide information and management support for the Institutes.

## *Institute of Biotic Resources*

The Institute of Biotic Resources would support research to inventory the biological diversity of the U.S. and the world and to explore its practical values for humanity. It would support taxonomic research and biogeographic surveys. Research topics would include the causes of extinction, methods of conserving germplasm and the maintenance of captive populations in zoos and arboreta. It would support research to discover and develop unutilized sources of useful natural products such as new medicines and pesticides

and new sources for food, fodder, fiber, firewood, timber and other products. It would also sponsor research on the economic valuation of biodiversity.

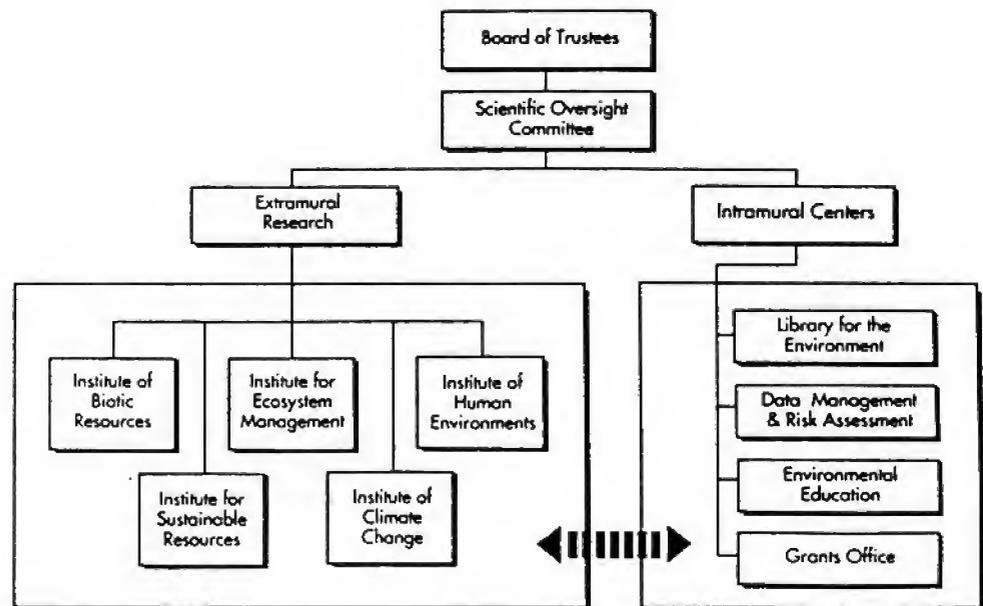
## *Institute for Ecosystem Management*

The Institute for Ecosystem Management would sponsor research on the interactions of organisms with each other and with their physical environment. Research topics would include ecosystem function in natural, stressed, and managed systems, responses of plant and animal species to environmental change and the causes and consequences of habitat destruction.

## *Institute for Sustainable Resources*

The Institute for Sustainable Resources would sponsor research on the sustainable exploitation of energy, land, soil, water, mineral and biotic (e.g. forest) resources. Research topics would include

Reporting to the Board of Trustees would be a Scientific Oversight Committee made up of eminent scientists selected on a rotating-term basis from each of the Institutes and from other federal agencies engaged in environmental research and management. At-large members from the public, industry, nongovernmental environmental organizations, and academic institutions would also be represented. The Committee would establish overall research policy and conduct or commission studies of environmental problems for possible adoption as targeted research areas.



sustainable agriculture and forestry, environmental engineering, restoration ecology, and energy and renewable resource engineering and policy.

#### ***Institute of Human Environments***

The Institute of Human Environments would sponsor research on the interactions of human societies with their environment. Research topics would include pollution, waste disposal, the economics of environmental degradation and restoration, population growth in relation to

resources, conflict resolution over resources and environment, and cultural survival.

#### ***Institute of Climate Change***

The Institute of Climate Change would support research addressing the effects of climate change on biotic systems, economic development and policy issues. It would monitor biotic responses to climate change and conduct research to anticipate the effects of climate change on ecosystems, food and agriculture.



*Ecologist studying the pollination system of a rare tropical tree.*

Photo: S. P. Hubbell.

## ***The Intramural Centers***

We envision a series of intramural centers in the NIE that would meet needs shared by all of the NIE institutes. We propose the following 4 centers:

- ***Center for Environmental Data Management, Risk Assessment, and Statistics*** would fill the critical need for a national database on the environment. It would maintain environmental monitoring records and support methods to catalog and inventory changing patterns of environmental use. It would also analyze trends and assess the hazards of environmental change. It would conduct economic and policy analyses for all the institutes and assist in the process of assigning research priorities.
- ***The National Library for the Environment*** would provide a center for information on the environment. It would provide information services to all NIE institutes as well as other agencies, nongovernmental institutions and the general public.
- ***Center for Environmental Education*** would support programs on environmental education to improve public and policy-maker understanding of environmental issues and options for environmental management.
- ***Office of Fellowships and Grants*** The Office of Fellowships and Grants would administer fellowships and sponsored research programs for all the institutes.

# The Cost of the NIE

## Estimated Annual NIE Budget in 5 Years (\$ Millions)

Item	Cost
Extramural Research Grants	\$400
Graduate Fellowships and Grants	\$50
Intramural Programs and Centers	\$50
Total	\$500

*In comparison to military spending, the proposed annual NIE costs are modest. One to five years of full NIE support could be provided for the cost of a single Stealth bomber (\$500 million each). The possibility of an environmental catastrophe currently poses a much greater long-term threat to U.S. security and health than war. The U.S. must redirect its financial resources to the intensifying problems of the environment.*

Cost estimates for the NIE are presently being prepared, but ball-park figures can be given. It is estimated that about \$100 million per year would be required as a minimum starting budget for research (\$50 million), graduate training (\$30 million), and intramural centers and administration (\$20 million). What would this \$100 million buy?

### **Fundamental and Targeted Research**

A single-investigator award costs between \$100,000 to \$200,000 per year, including overhead. A multidisciplinary environmental project involving 10 senior scientists costs \$2.5 million per year. Thus \$50 million would buy between 250-500 individual-investigator grants, or 10-25 teams of scientists working on multidisciplinary projects, or some combination of individual investigators and research teams. If we assume that there are 10 broad fields of environmental research supported by the NIE, then we can fund at most 25-50 grants per field per year, depending upon the mix of awards to individual scientists and interdisciplinary teams.

### **Training More Environmental Scientists**

Today the cost of training one environmental post-graduate scientist through the Ph.D. degree is between \$12,000-\$25,000 per year (tuition plus stipend, excluding research costs), or a total of \$48,000-\$125,000 per Ph.D. Assuming a 4-5 year degree program, a funding level of \$30 million per year would produce 240-600 new Ph.D.'s per year, with a standing number of about 1200 students in the pipeline. Assuming there are 10 broad fields of environmental research supported by the NIE, then we can produce at most about 24-60 new Ph.D.'s per field per year.

### **Intramural Centers and Administrative Costs**

Central to the function of the NIE are the intramural centers, including the library for the

environment, the environmental data center, and the education center. These centers and administrative offices should be located in the Washington, DC area. The startup cost of these operations is about \$20 million per year, exclusive of new construction and equipment costs.

### **Projected Costs of the NIE in 5 Years**

The figures above are ball-park minimal startup costs. They fall short of the funds that the NIE will need to train the numbers of environmental scientists that will be required to monitor the environment and solve environmental problems. The NIE will also need funding to support the research of these newly trained scientists in the coming decade. We estimate that the budget of the NIE will grow to about \$500 million per year within 5 years (table at left).

### **Where Will the Money Come From?**

If the U.S. hopes to deal effectively with environmental problems, new federal money must be allocated to solving them. The estimated costs of the NIE (\$100-\$500 million) are very modest by health research (\$5.5 billion) or military (\$200 + billion) standards.

One source of new money comes from the present collapse of the Cold War. This presents the U.S. with an historic opportunity to redirect funds towards solving serious environmental problems. What better time is the nation likely to have than now to create the NIE?

The NIE could also be chartered as part-public and part-private institution, creating opportunities for nongovernmental endowment support, as has been done with the Smithsonian Institution. This approach would help to foment the partnership among industry, government, and academic institutions on research to solve environmental problems.

**We, the undersigned individuals and organizations, call for serious study of the NIE concept by Congress and the National Academy of Sciences.**

Dr. Stephen P. Hubbell, Co-Chairman  
NIE Committee, Princeton University

Dr. Henry F. Howe, Co-Chairman  
NIE Committee, University of Illinois

Dr. Dean Abrahamson, Humphrey Inst.  
for Public Affairs, Univ. of Minnesota

Dr. A. Karam Ahmed, Environ Corp.  
American Institute of Biological Sciences  
Audubon Society

Dr. Kamal Bawa, Chairman, Biology  
University of Massachusetts

Dr. Fakhr Bazzaz, Biology, Harvard Univ.

Dr. Barbara Bentley, Biology  
SUNY at Stony Brook

Dr. Brent Berlin, Anthropology  
University of California Berkeley

Sen. Bill Bradley, NJ

Dr. James H. Brown, Univ. of New Mexico

Lester R. Brown, Director  
Worldwatch Institute

Dr. Clayton Callis, American Chemical Society

Dr. Michael Clegg, Botany  
University of California Riverside  
Conservation International

Dr. Walter H. Corson, Director  
Global Tomorrow Coalition

Dr. Vincent Covello, Public Health  
Columbia University

Dr. John C. Crowley, Vice President  
Association of American Universities

Dr. Hugh Dingle, Entomology  
University of California Davis

Dr. Paul Ehrlich, Director, Center for  
Conservation Biology, Stanford Univ.

Mohamed T. El-Ashry, Vice President  
World Resources Institute  
Environmental Defense Fund

Dr. Stanley Faeth, Zoology  
Arizona State University

Dr. J. Farnsworth, Pharmacy  
University of Illinois

Dr. Chris Field, Carnegie Inst., Stanford

Dr. Jerry Franklin, Forestry, Univ. of Washington

Dr. Paul Friesma, Political Science  
Northwestern University

Dr. David Glenn-Lewin, Chairman, Botany  
Iowa State University

Dr. K. Elaine Hoagland, Executive Director  
Association for Systematics Collections

Dr. Richard Holmes, Biology  
Dartmouth College

Dr. Robert Holt, Natural History Museum  
University of Kansas

Dr. Malcolm Gillis, Vice Chancellor  
Duke University

Dr. Bernard Goldstein, Dir., Environ. and  
Occu. Health Sciences Inst., Rutgers Univ.

Dr. George Gorman, Center for  
Conservation Biology, Stanford University  
Greenpeace

Dr. Stephen J. Gould, President, Society  
for the Study of Evolution, Harvard Univ.  
Edward Groth III  
Consumers Union, Vernon, NY

Dr. Jonathan Haas, Vice Pres. for Research  
Field Museum, Chicago

Dr. John Hart, Univ. of Calif. Berkeley

Joseph H. Highland, Pres., Environ Corp.

Dr. Theodore Hullar, Chancellor  
University of California Davis

Dr. Hugh Illis, Director, Herbarium  
University of Wisconsin

Sen. Frank Lautenberg, NJ

Dr. Paul L. Leuth, Provost, Rutgers Univ.

Dr. Simon Levin, Ecology and Systematics  
Cornell University

Dr. Daniel Janzen, Univ. of Pennsylvania

Dr. Leslie K. Johnson, Ecology and  
Evolutionary Biology, Princeton Univ.

Dr. William Jordan, Pres., Society for  
Restoration Ecology, Univ. of Wisconsin

William J. Kienlefer  
National Wildlife Federation

Dr. Dana and Milton Lieberman, Biology  
University of North Dakota

Dr. Eugene Likens, Dir., Inst. of Ecosystem  
Studies, NY Botanical Garden

Dr. Orrie Loucks, Biology, Miami Univ.

Dr. Thomas Lovejoy, President  
Society for Conservation Biology

Dr. Jane Lubchenco, Chairman, Biology  
Oregon State University

Dr. John Magnuson, Center for Limnology  
University of Wisconsin

Dr. Robert J. Mason, Geography and  
Urban Studies, Temple University

Dr. John Matson, Director, Office of  
Operations Tech., Johnson & Johnson

Michael McCloskey, Chmn., Sierra Club

Dr. J. Kenneth Mitchell, Chairman  
Geography, Rutgers University

Dr. Thomas Mitchell-Olds  
University of Montana

Dr. J. Peterson Myers, Director  
W. Alton Jones Foundation

Dr. Russell Mittermeier, President  
Conservation International

Dr. Gary Nabhan  
Desert Botanical Garden, Phoenix

Natural Resources Defense Council, NY

National Association of State Universities  
and Land Grant Colleges

Dr. Gordon Orans, Director, Institute for  
Environmental Studies, Univ. of Washington

Dr. Theodore Panayotou, Institute for Int'l  
Development, Harvard University

Glenn Paulson, Center for Hazardous  
Waste Management, Inst. of Tech., Chicago

Dr. Robert Percy, Botany  
University of California Davis

Dr. Stuart Pimm, Zoology  
University of Tennessee

Dr. William Platt, Louisiana State Univ.

Rafe Pomerance, World Resources Inst.

Dr. Ghilleen Prance, Director  
The Royal Botanical Gardens, Kew, UK

Dr. George Rabh, Director  
Brookfield Zoo, Chicago

Dr. Robert Repetti, World Resources Inst.

William J. Roberts, Environ. Defense Fund

Dr. Richard Rockwell  
Social Science Research Council

Rep. Robert A. Roe, NJ

Dr. Daniel Rubenstein, Ecology and  
Evolutionary Biology, Princeton University

William D. Ruckelshaus, Chairman  
Browning-Ferris Industries, Houston

Dr. Peter Saie, Chairman, Biology  
University of New Hampshire

Rep. H. James Saxon, NJ

Rep. James H. Schriener, NY

Rep. Claudine Schneider, RI

Dr. Stephen H. Schneider, National  
Center for Atmospheric Research  
Sierra Club

Dr. John Silander, Ecology  
University of Connecticut

Society for Conservation Biology

Society for Economic Botany

Society for Study of Evolution

Dr. Robert Sokolow, Director, Inst. for  
Energy and Environ. Studies, Princeton U.

Dr. Michael Soule, Chairman  
Environ. Studies, U. of Calif., Santa Cruz

Dr. John Spears, World Bank

Gustave Speth, President  
World Resources Institute

The Wilderness Society

Dr. Daniel Thompson, Biology  
University of Nevada

Dr. Graham A. Tobin, Geography  
University of Minnesota

Dr. Diana Tomback, Environ. Studies  
University of Colorado

Dr. Joseph Travis, Biology  
Florida State University

Russell Train, Chairman, World Wildlife  
Fund/Conservation Foundation

University of California System

Dr. Konrad von Moltke  
Dartmouth College

Dr. Frederic Wagner, Pres., Asso. of  
Ecosystem Research Ctrs., Utah State Univ.

Dr. David Wake, Director, Museum of  
Vert. Biology, Univ. of Calif. Berkeley

Jacqueline M. Warren  
Natural Resources Defense Council

Dr. Patrick Weber, Dir., Kellogg Biological  
Station, Michigan State University

Dr. Leonard Weinstein, Director  
Ecosystem Research Ctr., Cornell Univ.

Dr. John Weins, Zoology  
Colorado State University

Dr. Edward O. Wilson, Museum of  
Comparative Zoology, Harvard Univ.

Dr. Julian Wolpert, Woodrow Wilson  
School, Princeton University

World Wildlife Fund Conservation Fdn.

Charles Zeigler, CIBA GEIGY Corp. NY

## Creation of the National Institutes for the Environment

National and global environmental change will be a dominant issue that shapes the economic and geographic agendas of the next century. The National Institutes for the Environment will help guide the nation and the world to a more secure and sustainable relationship between humanity and the global environment. Through an innovative feedback of science and policy development, and sponsorship of individual research and multidisciplinary task forces, the NIE will assign environmental priorities, focus research, develop policy and educate the public on environmental problems of immense practical significance to human progress. A commitment to the NIE will be a legacy for the 21st century of which the nation can be proud and for which the community of nations will be grateful.

**For further information on the NIE, contact:**

**Dr. Stephen P. Hubbell**  
Department of Ecology and Evolution Biology  
Princeton University  
Princeton, NJ 08544  
Tel: 609-258-6797  
Fax: 609-258-5323

**Dr. Henry F. Howe**  
Biological Sciences (M/C 066)  
University of Illinois  
Box 4348  
Chicago, IL 60680  
Tel: 312-996-0666  
Fax: 312-996-2017

**Dr. David E. Blockstein, Director**  
NIE Committee-Washington Office  
730 11th Street, NW  
Washington, DC 20001-4521  
Tel: 202-628-4303  
Fax: 202-628-4311



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Friends of the National Institutes for the Environment (NIE)  
Please distribute to colleagues. PLEASE RETURN SURVEY.

From: Henry F. Howe, Bios (M/C 066), UIC, Box 4348, Chicago 60680  
Tel (312) 996-0666/413/0023 FAX (312) 996-0666 10 Oct 1990

**HUBBELL RECEIVES AWARD & HEADS SOUTH, HOWE HEADS COMMITTEE**

NIE Committee co-chair Steve Hubbell has escaped to Panama (Smithsonian Tropical Research Institute) for the fall semester here he will write a book on tropical forest dynamics. Dr. Hubbell was selected as a Conservation Fellow by the Pew Charitable Trust. His three-year award of \$50,000 per annum will help support NIE activities. Co-chair Hank Howe will head the NIE Committee until Hubbell's return in January. Before leaving, Steve printed a new brochure, which is enclosed.

**WASHINGTON OFFICE OPENS; BLOCKSTEIN HIRED AS DIRECTOR**

The NIE Committee has opened a Washington DC office in space provided by the American Institute of Biological Sciences (AIBS). The office will act as a national clearinghouse for the NIE initiative. It will also conduct a study of the state of the human resources and funding patterns in environmental sciences. Dr. David E. Blockstein, a conservation ecologist, has been hired as director of the Washington office. Dr. Blockstein was the 1987-1988 Congressional Science Fellow of the AIBS and the American Society of Zoologists, and prepared the national biodiversity bill. Most recently he was a project associate on women and minority issues for AIBS. He is exceptionally well-connected, and we are very fortunate to have him.

NIE correspondence should be directed to Dr. David Blockstein: AIBS, 730 11th St. NW, Washington DC 20001-4521; phone (202) 628-4303; FAX (202) 628-4311.

**NIE COMMITTEE INCORPORATED; tax-deductible status applied for.**

The Committee for the National Institutes for the Environment has been incorporated as a non-profit charitable organization in the District of Columbia. The Committee has applied for status as a tax deductible 501(c)3 charity, which will allow contributions to be tax-deductible from the moment of application. (Contributors can receive a refund if the application is denied.)

**HEALEY HIRED TO HEAD FUNDRAISING EFFORTS**

Dr. Marcus J. Healey, an environmental scientist with training in ecology and engineering, has been hired to coordinate fundraising efforts and to provide liaison with the physical and engineering sciences. Dr. Healey is working out of Steve Hubbell's

office at Princeton, phone (609) 258-6797, FAX (609) 258-1712.

**5. NIE COMMITTEE SEEKS OPERATING FUNDS**

WE NEED YOUR HELP TO PROVIDE INITIAL OPERATING FUNDS FOR THE NIE OFFICE. Presently all money received through a contract with the EPA, through the U. of Illinois, and from the Pew Conservation Fellowship goes to salary. AIBS is providing us with facilities, but we must pay for expendable supplies such as postage, FAX, phone calls, photocopying, and brochures. We also need money to support interns and hire a secretary for the Washington office.

We are asking every NIE supporter to contribute \$25 - \$50 (or whatever you feel capable of donating) to cover initial operating expenses. Contributions of this nature should carry us through the next few months while we pursue larger and more long-term funding arrangements from universities, foundations, and corporations. All contributions to the NIE Committee or to AIBS designated for NIE are tax-deductible, and should be addressed to Dr. Blockstein at the Washington address. THANK YOU.

**6. LEGISLATIVE PROGRESS TOWARDS NAS STUDY**

There is little likelihood of early passage of legislation to elevate the EPA to cabinet status; the relevant Senate bill is stalled. Separate legislation calling for a National Academy of Sciences study of the NIE concept has been introduced in the House (H.R. 5341) and Senate (S. 2371). S. 2371, sponsored by Sen. Bradley (D-NJ) has been approved in committee. The House bill sponsored by Reps. Saxton (R-NJ), Roe (D-NJ), Scheuer (D-NY) and Schneider (R-RI) must be approved by the Science Committee, which approved similar language as an amendment to the House "EPA elevation" bill last spring. For action this session, both bills must be placed on their respective House and Senate calendars for a non-controversial voice vote before adjournment. However, the EPA is likely to fund the NAS study even in the absence of legislation; the Senate appropriations bill has a line item for the NIE study.

We have heard rumors that the EPA is not likely to fund this study. The EPA has been extraordinarily helpful; our problem is the budget crisis and the possibility of Gramm-Rudman-Hollings sequestration - not any rumored difficulty with EPA.

**7. RESEARCHERS NEEDED TO ASSIST IN NIE-RELATED STUDIES**

We are looking for researchers to conduct studies of the state of the environmental sciences in the U.S., funding patterns in environmental science disciplines, and the effectiveness of government support for environmental research. These studies may be ideal for students who are looking for senior theses related to science and environmental policy. The results of such studies could be useful to the NAS in their study and to the NIE Committee in filling the terms of our contract with EPA. Contact David Blockstein at the Washington office for details.

#### 8. SCIENTIFIC SOCIETIES CONTACTED

We have sent a mailing to the business offices of some 700 scientific societies with an interest in environmental research. The mailing informs each society about NIE; asks for advice; asks for an official liaison; asks for information about the status of funding and human resources in their discipline; and asks for an endorsement of the NIE concept. Please contact officers of your societies and ask them to respond favorably to this request.

#### 9. SEEKING NAMES FOR NIE MAILING LIST

Thanks you for sending names of your colleagues to be included on the NIE mailing list. PLEASE send us more names, especially of colleagues in non-biological environmental disciplines in the natural and social sciences. Send the names to me at the Chicago office where our master mailing list is presently maintained.

#### 10. CORRECTION REGARDING THE ECOLOGICAL SOCIETY.

In an attempt to be brief in the last newsletter, I stated "ESA has endorsed NIE". Actually ESA has formally endorsed the NAS study of the NIE concept. Sorry for the confusion.

#### 11. POSTER DISPLAY AVAILABLE FOR MEETINGS

Miriam Van Zant has prepared a poster display including art and photography for use at meetings; it has been used at the American Institute of Biological Sciences and at the Missouri Botanic Gardens Symposium (37th Annual). The components can be pinned to a poster board; we can lend them if we have sufficient notice to update material. We would appreciate help with \$50 shipping costs (each way). Write to Miriam at the Chicago address.

#### 12. SURVEY OF NIE ACTIVITY ENCLOSED - PLEASE RESPOND

Attached is a survey asking for your assistance in specific NIE-related activities. Please fill out this form and return it to the Washington office.

THANK YOU.

SURVEY OF NIE ACTIVITY

PLEASE FILL OUT AND RETURN TO:

Your name and address:

DR. DAVID BLOCKSTEIN  
COMMITTEE FOR THE NIE  
730 11TH ST. NW  
WASHINGTON, DC 20001-4521

Phone:

Fax:

We must determine our strength in different parts of the United States; we must know what people are doing, or will do in various academic disciplines. Would you be willing to, or have you been able to, help the NIE effort in the following ways (yes or no):

- |  | Have done | Will do |
|--|-----------|---------|
| 1. Distribute NIE information to colleagues within your department.  | _____     | _____   |
| 2. Advocate NIE to your Chair or Head?   | _____     | _____   |
| 3. Distribute NIE information to colleagues in other departments in your institution?  | _____     | _____   |
| 4. Distribute NIE information to colleagues in other institutions?   | _____     | _____   |
| 5. Ask your office of research and development, chancellor, president, or other appropriate administrative officer to request support of NIE from the House and Senate delegation from your state? | _____     | _____   |
| 6. Contact your Representative and Senators yourself?  | _____     | _____   |
| 7. Request support for the NAS study from professional societies?  | _____     | _____   |
| 8. Request endorsement of the NIE concept from professional societies?   | _____     | _____   |
| 9. Assist with fund-raising:   |           |         |
| a. Help write proposals  | _____     | _____   |
| b. Contact potential donors  | _____     | _____   |
| c. Other   | _____     | _____   |

PLEASE SEND \_\_\_\_\_ COPIES OF THE BROCHURE.

A CHECK FOR \$ \_\_\_\_\_ IS ENCLOSED AS A TAX-DEDUCTABLE CONTRIBUTION FOR OFFICE AND PRINTING EXPENSES.



Southern California Association of  
Marine Invertebrate Taxonomists

3720 Stephen White Drive  
San Pedro, California 90731

December 1990

Vol. 9, No.8

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NEXT MEETING: Flatworms

GUEST SPEAKER: John Ljubenkov, MEC Analytical Systems Inc  
Carol Paquette, MBC Applied Environmental  
Tony Phillips, Hyperion Treatment Plant

DATE: Monday, January 14, 1991, 9:30 A.M.

LOCATION: Cabrillo Marine Museum  
San Pedro, CA

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MINUTES FROM MEETING ON December 10th & 11th, 1990

Barnard Amphipod Workshop: The first day of the workshop was spent examining some deepwater Orchomene specimens collected in bait traps at depths of 1500 ft around the Channel Islands. It was not resolved whether the animals represent various morphs of Orchomene abyssorum, or a new species. The consensus was that more specimens are needed to define the range of variation in these animals. SIO participants brought along a film of living Orchomene cf. abyssorum. The film clearly demonstrated the swimming and feeding movements of this species.

Doug Deiner, MEC Analytical Systems Inc., presented a key to Hippomedon of southern California. The key is included in this newsletter. Ron Velarde, City of San Diego, ran an Orchomene workshop for shallow water southern California species.

On the second day of the workshop, two species of Cerapus were examined; both appeared to be new species. Jim Thomas, Reef Foundation, agreed to describe both of these new species.

Sue Garner, SIO, brought in some specimens of Ingolfiellidea collected from magenese nodules. That is as far as we went on this rare group of amphipods.

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

SCAMIT newsletter is not deemed to be a valid publication  
for formal taxonomic purposes.

Four species of Foxiphalus were examined: F. major, F. golfensis, F. obtusidens and F. xiximeus. Aside from the most frequently used characters, Carol Paquette reported that F. golfensis has mi-lateral setae on the pleons which allows for a quick identification.

SCAMIT presented Dr. Barnard with a plaque (with a engraved picture of Listriella difusa ) in appreciation for his years of help with amphipod taxonomy. In addition, SCAMIT also gave Dr. Barnard an Audobon book: Hummingbirds of the Carribean.

Biological Criteria Workshop: Larry Lovell represented SCAMIT at the EPA workshop on Biological Criteria: Research and Regulations held at the Crystal City Hyatt Regency Hotel, Arlington Virginia, on December 12th and 13th, 1990. The conference was sponsored by the U.S. EPA, Office of Water. SCAMIT's poster presentation was entitled "Regional Standardization of Taxonomy: The Southern California Association of Marine Invertebrate Taxonomists (SCAMIT)". The poster was only up for an hour and a half, allowing participants about 5 minutes to look at each of the 18 posters. There were many positive comments on the professional look of the poster as well as the work of SCAMIT in southern California. The conference addressed the current and future use of biological criteria as an environmental assesment tool. Major sessions were devoted to: Habitat Variation, Reference Condition, Designing Biological Surveys, Representation of Biointegrity, and Evaluation of Non-Attainment of Use. Each topic, (except the last), had speakers covering applications for streams and rivers, lakes and resevoirs, and estuaries, wetlands, nearshore marine waters.

There were approximately 200 - 250 participants at this national conference. The EPA will publish proceedings of the conference in the near future. A copy of this publication may be obtained from:

George Gibson  
Office of Water, U.S. EPA  
Washington, D.C. 20460

One of the most memorable quotes overheard at the conference was "If it's a group you despise, use a larger mesh size".

Spionidae Workshop: The Spionidae workshop will be in the San Diego area during February, 1991. If you have any provisional species that you would like to discuss at the meeting, Larry requests that you send a specimen to him prior to the meeting.

Larry Lovell  
1036 Buena Vista Dr.  
Vista, CA 92083

SCAS Annual Meeting: SCAMIT is working on sponsoring a symposium for the 100th anniversary of the SCAS meetings during May 1991. If you have a paper to present please contact Ron Velarde or Larry Lovell.

L.A. Co. Mus. Nat. Hist. Weekly Seminars: The schedule of seminars at the Los Angeles County Museum of Natural History from January 10th to March 14th 1991 is included in the newsletter.

New Literature: Roney, J.D. 1990. A new species of marine amphipod (Gammaridea: Ampeliscidae) from the sublittoral of southern California. Bull. Southern Calif. Acad. Sci. 89(3):124-129.

**\*\*Note:** This is a description of SCAMIT's Ampelisca sp. A.

SCAMIT Christmas Party: The SCAMIT Christmas party was a great success. The recipe for success included good food, lots of kids, Santa Barnard and a dash of holiday cheer. Thanks to everyone who helped and participated.

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

SCAMIT Officers:

President	Ron Velarde	(619) 226-0164
Vice-President	Larry Lovell	(619) 945-1608
Secretary	Ross Duggan	(619) 226-8175
Treasurer	Ann Martin	(213) 648-5317



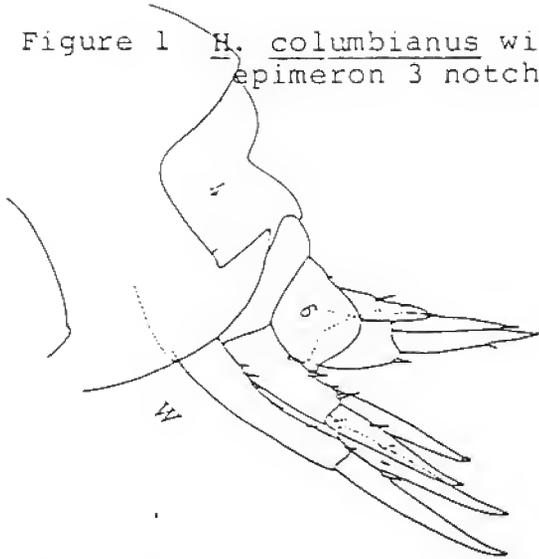
KEY TO NORTH PACIFIC SPECIES OF Hippomedon

Note most California species with epimeron 3 notched have been called H. denticulatus, however, this name is not valid for the specimens along our coast which do not fit this Atlantic species described by Bate.

1. Epimeral sideplate 3 with basal notch (Figure 1)..... 2  
    Epimeral sideplate 3 without basal notch ..... 6
2. Gnathopod 2, palm long, concave, dactyl much shorter than palm (Figure 2) .....H. columbianus  
    Gnathopod 2, palm short, dactyl equal to palm ..... 3
3. Antenna 1, peduncular segment 1 strongly produced anterodistally into an acute process reaching beyond segment 2, telson not heavily armed and without setules (Figure 3)....H. denticulatus  
    Antenna 1, peduncular segment 1 not strongly produced into an acute process, telson not as Figure 3..... 4
4. Uropod 3, rami broad, margins parallel, tapering only at the tips, segment 2 outer ramus short (Figure 4) .....H. orientalis  
    Uropod 3, rami tapering distally, segment 2 outer ramus rather elongate ..... 5
5. Gnathopod 1 almost transverse (Figure 5) .....H. coecus  
    Gnathopod 1 oblique.....H. sp. A
6. Urosomal segment 1 with prominent keel, crystalline eye lens present .....H. holbolli  
    Urosomal segment 1 without prominent keel or crystalline eye lens ..... 7
7. Gnathopod 2, dactyl distinctly shorter than palm (Figure 2). 8  
    Gnathopod 2, dactyl equal to palm ..... 11
8. Peraeopod 7, posterior margin of segment 2 strongly tapered distally (Figure 6) .....H. pacificus  
    Peraeopod 7, posterior margin of segment 2 weakly tapered .. 9
9. Gnathopod 1, segment 6 (propodus) broadened distally, peraeopods 5, 6, and 7, posterior marginal serrations of basis without setae .....H. eous  
    Gnathopod 1, segment 6 not broadened distally, peraeopods 5, 6, and 7 posterior marginal serrations with inserted seta .... 10
10. Gnathopod 2, segment 5 twice as long as segment 6, telson elongate, twice as long as broad (Figure 7) .....H. granulosus  
    Gnathopod 2, segment 5 less than twice as long as segment 6, telson of medium length, less than twice the width....H. tenax
11. Uropod 3, rami broad, margins parallel, tapered only at tip (Figure 8) .....H. punctatus  
    Uropod 3, rami slender and tapered distally ..... 12

12. Peraeopods 5, 6, and 7, serrated posterior margins of segment 2 without inserted setae, observe under compound microscope .....H. propinquus  
 Peraeopods 5, 6, and 7, serrated posterior margins of segment 2 with inserted setae ..... 13
13. Uropod 2, peduncle with one apical spine and rami naked or with at most one spine, no strong spines on peraeopod 4, .....H. zetesimus  
 Uropod 2, peduncle and rami spinose ..... 14
14. Peraeopod 4, segment 5, posterior margin with 3 strong spines (Figure 9).....H. subrobustus  
 Peraeopod 4, segment 5, without 3 strong spines...juv. H. sp. A

Figure 1 H. columbianus with  
epimeron 3 notched



H. subrobustus without  
epimeron 3 notched

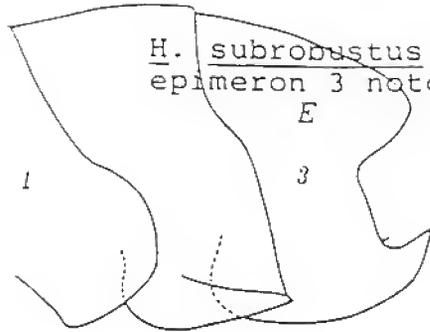
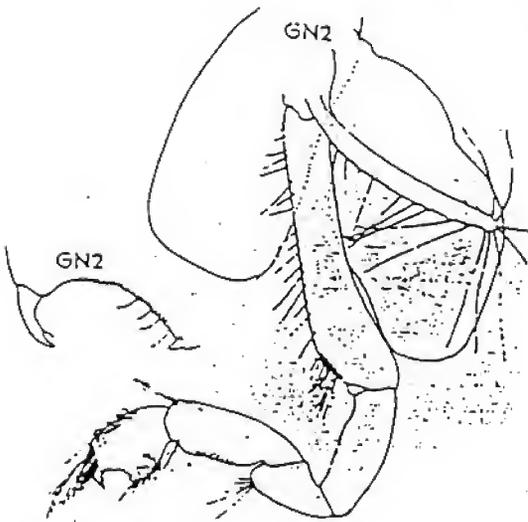
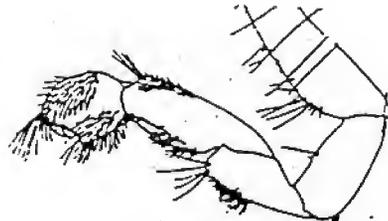


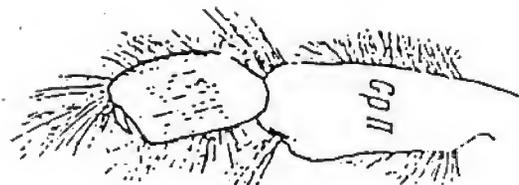
Figure 2 Palm longer than dactyl



H. columbianus



H. granulatus



H. pacificus

Figure 3 produced antennae 1 and telson H. denticulatus

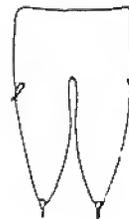
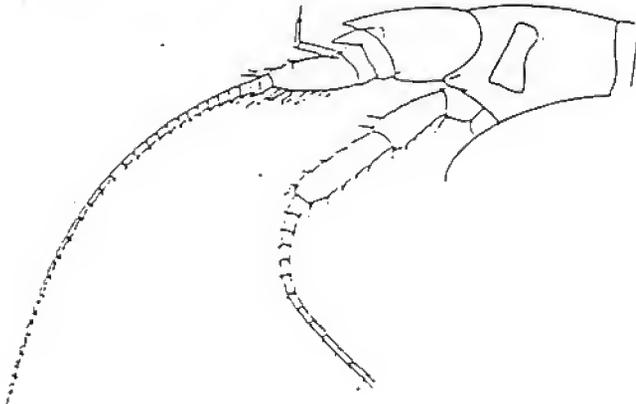


Figure 4 broad rami of uropod 3, telson and epimeron 3 of H. orientalis

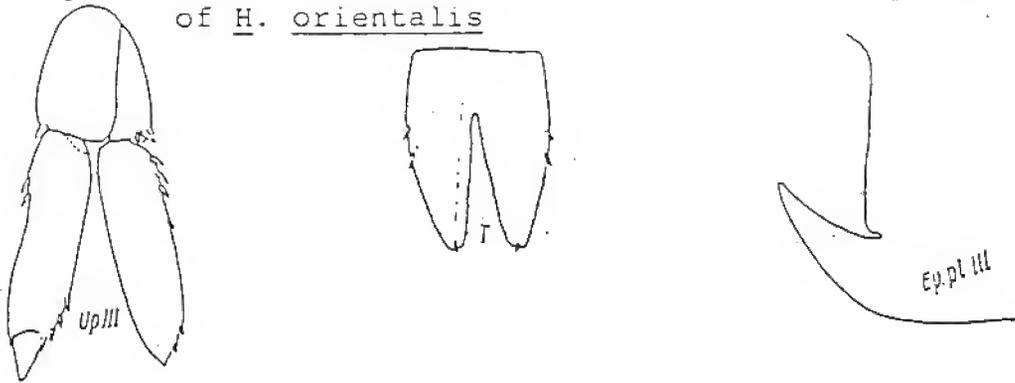
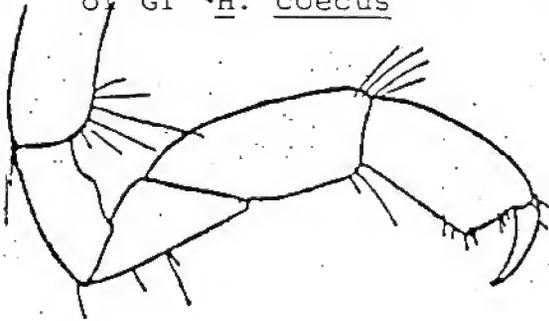


Figure 5 almost transverse palm of G1 of H. coecus



Oblique palm of H. sp. A

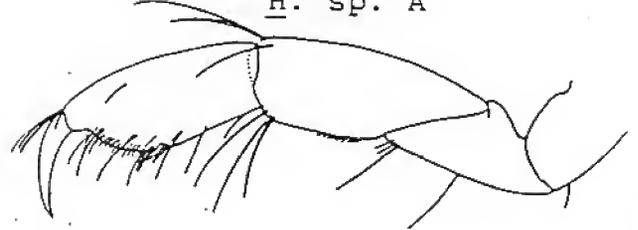
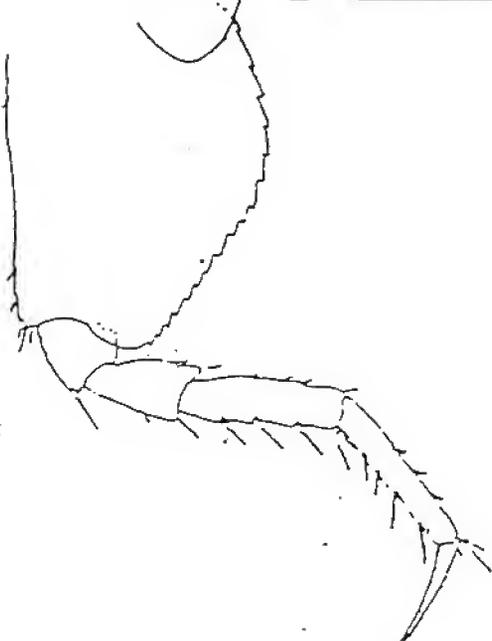


Figure 6 tapered post. coxal margin of P7 H. pacificus



non-tapered post. coxal margin of H. granulosis

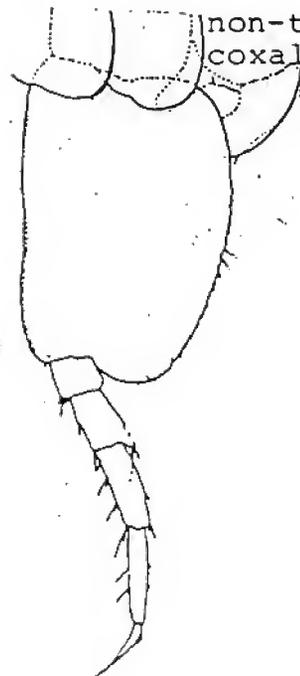
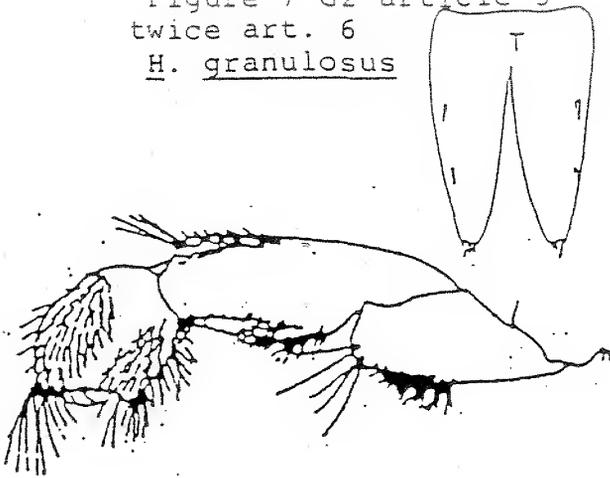


Figure 7 G2 article 5  
twice art. 6  
H. granulosis



G2 art. 5 less than  
twice art. 6  
H. tenax

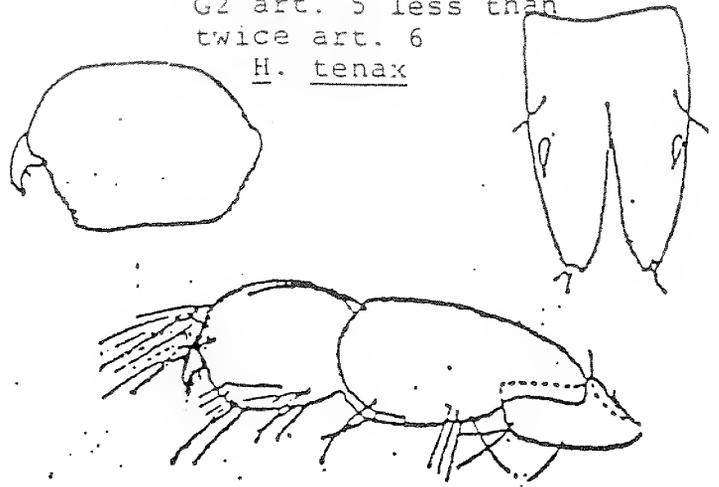
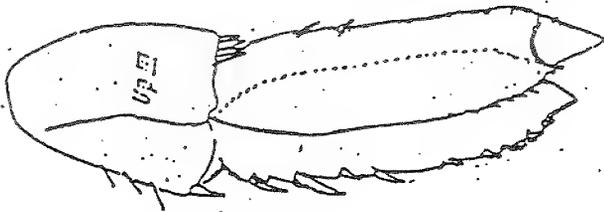


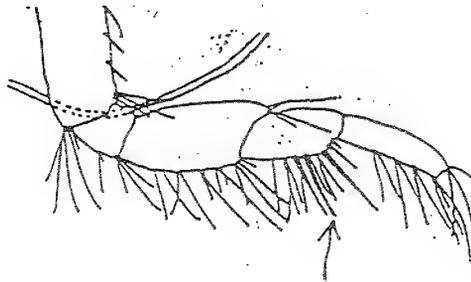
Figure 8 U3 broad H. punctatus



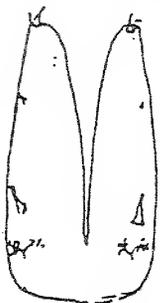
U3 tapered H. zetesimus



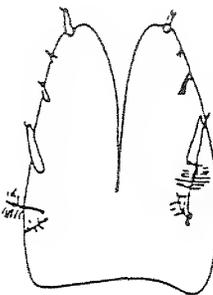
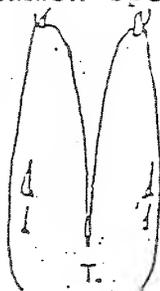
Figure 9 Peraeopod 4 with 3 strong spines H. subrobustus



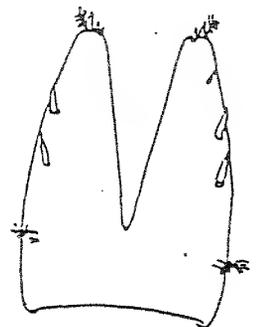
Telsons of common species



H. zetesimus



H. sp. A



H. subrobustus

*Natural History Museum*   
**RESEARCH SEMINARS**

PLEASE POST / CIRCULATE

*Covering History and the Natural Sciences*

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**WINTER 1991 SCHEDULE**

- 10 JANUARY      SHARON D. BLANK - *Conservation Section, LACMNH*  
                    **WHAT IS A CONSERVATOR AND WHY ON EARTH DO WE NEED ONE?**
- 17 JANUARY      ALFRED W. EBELING - *University of California, Santa Barbara*  
                    **SEVERE STORMS, SEA URCHINS, AND SOUTHERN CALIFORNIA KELP FORESTS**
- 24 JANUARY      J. D. STEWART - *Vertebrate Paleontology Section, LACMNH*  
                    **TOOTHED BIRDS OF THE CRETACEOUS: IMPLICATIONS FOR AVIAN ORIGINS  
                    AND INTERRELATIONSHIPS**
- 31 JANUARY      BRUCE N. RUNNEGAR - *University of California, Los Angeles*  
                    **WHAT WERE THE VENDOZOA? -- EARLY ANIMALS OR SOMETHING ELSE?**
- 7 FEBRUARY      DAVID S. WOODRUFF - *University of California, San Diego*  
                    **FROGS AND SNAILS AND GIBBON TALES: ALLOZYMES AND DNA SEQUENCES IN  
                    SYSTEMATICS AND EVOLUTIONARY BIOLOGY**
- 14 FEBRUARY     M. GUY BISHOP - *Seaver Center for Western History Research, LACMNH*  
                    **THE FOUR-MINUTE MEN OF LOS ANGELES COUNTY DURING WORLD WAR I**
- 21 FEBRUARY     RICHARD L. SQUIRES - *California State University, Northridge*  
                    **TETHYAN FOSSILS IN THE AMERICAS: NEW CORAL REEF INVERTEBRATES  
                    FROM THE EOCENE OF BAJA CALIFORNIA SUR, MEXICO**
- 28 FEBRUARY     CHERYL L. WATTS - *University of California, Los Angeles, and  
                    Mammalogy Section, LACMNH*  
                    **SYSTEMATICS OF THE GENUS *BLARINA*: NORTH AMERICAN SHORT-TAILED  
                    SHREWS**
- 4 MARCH  
[MONDAY]        WILLIAM GLEN - *U. S. Geological Survey, Menlo Park*  
                    **MASS EXTINCTION: IMPACT, VOLCANISM, OR ?**
- 7 MARCH         SHEL I. O. SMITH - *Los Angeles Maritime Museum, San Pedro*  
                    **THE RONSON SHIP: NAUTICAL ARCHEOLOGY AND 'THE SHIP BENEATH  
                    THE CITY'**
- 14 MARCH        DAVID R. LINDBERG - *University of California, Berkeley*  
                    **PHYLOGENY OF THE GASTROPODA: HISTORY, TRENDS, AND CLASSIFICATION**
- 

ALL SEMINARS ARE THURSDAY AFTERNOON AT 3:00 P.M.  
IN THE TIMES MIRROR CONFERENCE ROOM  
(basement level, west end of building)

NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY  
900 EXPOSITION BLVD., LOS ANGELES, CA 90007

Coffee / Refreshments available at 2:45 PM

— ALL INTERESTED PERSONS ARE INVITED TO ATTEND —



Southern California Association of  
Marine Invertebrate Taxonomists

3720 Stephen White Drive  
San Pedro, California 90731

January 1991

Vol. 9, No. 9

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NEXT MEETING: Spionidae (non-polydorid)  
GUEST SPEAKER: Larry Lovell, Private Consultant  
DATE: Monday, February 11, 1991, 9:30 A.M.  
LOCATION: 1036 Buena Vista Drive (Larry's home)  
Vista, CA (a map has been included)  
(619) 945-1608

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MINUTES FROM MEETING ON January 14, 1991

Flatworm Workshop: John Ljubenkov, MEC Analytical Systems Inc. and Tony Phillips, Hyperion Treatment Plant organized January's flatworm workshop. Tony and John amassed a list of 12 species of flatworms and illustrated the important diagnostic characters used to identify each of the 12 species. The illustrations for each of the 12 species has been included with this newsletter.

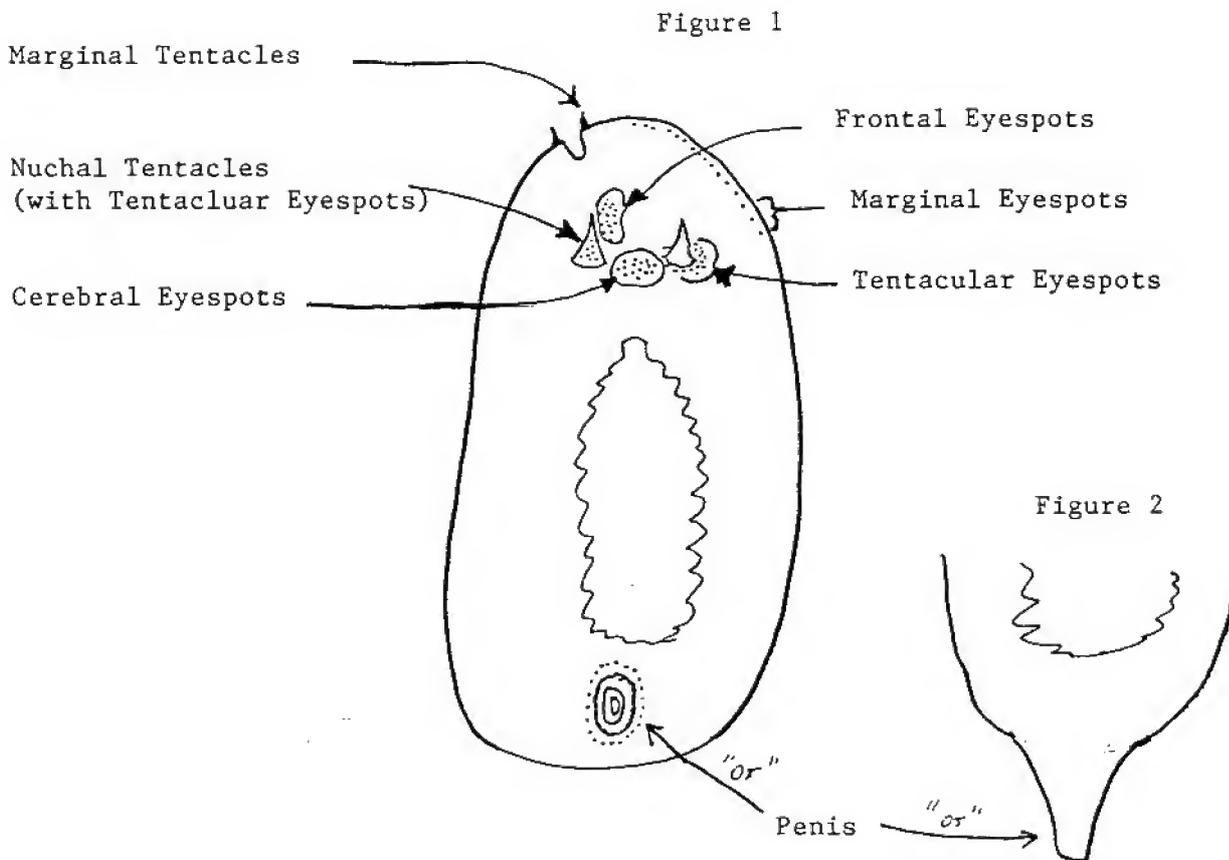
Pseudostylochus burchami, Plehnia caeca var. oculifera and Stylochus exiguus are the most common species encountered on soft substrates in the southern California Bight. Eurylepta sp. A was collected during a deep water MMS survey in northern California on hard substrata.

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

SCAMIT newsletter is not deemed to be a valid publication  
for formal taxonomic purposes.

The three most important characters used to identify flatworms discussed, in order of importance were:

- 1) Distribution of eyespots (cerebrals, frontals, tentaculars and marginals), or the absence of eyespots (fig. 1)
- 2) Presence or absence of nuchal and marginal tentacles (some are retractile) (fig. 1)
- 3) Position of the penis (either ventral or posterior) (figs. 1, 2)



SCAMIT acknowledges and thanks John and Tony for the time they spent preparing for this workshop. The information will be very helpful in future identification of flatworms.

February Spionidae Meeting: The spionid workshop will be a hands on format. Specimens will be provided by Larry. All participants should bring pertinent literature and any additional specimens they want considered. A map to Larry Lovell's home for the meeting has been included in this newsletter.

March Nuculanidae Meeting: Just a reminder that the March SCAMIT meeting covering the Nuculanidae will be held at the Santa Barbara Museum of Natural History. If you have any unusual specimens please send them to Paul Scott ASAP so that he may prepare for the meeting.

Paul Scott  
Associate Curator of Invertebrate Zoology  
Santa Barbara Museum of Natural History  
2559 Puesta Del Sol Road  
Santa Barbara, CA 93105

Parasitic Copepods: Larry Lovell has noticed an endoparasitic copepod residing within the thorax of Mediomastus off the Orange County outfall. Larry is curious to determine if this parasitism is a local association, or more widespread.

Publication Funding: SCAMIT has approved funding for the publication costs for Dr. Masahiro Dojiri's and Dr. Robert Brantley's paper describing a new species of copepod (Siphonostomatoida: Caligidae) parasitic on the California Halibut from Santa Monica Bay, California". This will be the 5th publication funded by SCAMIT.

Next Year's Agenda: If you have any suggestions for topics or workshops for the 1991 - 1992 SCAMIT meetings please submit them to the vice-president within the next two months. The executive committee will be scheduling speakers for next year very soon.

New Literature: Maciolek, N.J. 1990. A redescription of some species belonging to the genera Spio and Microspio (Polychaeta: Annelida) and descriptions of three new species from the northwestern Atlantic Ocean. J. Nat. Hist. 24:1109-1141.

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

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14 January 1991

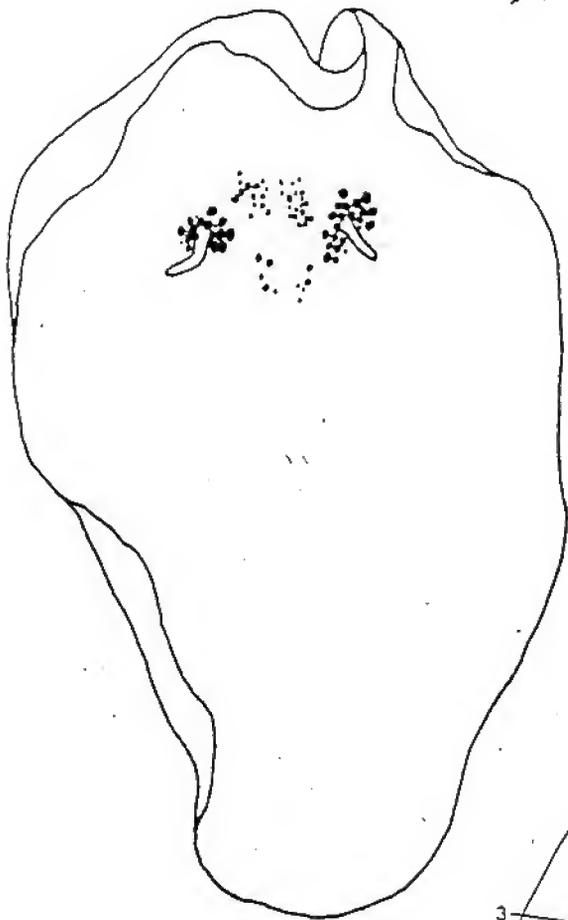
POLYCLAD FLATWORMS FROM CALIFORNIA

1. Pseudostylochus burchami (Heath and McGregor, 1912).  
A. small specimen from Hyperion.  
b. from Hyman, 1953
2. Plehnia caeca var. oculifera Hyman, 1953  
A. dorsal aspect, cleared  
B. ventral aspect, posterior portion, showing contracted penis  
C. from Hyman, 1953; var. caeca
3. Stylochus exiguus Hyman, 1953  
A. from Hyman, 1953  
B and C. two specimens from Hyperion  
~~C~~ and ~~D~~. two specimens from Orange County, notice penis  
D E
4. Cryptocelis occidentalis Hyman, 1953  
A. specimen from Orange County  
B and C. two more variations of eye pattern
5. Stylochus franciscanus Hyman, 1953  
A. from Hyman, 1953  
B. dorsal surface, uncleared  
C. dorsal surface, cleared
6. Stylochoplana cf. longipenis Hyman, 1953  
A. from Hyman, 1953  
B. eyes from Hyman, 1953  
C. eyes from Orange County specimen  
D. Orange County specimen
7. Stylochoplana sp.  
A. dorsum  
B. ventrum  
C. eyes  
D. single tentacle
8. Flatworm # 43  
A. uncleared, dorsum  
B. cleared, dorsum  
C. eyes
9. Spinnicirrus sp.  
A. head cleared, with ocelli  
B. a few individual ocelli
10. Eurylepta sp. A  
A. dorsum, cleared with eyes  
B. ventrum  
C. eye structure
11. Hoploplana sp. A  
A. whole animal, Orange County  
B. eye pattern

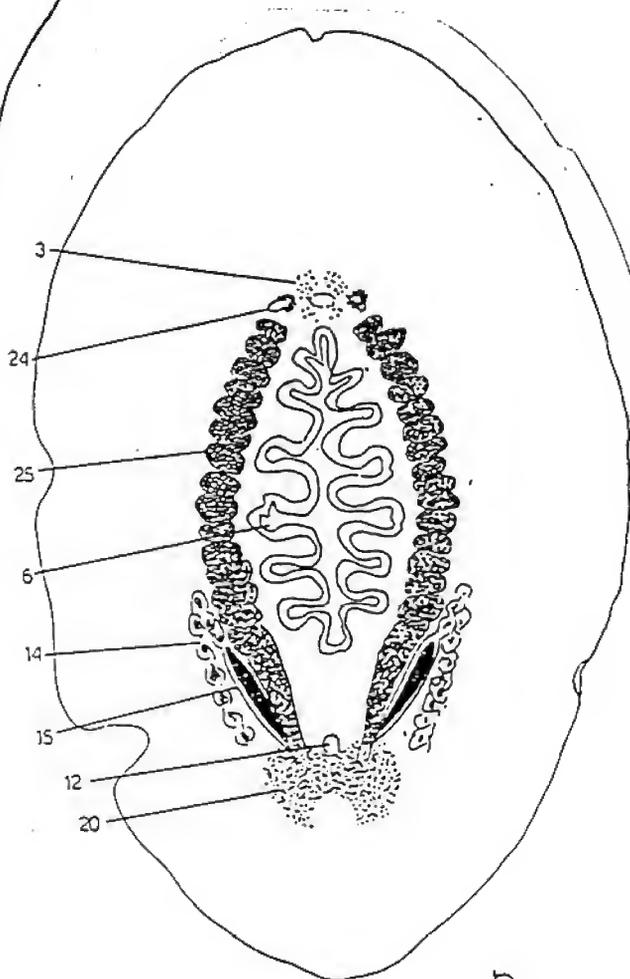
NIMS - NORTH-CENTRAL CALIFORNIA  
ROCK SAMPLE

ST B

1. PSEUDOSTYLOCHUS BURCHAMI



A L=8  
W=5

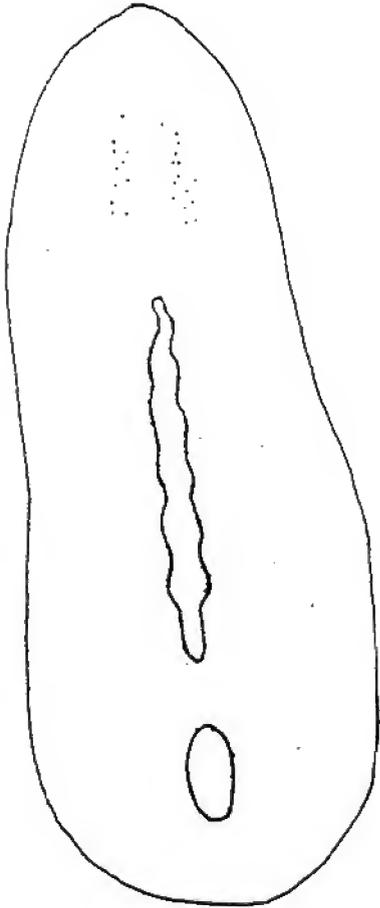


B

2. PLEHNIA CAECA

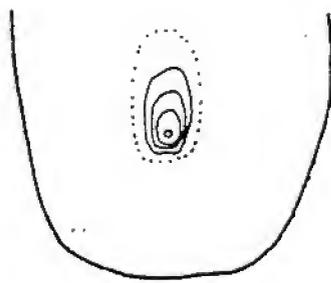
VAR. OCULIFERA

A



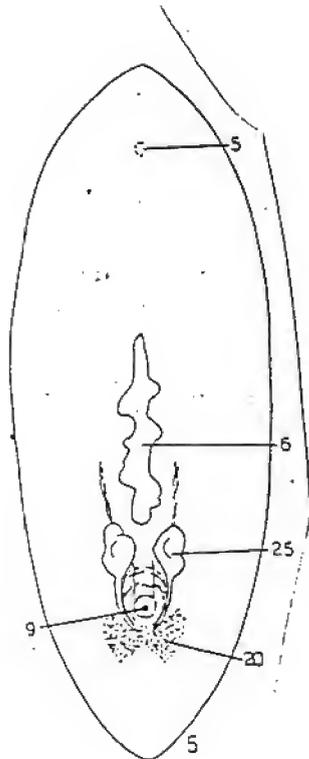
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B

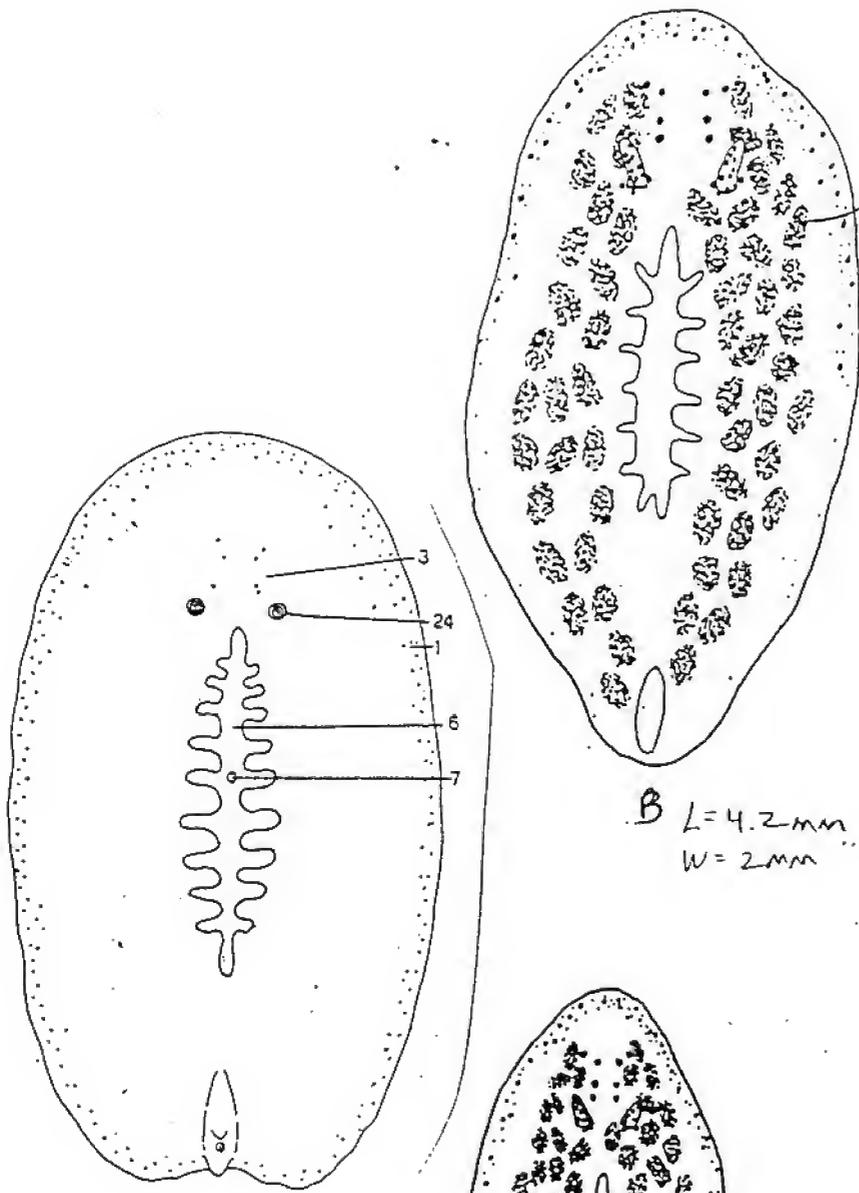


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C

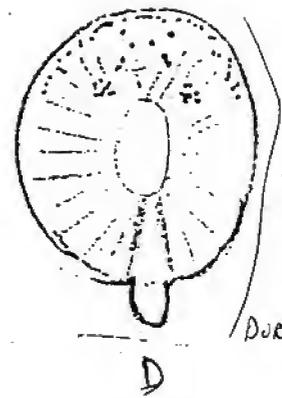


3. STYLOCHUS EXIGUUS



SURFACE  
PIGMENT

B L = 4.2 mm  
W = 2 mm

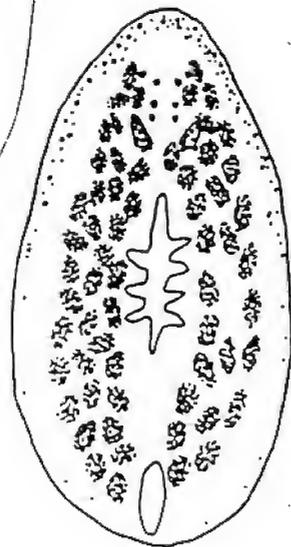


L = 2 mm

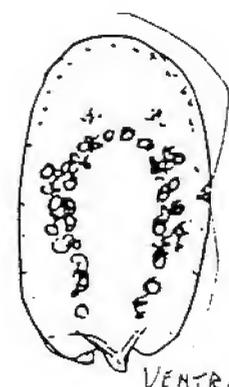
DORSAL

D

A  
L = 7 mm  
W = 4 mm

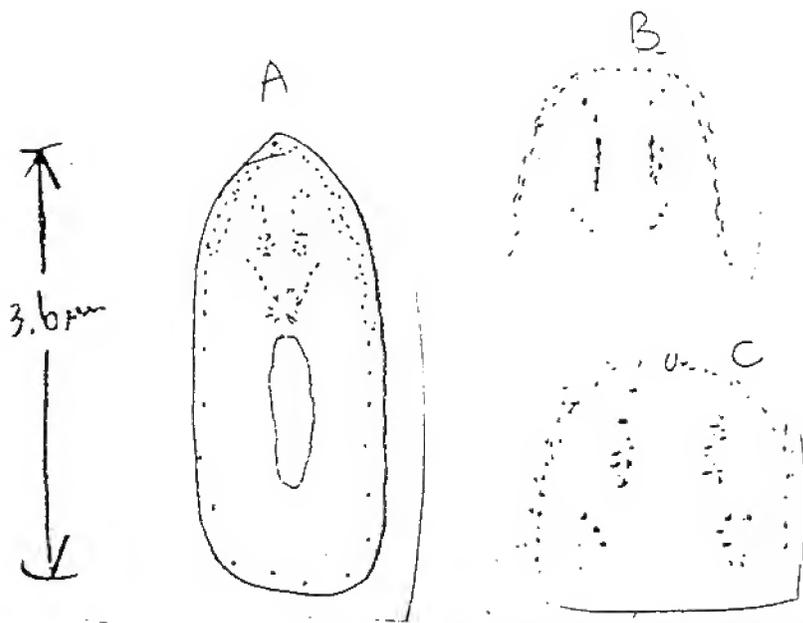


C L = 3.8 mm  
W = 1.8 mm

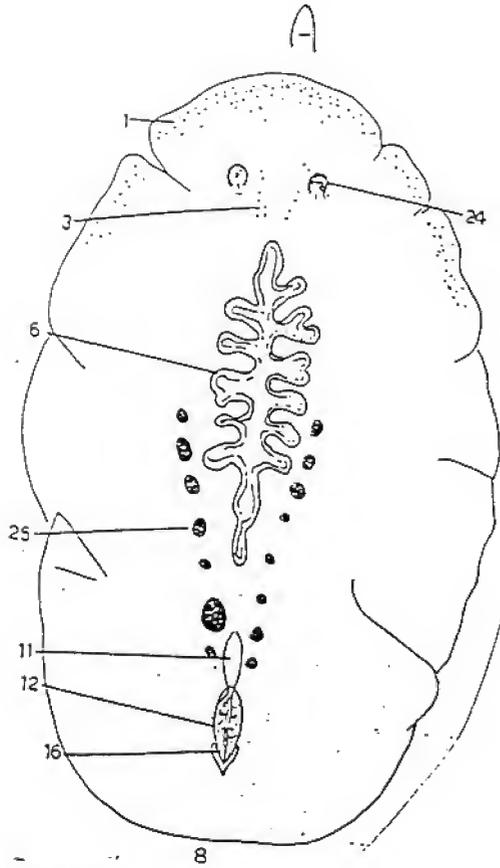
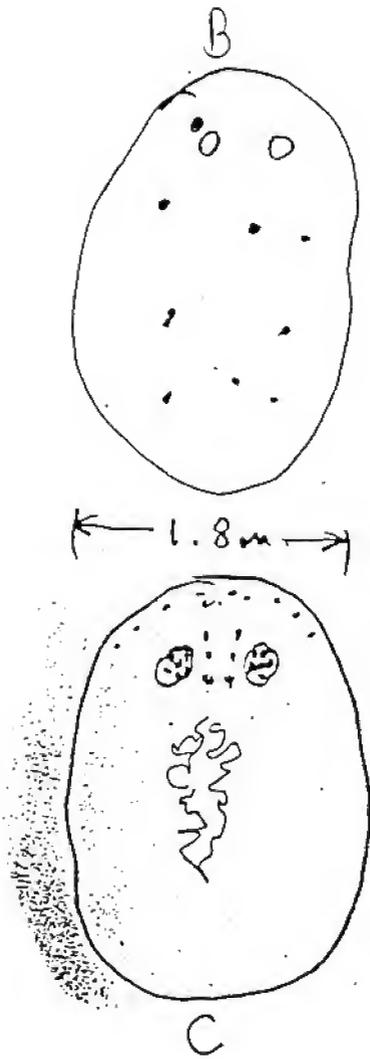


VENTRAL

E

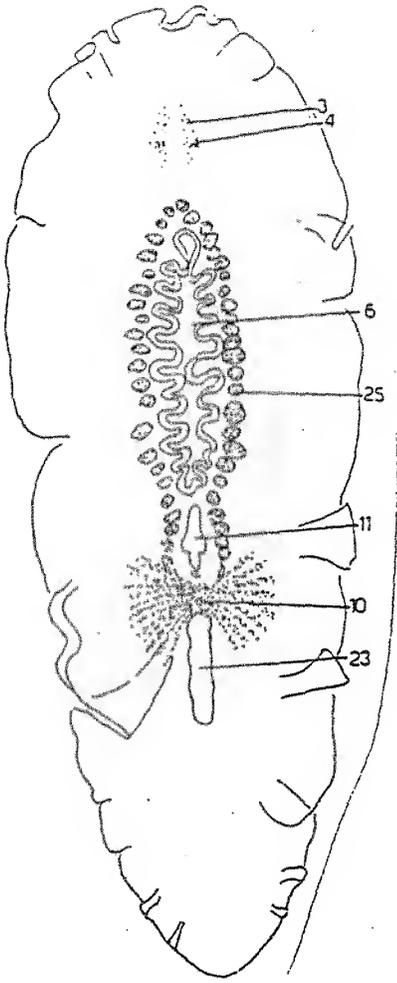


4. CRYPTOCELIS OCCIDENTALIS



5. STYLOCHUS FRANCISCANUS

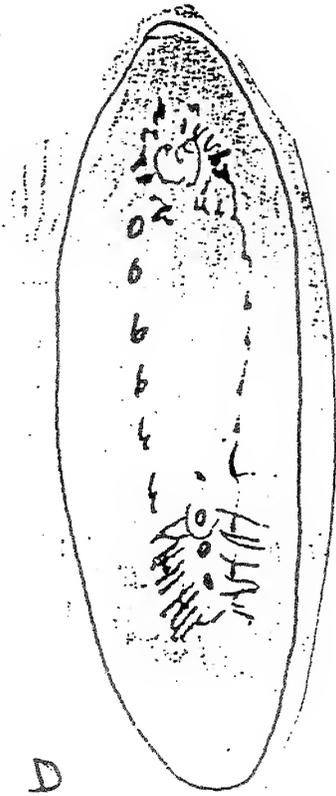
6.  
 STYLOCHOPLANA CF. LONGIPENIS



B

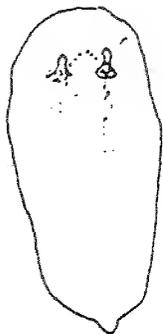


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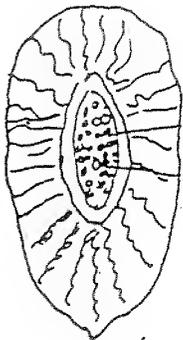


D

DORSUM

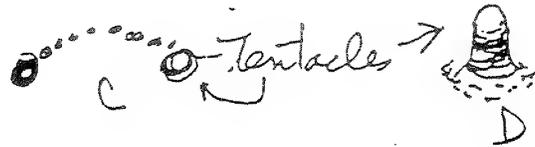


a

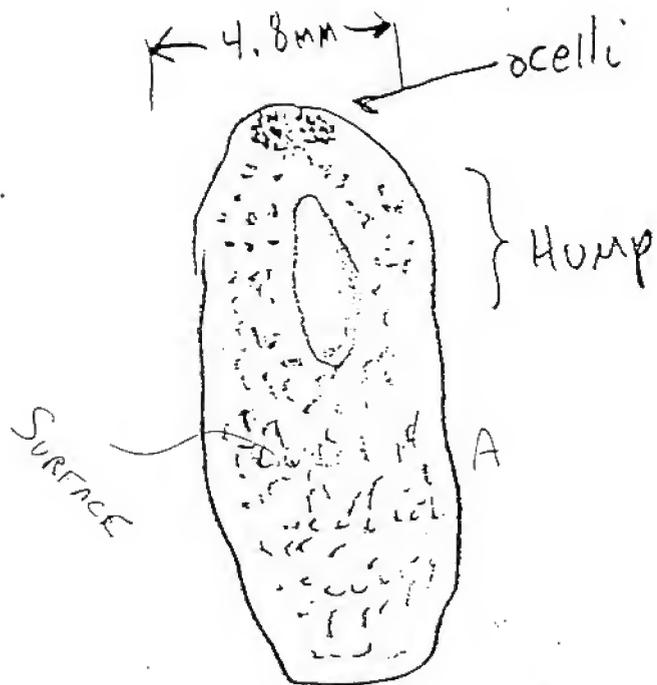


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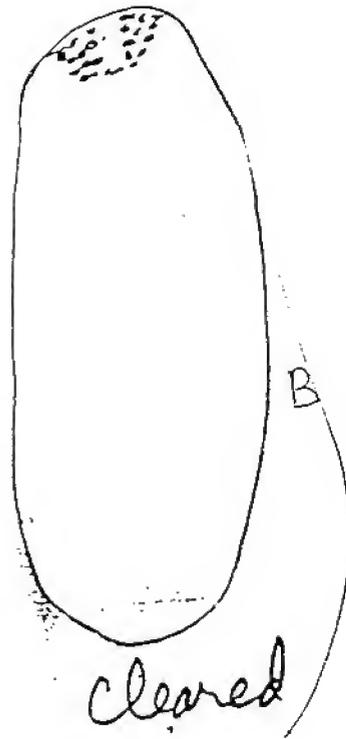
Ventrum



7. STYLOCHOPLANA SP.



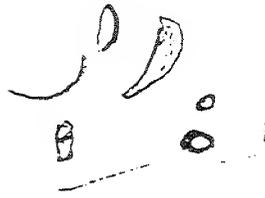
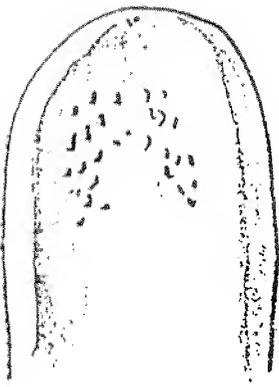
un-cleared



Cleared

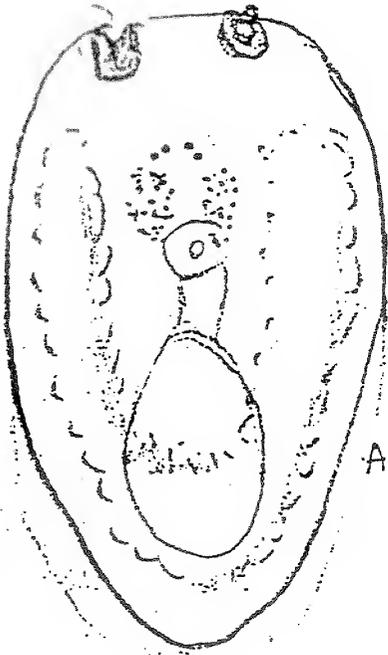


8. FLATWORM #43 |



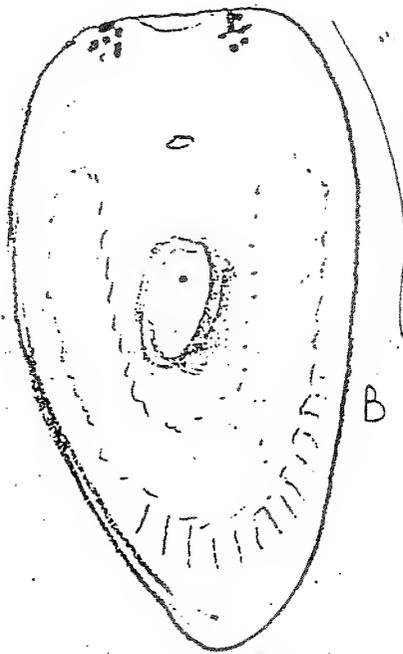
9. ?SPINNICIRRUS SP.

A



A

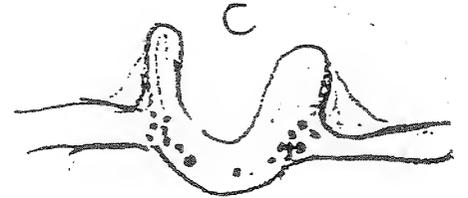
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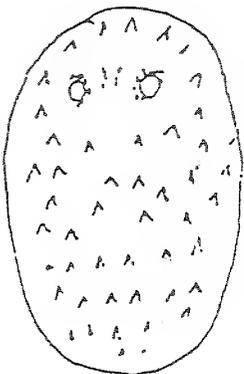
B

Ventrum

10. EURYLEPTA SP. A



C



A



B

11. Hoploplana sp. A



Southern California Association of  
Marine Invertebrate Taxonomists

3720 Stephen White Drive  
San Pedro, California 90731

February 1991

Vol. 9, No. 10

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NEXT MEETING:           Nuculanidae

GUEST SPEAKER:        Paul Scott  
                          Santa Barbara Natural History Museum

DATE:                   Monday, March 11, 1991, 9:30 A.M.

LOCATION:                Santa Barbara Natural History Museum  
                          2559 Puesta Del Sol Road  
                          Santa Barbara, CA  
                          (805) 682-4711  
                          \*\*(a map has been included)

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MINUTES FROM MEETING ON February 11, 1991

Spionidae Meeting: The Spionidae meeting was a great success thanks to both Larry Lovell, Private Consultant and Dean Pasko, City of San Diego. Larry compiled a species list, and a key to the non-Polydorid spionids collected between the intertidal zone and 500 m. The key includes 29 recognized species and 3 SCAMIT provisional species. Dean Pasko completed the descriptions of the provisional species, Prionospio sp. A & B, for SCAMIT voucher sheets. Both Larry's key and the Prionospio voucher sheets will be included in next month's newsletter.

Accommodations in Santa Barbara: Larry Lovell has suggested The Mountain View Inn if you are planning to spend the night in Santa Barbara prior to the Nuculanidae meeting. Larry was quoted a weeknite price of \$53.00. The phone number for the Mountain View Inn is (805) 687-6036.

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

SCAMIT newsletter is not deemed to be a valid publication  
for formal taxonomic purposes.

Next Year's Agenda: If you have any suggestions for topics or workshops for the 1991 - 1992 SCAMIT meetings, please submit them to the vice-president within the next two months. The executive committee will be scheduling speakers for next year very soon.

May SCAMIT Meeting: The SCAMIT meeting scheduled for May will be hosted by Bill Branta. The subject of the two-day workshop will be the Bryozoans. The meeting has been scheduled for Monday and Tuesday, May 13 & 14, 1991, following the Southern California Academy of Sciences meetings.

SCAMIT Officer Nominations: Nominations are now being accepted for the positions of President, Vice-President, Secretary, and Treasurer for SCAMIT for the 1991-1992 year. Please send your nominations to the Vice-President, Larry Lovell at the following address.

Larry Lovell  
1036 Buena Vista Dr.  
Vista, CA 92083

(619) 945-1608

Environmental Indicator Meeting: The EPA is sponsoring a meeting entitled "Environmental Indicators: Measurement and Assessment Endpoints" March 19-22, 1991 in Chicago, IL. The announcement has been included in this newsletter.

International Polychaete Conference: The 4th International Polychaete Conference will be held July 26 - August 2, 1992 in Angers, France. A copy of the announcement and a registration form have been included in this newsletter.

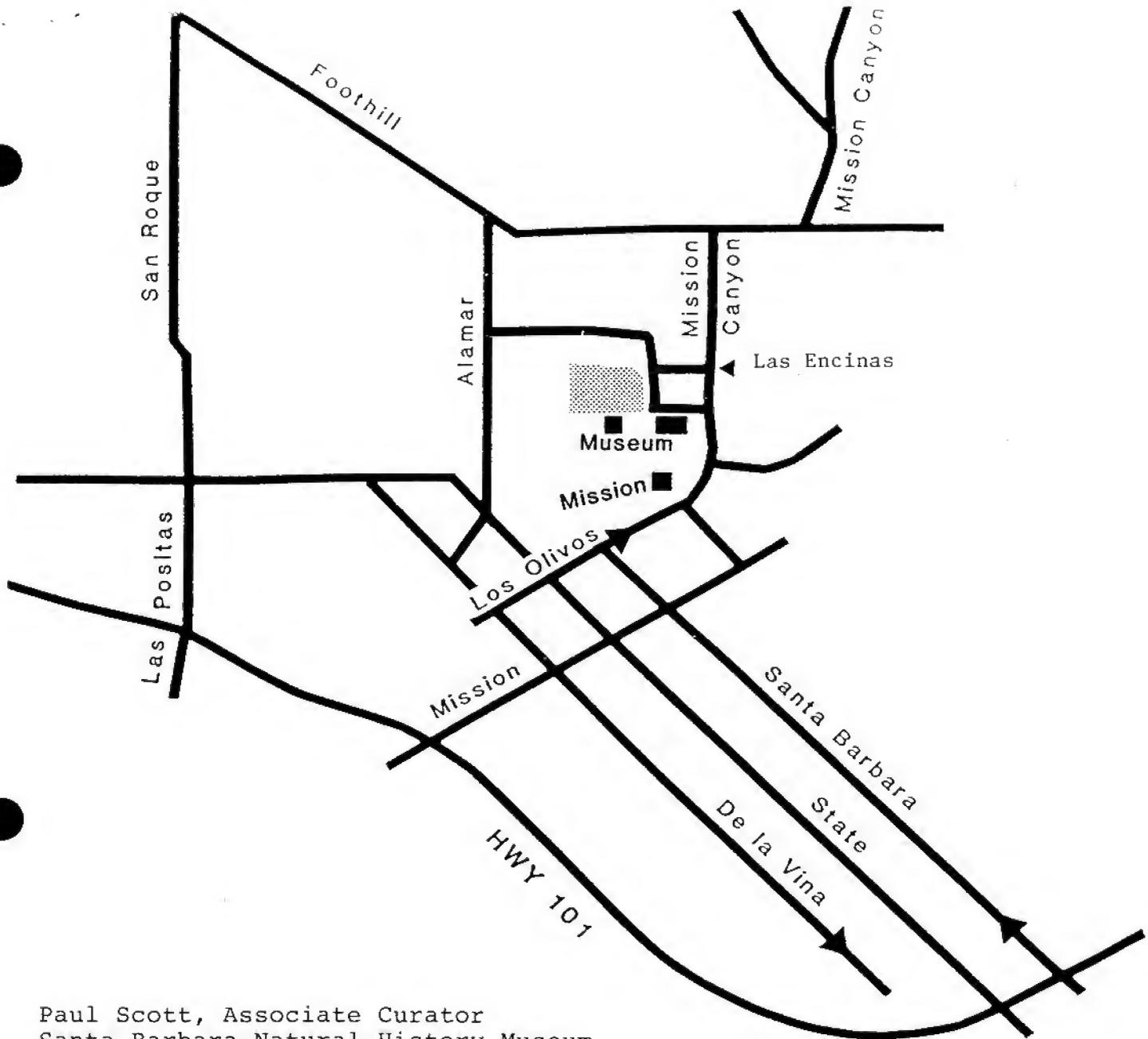
SCAMIT Picnic: Start thinking about the SCAMIT picnic tentatively scheduled for August, 1991. We need to find a new site to hold the picnic. Unfortunately the price for a reservation at Doheny State Beach has increased substantially. If you have any suggestions for a new site for the picnic please contact Larry Lovell at the address listed above ("SCAMIT Officer Nominations").

Barnard Letter: A letter from Dr. J. Barnard thanking SCAMIT for the plaque and Hummingbird book presented at the Barnard Amphipod Workshop has been included in this newsletter.

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

SCAMIT Officers:

President	Ron Velarde	(619) 226-0164
Vice-President	Larry Lovell	(619) 945-1608
Secretary	Ross Duggan	(619) 226-8175
Treasurer	Ann Martin	(213) 648-5317

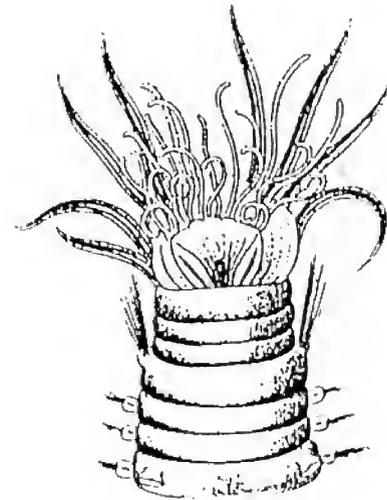


Paul Scott, Associate Curator  
Santa Barbara Natural History Museum  
2559 Puesta Del Sol Road  
Santa Barbara, CA  
(805) 682-4711

Directions from the south to the Santa Barbara Museum

- 1) Proceed north on US 101 to Santa Barbara, turn right at the first signal (Santa Barbara St.).
- 2) Proceed up Santa Barbara St. about 3 miles, turn right on Los Olivos.
- 3) Go past the Mission, bear left at the "Y", proceed about half a mile.
- 4) Turn left on Las Encinas, turn left on Puesta del Sol, turn right into Museum parking lot.
- 5) Invertebrate Zoology is on the west side of the new Collection and Research Center (past the whale, west side of parking lot).

4 TH INTERNATIONAL  
POLYCHAETE  
CONFERENCE



A N G E R S  
F R A N C E  
I 9 9 2

FIRST ANNOUNCEMENT

4 TH INTERNATIONAL POLYCHAETE CONFERENCE  
ANGERS, 1992

(Preliminary Registration form)

NAME .....

ADDRESS .....

TITLE OF PAPER (Provisional) .....

TITLE OF POSTER (Provisional) .....

MEALS (lunch)	Yes	No	Number of days :
CONFERENCE -	Yes	No	Number of persons :
BANQUET			
DORMITORY	Yes	No	Number of persons :
HOTEL	Yes	No	Number of persons :

EXCURSIONS

• Mid-conference

Bourgneuf Bay-Island of Noirmoutier :  
Châteaux de la Loire :

• Post-conference

Mont St Michel Bay :

Other .....

Return to : Patrick GILLET  
Laboratoire d'Ecologie Animale - I.R.F.A.  
3 Place A. Leroy  
49008 ANGERS CEDEX 01 - FRANCE

Please fill out the registration form and return it to me by the end of February 1991. Only those returning this form will receive the second announcement.

Titles of papers and posters are not need be final at this time. It's suggested to submit papers as a floppy disk (Word software is suitable).

Before the conference, it will be possible to visit french Marine Stations (list in the second announcement).

Last three conferences were successful, we hope to see you in Angers in 1992 and wish you a nice stay in France.

**Patrick GILLET**  
On behalf of the French organizing Committee

Laboratoire d'Ecologie animale  
Institut de Recherche Fondamentale et Appliquée  
IRFA-UCO, 3 Place A. Leroy, 49008 ANGERS Cedex 01 - FRANCE  
Phone : 41 81 66 89 - Fax : 41-81-66-09

4 TH INTERNATIONAL  
POLYCHAETE CONFERENCE

ANGERS, 1992  
(July 26 - August 2, 1992)

FIRST ANNOUNCEMENT

It has been decided during the third Polychaete Conference in Long Beach in August 1989 to hold the fourth Conference in Angers in 1992.

During the meeting field trips will be planned to the Bourgneuf Bay and to the Island of Noirmoutier (by Y. Gruet), to the Châteaux de la Loire (by P. Gillet) and to the Mont St Michel Bay "In the steps of the first observers" (by C. Retière) depending upon your interest.

liminary schedule :

mes :

- Taxonomy and comparative morphology.
- Biogeography and population genetics.
- Biology of populations.
- Culture, exploitation, and commercial value.
- Reproduction and larval biology.
- Cytophysiology, cytotoxicology and endrocrinology.

s :

Sunday July 26	Arrivals in Angers.
Monday July 27	Scientific session. Arrange posters. "Reception".
Tuesday July 28	Scientific session. First poster session.
Wednesday July 29	Mid-conference excursions to the Bourgneuf Bay or Châteaux de la Loire.
Thursday July 30	Scientific session. Second poster session. After dinner meeting : Exploitation and commercial value of polychaetes.
Friday July 31	Scientific session . Conference banquet.
Saturday August 1	Scientific session in the morning. Coaches leave Angers about 2 pm for excursions.
Sunday August 2	Excursions to the Mont St Michel Bay or Island of Noirmoutier.

Accomodations

(all prices in French Francs, 1 US \$ = 5 FF, estimated in 1990)

- Registration \$ 160 800 FF (includes Proceedings of the conference)
- Meals \$ 100 lunch at the Center of Congress (for 5 meals :  
500 FF, each 100 FF, included : wine, coffee  
and taxes.)
- Dormitory \$ 12 60 FF per person (no meals included)
- Hotels \$ 40-80 200 FF to 400 FF (no meals included)
- Excursions . Mid-conference to Bourgneuf Bay and Island  
of Noirmoutier : *Ficopomatus* reefs.  
Price 300 FF per person (includes coach  
transportation, entrance to "Ecomusée", lunch  
and dinner, extra drinks for dinner)  
limited to 50 persons.  
  
. Mid-conference to the Châteaux de la Loire :  
Chenonceaux and Chambord.  
Price 300 FF per person (includes coach  
transportation, entrance to Châteaux, lunch  
and dinner)  
limited to 100 persons  
  
. Post-conference to the Mont St Michel Bay  
Price per person not yet defined (includes coach  
transportation, dormitory, lunch and dinner)  
number of persons not fixed.

**General Information**

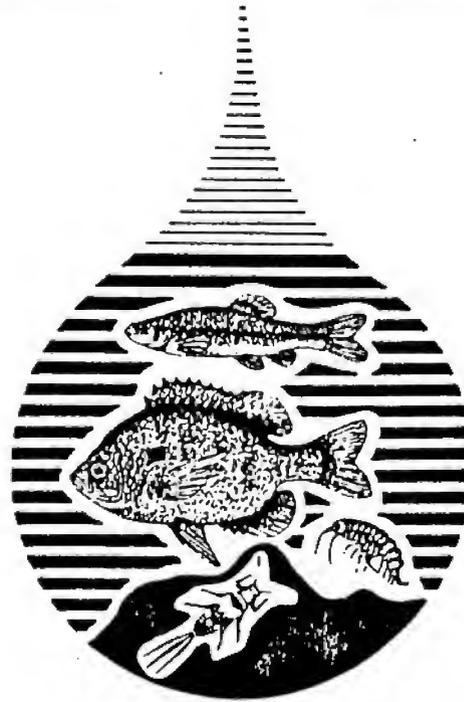
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**Midwest Pollution Control Biologists Meeting**

**ENVIRONMENTAL INDICATORS:  
MEASUREMENT AND ASSESSMENT  
ENDPOINTS**

Chicago, Illinois

March 19 - 22



**Enrollment:** \_\_\_\_\_

To enroll, mail the attached enrollment form with a check payable to ICF Kaiser Engineers to: ICF Kaiser Engineers, One East Wacker Drive, Suite 2700, Chicago, Illinois 60601, Attn: 1991 MPCB Meeting. For further information, call Helen Taylor at (312) 321-3785. Enrollment forms must be received by March 1, 1991 if you wish to receive session abstracts and a detailed itinerary prior to the meeting. Registration at the meeting will be accepted.

**Fees:** \_\_\_\_\_

A registration fee of \$30.00 (\$20.00 for students) covers program materials, break refreshments, a luncheon on March 20, and a copy of the proceedings. Registration for the special evening dinner/speaker at Chicago's Shedd Aquarium on March 20 is \$35.00. This special event is optional.

**Location:** \_\_\_\_\_

Hyatt Lincolnwood  
4500 West Touhy Avenue  
Lincolnwood, Illinois 60646  
(708) 677-1234 FAX: (708) 677-0234

**Accommodations:** \_\_\_\_\_

Rooms have been reserved at discounted rates at the Hyatt Lincolnwood. Please call (708) 677-1234 by March 5 to secure reservations. Please note on the enrollment form at the time of registration if you are disabled and/or desire special accommodations.

State government rate is \$63.60 (tax included for single or double). Non-government rate is \$75.30 (tax included for single or double).

**Sponsored By:** \_\_\_\_\_

USEPA Region 5  
USEPA Office of Research and Development (ORD)  
Northeastern Illinois University  
Roy F. Weston, Inc.

SSMQA  
U.S. EPA - Region 5  
536 S. Clark, 10th Floor  
Chicago, Illinois 60605

Lawrence Lovell  
S. Cal. Assoc. of Marine &  
Invertebrate Taxonomists  
1036 Buena Vista Drive  
Vista, CA 92083



## Tuesday, March 19

Morning: \_\_\_\_\_

- 8:30 - 9:30 Early Registration
- 9:00 - 5:00 Workgroup A: Regional Water Monitoring Coordinators Meeting (government-restricted)  
*David Vana-Miller, USEPA Region 8*
- 9:00 - 3:00 Workgroup B: State-Regional Biomonitoring Task Force (government-restricted)  
*Mike Henebry, Illinois EPA*  
*Cornelius Weber, USEPA-EMSL*
- 3:30 - 5:30 Workgroup C: Effluent Toxicity Testing Government Affairs Session (open)  
*Claudia Johnson-Schultz, USEPA Region 5*  
*Cornelius Weber, USEPA-EMSL*

Evening: \_\_\_\_\_

- 7:30 MPCB Social  
Hyatt Lincolnwood-Cash Bar

## Wednesday, March 20

Morning: \_\_\_\_\_

- 7:30 - 8:30 Registration
- 8:30 - 8:45 Welcoming Remarks  
*Ralph Bauer, Deputy Administrator, USEPA Region 5*
- 8:45 - 9:45 Keynote Address  
*James Karr, Virginia Polytechnic Institute and State University*
- 9:45 - 10:00 Break
- 10:00 - 10:30 Environmental Indicators  
*Kim Devonald, USEPA Office of Policy, Planning and Evaluation*
- 10:30 - 11:00 Status and Trends Assessment: EMAP  
*Steve Paulsen, USEPA ORD*
- 11:00 - 11:30 USGS's NAWQA Program  
*Mike Meador, US Geological Survey*
- 11:30 - Noon USFWS's Long-term Resource Monitoring Program  
*Ken Lubinski, USFWS*

Afternoon: \_\_\_\_\_

- Noon - 1:20 Luncheon (Buffet)
- 1:20 - 2:40 Nonpoint Source Assessments  
Session Chair: *James Gammon, DePaul University*
- 2:40 - 3:00 Break
- 3:00 - 4:40 Nonpoint Source Assessments (continued)

4:40 - 5:10 Poster Session

Evening: \_\_\_\_\_

5:30 MPCB Shedd Aquarium Banquet (optional)

Chicago's Shedd Aquarium will open exclusively for MPCB meeting attendees. Self-guided tours and dinner will be available. During dinner, Dr. Charles E. Herdendorf will speak on the topic "Treasures of the Lost Voyage: The S.S. Central America Shipwreck." Attendance is optional, and an additional registration fee must be paid in advance to attend this event. Transportation will be provided for meeting participants staying at the Hyatt Lincolnwood.

## Thursday, March 21

Morning: \_\_\_\_\_

- 8:00 - 9:40 Ambient/Effluent Toxicity  
Session Chair: *Mike Henebry, Illinois EPA*
- 8:00 - 9:40 Biological Assessment and Criteria  
Session Chair: *Thomas Simon, USEPA Region 5*
- 9:40 - 10:00 Break
- 10:00 - Noon Morning Sessions (continued)
- Afternoon: \_\_\_\_\_
- Noon - 1:00 Lunch (on your own)
- 1:00 - 5:00 Workshops and Workgroups
- Workshop I: Sediment Toxicity Testing  
*Marcia Nelson & James Coyle, USFWS; Allen Burton, Wright State University; Rob Wood, USEPA-Permits*
  - Workshop II: Introduction to Oligochaete Taxonomy  
*Kurt Stimpson, Roy F. Weston, Inc.*
  - Workgroup D: Biological Criteria Development (government-restricted)  
Group Leaders: *Chris Yodor, Ohio EPA; James Karr, VPI; George Gibson, USEPA Office of Water; Thomas Simon, USEPA Region 5*
  - Workgroup E: EMAP Coordination/Integration with Surface Water Programs (government-restricted)  
Group Leaders: *Steve Paulsen, USEPA ORD; Lou Bluma, USEPA Region 5; Steve Hedtke, USEPA ORD*

## Friday, March 22

Morning: \_\_\_\_\_

- 8:00 - Noon
- Workshop III: Field Trip to Des Plaines River for Wetland Demonstration Project  
*Donald L. Hey, Director, Wetlands Research Incorporated, Inc., Chicago, IL*
  - Workshop I: Sediment Toxicity Testing (continued)
  - Workshop II: Introduction to Oligochaete Taxonomy (continued)
  - Workgroup D: Biological Criteria Development (continued)

## 1991 Midwest Pollution Control Biologists Meeting ENROLLMENT FORM

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

Zip: \_\_\_\_\_ Phone: (\_\_\_\_) \_\_\_\_\_

(Check the appropriate boxes below:

I would like to register for the 1991 MPCB Meeting and luncheon on March 20.

I would like to register for the 1991 MPCB Meeting, luncheon, AND the special evening at Chicago's Shedd Aquarium.

Check the boxes of the workshops/workgroups you plan to attend:

Workshop I on March 21 and 22 (Thursday 1-5, Friday 8-Noon).

Workshop II on March 21 and 22 (Thursday 1-5, Friday 8-Noon).

Workshop III on March 22 (Friday 8-Noon).

Workgroup C on March 19 (Tuesday 3:30-5).

If you plan to attend a workgroup session restricted to government employees, please indicate below which workgroup(s) you will attend.

A       D  
 B       E

Fees: \_\_\_\_\_

\$30.00 registration fee includes luncheon on March 20

\$20.00 student registration fee

\$35.00 additional fee for the banquet at Chicago's Shedd Aquarium on March 20 (optional)

Make checks payable to ICF Kaiser Engineers.

Confirmation of your registration will be sent to you upon receipt of this form and registration fee. In early March 1991 you will receive a packet of information which will include session abstracts and a detailed itinerary. If your reservation is received after March 1, you may pick up your information packet at the meeting. Registration at the meeting will be accepted.

Mail to: ICF Kaiser Engineers  
One E. Wacker Drive, Suite 2700  
Chicago, IL 60601  
Attn: 1991 MPCB Meeting

SMITHSONIAN INSTITUTION

WASHINGTON, D. C. 20560

NHB-163

22 Jan 1991

Dear Larry:

The magnificent "Hummingbirds of the Caribbean" arrived 3 days ago and my wife and I spent a wonderful weekend enjoying the pictures and data and recalling our pleasure in seeing some of those birds over the past 6 decades. Charline was born in Panama and often visited Caribbean places in her childhood and I have visited a half dozen places myself this past decade. What a pleasure and thanks so much for this wonderful gift.

We also sincerely appreciate the plaque you gave me in Los Angeles. I am keeping that on my office wall at home--much as I'd like to display it at Smithsonian, we have had so many thefts recently I would fear for its safety there. It is such a pleasure to come to the west coast and be with SCAMIT people and I learn so much from the workshops myself that I look forward to the visit each time. Just let me know when I can help and please have members write or phone when they have problems.

Most sincerely,



J.L. Barnard



**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
San Pedro, California 90731

March, 1991

Vol. 9, No. 11

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**NEXT MEETING:** Tharyx  
**GUEST SPEAKER:** Tony Phillips, City of Los Angeles  
**DATE:** Monday, April 15, 1991, 9:30 A.M.  
**LOCATION:** Allan Hancock Foundation, Room 30  
University of Southern California

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**MINUTES FROM MEETING ON March 11, 1991**

Paul Scott, Santa Barbara Museum of Natural History, hosted this month's SCAMIT meeting covering the Nuculanidae of southern California. The meeting provided an excellent opportunity to describe some of the characters commonly used to identify nuculanids. Paul also discussed some of the inappropriate characters, including tooth counts and shell shape. Tooth counts are a function of size, and shell shape can be quite variable due to substrate type.

A partial checklist of southern California Nuculanoidea and voucher sheets for 8 species of Nuculana will be included in a future SCAMIT newsletter.

Malacological Meetings: The American Malacological Union and the Western Society of Malacologists will have a combined meeting June 30 - July 5, 1991 at the Clark Kerr Campus, University of California, Berkeley. The announcement has been included in this newsletter.

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CHEVERON USA, AND TEXACO INC.

SCAMIT newsletter is not deemed to be a valid publication  
for formal taxonomic purposes.

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SCAMIT Elections: It's that time of year again to choose the SCAMIT officers for the 1991-1992 year. The following members have accepted the nominations for the each of the offices.

President	Ron Velarde
Vice-President	Larry Lovell
Secretary	Kelvin Barwick
Treasurer	Ann Martin

The ballots are included in this newsletter. Return your ballot to the Vice-President, Larry Lovell by April 15, 1991.

Next Year's Agenda: If you have any suggestions for topics or workshops for the 1991 - 1992 SCAMIT meetings, please submit them via the enclosed ballot to the vice-president by April 15, 1991. The executive committee will be scheduling speakers for next year very soon.

Discovery Reports: Enclosed within this newsletter is an order form for acquiring reports from the Discovery Expeditions. The report consists of 187 papers in 37 volumes published between 1929 and 1980. To order, write to Pauline Simpson at the following address:

Pauline Simpson  
IOSDL Wormley  
Godalming GU8 5UB  
Surrey, UK

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

SCAMIT Officers:

President	Ron Velarde	(619) 226-0164
Vice-President	Larry Lovell	(619) 945-1608
Secretary	Ross Duggan	(619) 226-8175
Treasurer	Ann Martin	(213) 648-5317

## Candidate Biographies

### PRESIDENT

Ron Velarde

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

### VICE-PRESIDENT

Larry Lovell

Larry is currently a private consultant and Vice-President of SCAMIT. Prior to his independent status, he was employed at Point Loma Wastewater Treatment Facility (City of San Diego). He also worked for MEC Analytical Systems for 12 years serving as lab supervisor since 1983. He worked under the guidance of Dr. Kristian Fauchald in the Worm Room at the Allan Hancock Foundation in 1975 and 1976 on the BLM project. He earned his B.S. in Biology from the University of South Carolina in 1973. His primary taxonomic interest is with the polychaetes, particularly paraonids, but is also working with other taxa.

### SECRETARY

Kelvin Barwick

Kelvin graduated from Texas A&M University in 1983 with a B.S. in Wildlife and Fisheries Sciences. He worked for a private consulting firm in Texas for two years as a marine invertebrate taxonomist. He also worked at MEC Analytical Systems Inc. of Carlsbad, California for two and one half years, where he specialized in molluscan taxonomy. He is presently working for the City of San Diego as a Marine Biologist. His main interest is in molluscan taxonomy.

### TREASURER

Ann Martin

Ann presently is the Treasurer for SCAMIT and has held this position since SCAMIT was founded. Ann is a member of the water biologist staff at the Hyperion Treatment Plant where she



specializes in the identification of polychaetes and amphipod crustaceans. Prior to working at Hyperion, Ann was a member of the laboratory staff at the County Sanitation Districts of Orange County. She worked there for nearly 10 years, reaching a position of senior laboratory and research analyst. She received her B.S. from California State University, Long Beach in Marine Biology in 1974 and her M.S. from the same university in 1982. Her thesis research pertained to polychaete bioassays.

Ballot for 1991-1992 Officers  
(Vote for one nominee per office)

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

\_\_\_\_\_ Ron Velarde

\_\_\_\_\_ Write-in:

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

\_\_\_\_\_ Larry Lovell

\_\_\_\_\_ Write-in:

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

\_\_\_\_\_ Kelvin Barwick

\_\_\_\_\_ Write-in:

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

\_\_\_\_\_ Ann Martin

\_\_\_\_\_ Write-in:

1991-1992 SCAMIT MEETING TOPICS

Please suggest any topics you deem worthy of a SCAMIT meeting.

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\* You may vote by mailing your ballot to Larry Lovell at the following address by April 15, 1991.

Larry Lovell  
1036 Buena Vista Dr  
Vista, CA 92083





**57TH ANNUAL MEETING  
THE AMERICAN MALACOLOGICAL UNION  
BERKELEY, CALIFORNIA  
JUNE 30 - JULY 5, 1991**

The 57th annual meeting of the American Malacological Union will be a combined meeting with the Western Society of Malacologists, held June 30 - July 5, 1989 at the Clark Kerr Campus of the University of California, Berkeley. The conference center provides a comfortable and convenient complex of meeting facilities, adjacent dining facilities, and guest accommodations in a Spanish style complex separated by lawns, enclosed gardens and courtyards. The Campus is nestled into 43 acres overlooking San Francisco Bay and stretching upward into the Berkeley Hills.

The conference center will offer a special package of meals and accommodations, in a combination of residence halls and suites. A variety of hotel and motel housing will be available to those who wish to stay off campus. The Bay Area is filled with diverse cultural and natural history attractions as well as recreational and sight-seeing opportunities. It is famous for its restaurants and fine cuisine. Berkeley summers are free of rain and are regularly cooled (sometimes chilled) by the renowned San Francisco Fog.

Three symposia are planned:

**MARINE BIVALVE RESEARCH IN THE NEXT CENTURY,  
A REVIEW OF THE CURRENT STATE OF OUR KNOWLEDGE AND DIRECTIONS FOR THE FUTURE**  
(Organized by Drs. Paul H. Scott, Brian Morton, and Eugene V. Coan)

**MOLLUSCAN TAPHONOMY AND PALEOECOLOGY**  
(Organized by Drs. Carole S. Hickman and Michael P. Russell)

**MOLLUSCAN BIOGEOGRAPHY OF THE PACIFIC BASIN**  
(Organized by Drs. David R. Lindberg and Geerat J. Vermeij)

In addition to the symposia, contributed papers, and poster presentations, scheduled events will include field trips, an outdoor barbecue, a joint AMU/WSM auction, a dessert reception at the Museum of Paleontology, and a 4th of July Banquet in the Great Hall of the Faculty Club. Fossil and Recent mollusk collections in the University of California Museum of Paleontology and the California Academy of Sciences in San Francisco will be available to meeting participants before, during, and after the meeting.

For further information please contact:

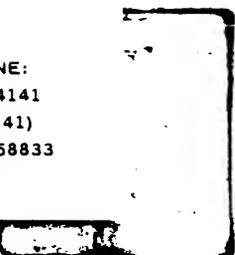
Carole S. Hickman  
President, AMU  
Museum of Paleontology  
University of California  
Berkeley, CA 94720

Telephone (415) 842-3429  
FAX (415) 642-1822



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Sale of DISCOVERY REPORTS - August 1990

STATION LISTS

<i>Vol</i>	<i>Pages</i>	<i>Title</i>	<i>Price</i>
1	1-140	Discovery Investigations Station List 1925-1927	£4
3	1-132	Discovery Investigations Station List 1927-1929	£4
4	1-232	Discovery Investigations Station List 1929-1931	£6
21	1-226	Discovery Investigations Station List 1931-1933	£6
22	1-196	Discovery Investigations Station List 1933-1935	£6
24	1-196	Discovery Investigations Station List 1935-1937	£6
24	197-422	Discovery Investigations Station List 1937-1939	£6
25	143-280	Station List RRS "William Scoresby" 1931-1938	£4
26	211-258	Discovery Investigations Station List RRS "William Scoresby" 1950	£3
28	299-398	Discovery Investigations Station List 1950-1951	£3
Complete set of Station Lists (total £48 less 20% discount)			£38.40

EQUIPMENT

<i>Vol</i>	<i>Pages</i>	<i>Author/Title</i>	<i>Price</i>
18	105-120	MARR: On the operation of plankton nets	£3
29	229-244	HERDMAN & PEMBERTON: The reliability of deep-sea reversing thermometers	£3

GEOGRAPHY AND GEOLOGY

<i>Vol</i>	<i>Pages</i>	<i>Author/Title</i>	<i>Price</i>
3	133-198	TYRELL et al: The South Sandwich Islands	£7
23	37-102	TYRELL: Report on rocks from West Antarctica and the Scotia Arc	£6

HYDROGRAPHY AND HYDROLOGY

<i>Vol</i>	<i>Pages</i>	<i>Author/Title</i>	<i>Price</i>
15	125-152	DEACON: Note on the dynamics of the Southern Ocean	£4
19	1-120	CLOWES: Phosphate and silicate in the Southern Ocean	£10

19	285-296	MACKINTOSH & HERDMAN: Distribution of the pack-ice in the Southern Ocean	£4
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**PINNIPEDIA**

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19	121-164	HAMILTON: A second report on the southern sea lion, <i>Otaria byronia</i> (de Blainville)

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9	351-372	WHEELER: On the stock of whales at South Georgia
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Southern California Association of  
Marine Invertebrate Taxonomists

3720 Stephen White Drive  
San Pedro, California 90731

April, 1991

Vol. 9, No. 12

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NEXT MEETING:           Bryozoan Workshop

GUEST SPEAKER:         Bill Banta, American University,  
Department of Biology,  
Washington D.C.

DATE:                    Monday & Tuesday, May 13 & 14, 1991,  
9:30 A.M.

LOCATION:                 Cabrillo Marine Museum  
San Pedro, CA

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MINUTES FROM MEETING ON April 15, 1991

Tharyx: Tony Phillips, City of Los Angeles discussed the polychatae genus Tharyx. The type species of Tharyx, T. acutus has recently been found to have sickle shaped spines with knob-shaped tips in posterior setigers (Dr. James Blake, in press). Species having only capillary setae, including all of the southern California Tharyx, must be referred elsewhere.

There were four species of Tharyx discussed at the SCAMIT meeting. Specimens of Tharyx that have serrated capillary neurosetae in posterior segments include both T. tessellata and a new species. Tharyx that lack the serrated neurosetae include T. monilaris and another new species.

Tony is completing the SCAMIT voucher sheets for these animals which should be included in a newsletter in the near future.

FUNDS FOR THIS PUBLICATION PROVIDED IN PART BY ARCO FOUNDATION,  
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SCAMIT newsletter is not deemed to be a valid publication  
for formal taxonomic purposes.

S.C.A.S. Meetings: The Southern California Academy of Sciences meetings are scheduled for Friday and Saturday, May 10th & 11th, 1991 at the Los Angeles County Natural History Museum. An announcement and schedule of the symposia has been included in this newsletter.

Job Announcement: The Cabrillo Marine Museum is hiring a part-time position for a Museum Assistant. The announcement is included in this newsletter.

Malacological Meetings: The American Malacological Union and the Western Society of Malacologists will have a combined meeting June 30 - July 5, 1991 at the Clark Kerr Campus, University of California, Berkeley. The announcement was included in the March newsletter.

SCAMIT Elections: The election results are in and the suspense is over! The following members were elected by a landslide to each of their respective offices.

President	Ron Velarde
Vice-President	Larry Lovell
Secretary	Kelvin Barwick
Treasurer	Ann Martin

Next Year's Agenda: If you have any suggestions for topics or workshops for the 1991 - 1992 SCAMIT meetings, please forward them to the vice-president, Larry Lovell. The executive committee will be scheduling speakers for next year very soon.

Larry Lovell  
1036 Buena Vista Dr  
Vista , CA 92083

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

SCAMIT Officers:

President	Ron Velarde	(619) 226-0164
Vice-President	Larry Lovell	(619) 945-1608
Secretary	Kelvin Barwick	(619) 226-8175
Treasurer	Ann Martin	(213) 648-5317



## GENERAL INFORMATION

**PARKING:** Since sessions are scheduled chiefly in Taper Hall of Humanities and Von Kleinsmid Center, the most convenient lots to use are Parking Structures C (entrance 3, Figueroa @ 35th Street) or D (Gate 4, on Jefferson West of Figueroa). All-day parking: \$5.00.

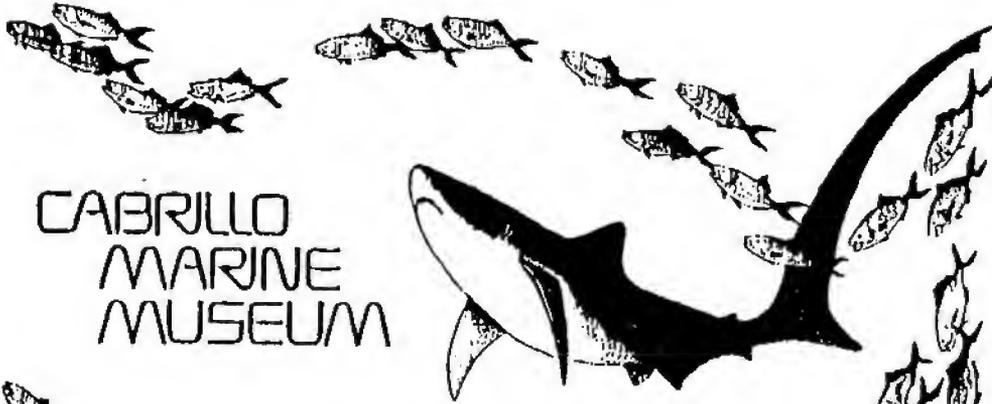
Across Exposition, the Five-Star lot on the west side of Menlo offers day long parking at \$1.00; but it's a bit of a walk from there to the far side of campus.

**REGISTRATION:** Opens 8:00 A.M. at Von Kleinsmid Center. Those who have pre-registered should check in at the Pre-registration desk. For those registering at the meeting, fees are: professional and/or non-student: \$35.00; college student, \$15.00. (No registration fee for high school students.) Banquet tickets: \$25.00 (though because of the need for advance reservations, very few banquet tickets may be available at the desk).

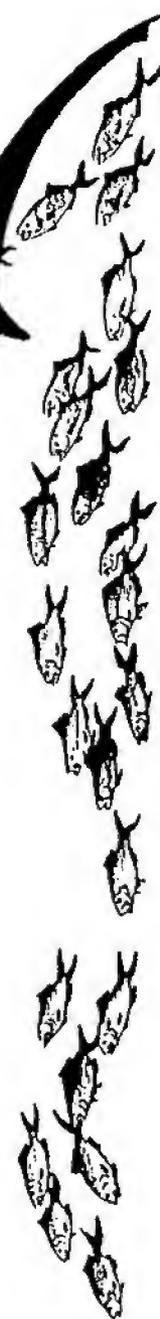
**SLIDES:** These should be given to the projectionist in the room where the paper will be delivered. Morning speakers should deliver their slides by 8:30 A.M.; afternoon speakers by 12:30 P.M. Please bring your slides, in correct order, in your own tray or carousel and have your name on it.

**AWARDS:** Awards for the best student papers at college level include the Durham in Vertebrate Zoology, the ARCO in Environmental Science, and four SCAS Awards in open categories. Winners will be announced at the Banquet, Saturday evening, May 11, at Town & Gown.

- \* **THROUGHOUT THIS PROGRAM**, an asterisk indicates a student paper to be considered for award. Only single-authored student papers are eligible.



# CABRILLO MARINE MUSEUM



## **PART-TIME JOB: MUSEUM ASSISTANT** (\$7.29)

### **RESPONSIBILITIES:**

Assist Curator in the preservation, registration, and care of specimens.

Assist Curator in the maintenance of library materials.

Assist Curator in the installation of temporary exhibits.

### **QUALIFICATIONS:**

A general knowledge of marine biology, preferably southern California.

Upper division standing or a Bachelor's degree in biology.

Ability to speak and write clearly.

Applicants must be at least 19 years of age and possess a valid California driver's license.

**WORK SCHEDULE:** 10-20 hours per week, between 8 am and 5 pm, Monday through Friday. Weekend or evening hours may be required occasionally.

**APPLICATION:** Please submit resume and name, address, and phone number of two references to: Cathy Crouch, 3720 Stephen White Drive, San Pedro, CA 90731. The most qualified applicants will be invited for an interview. For additional information, call Cathy Crouch at 213/548-7563.

**DEADLINE:** May 17, 1991.

Notification Date: 4-26-91.

