



**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
San Pedro, California 90731

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

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:

December 27 - 30, 1990: Western Society of Naturalists,  
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

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Mary Adams-Wiley  
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104 Sirus 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 it's 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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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
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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.

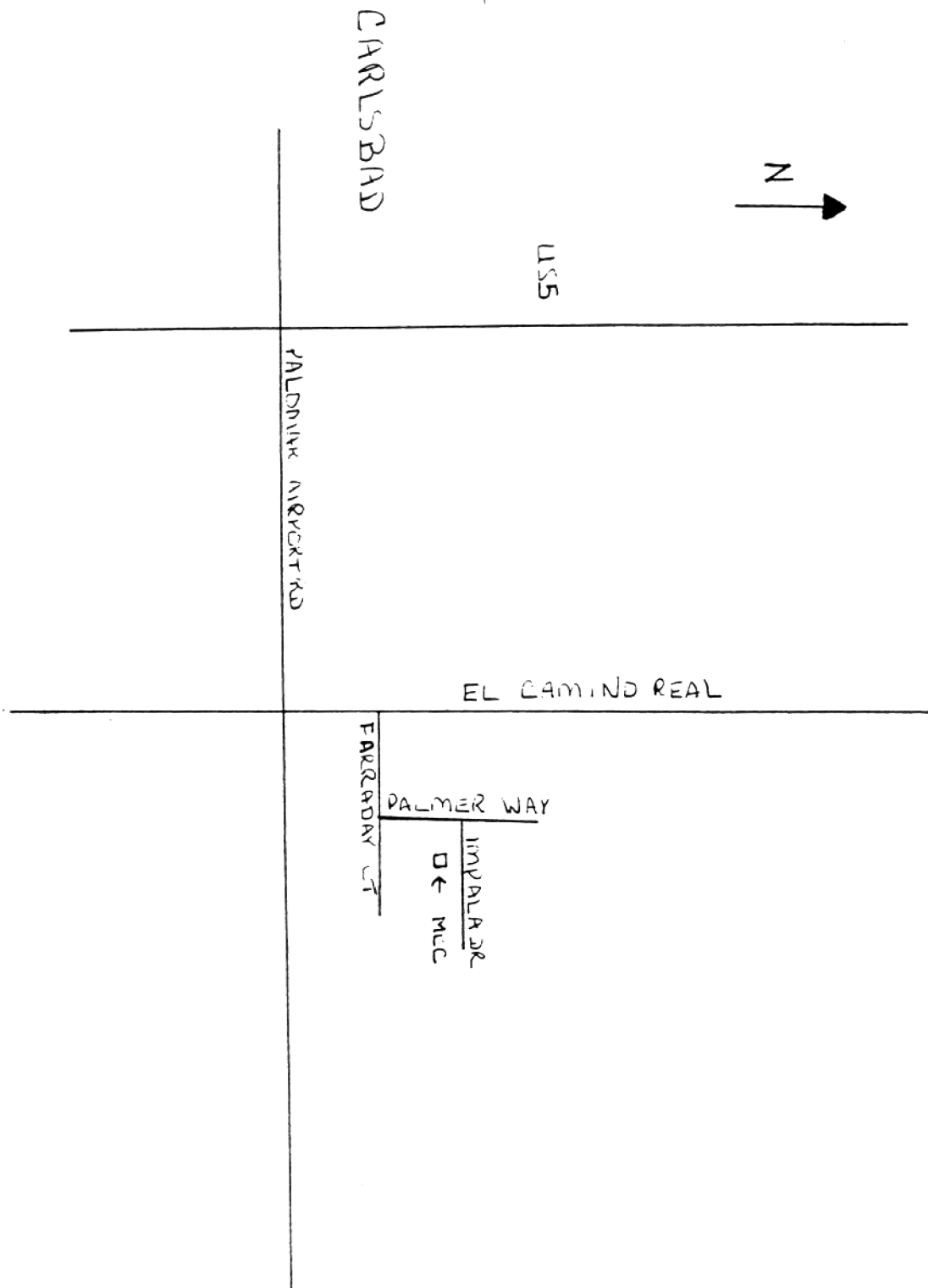
Distribution: Only one station at Encina Outfall, about 47 meters deep. 20 colonies collected. Spring 1990

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)

From the AMERICAN FISHERIES SOCIETY

**Common and Scientific Names of Aquatic Invertebrates from the  
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American Fisheries Society Special Publication 17

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