

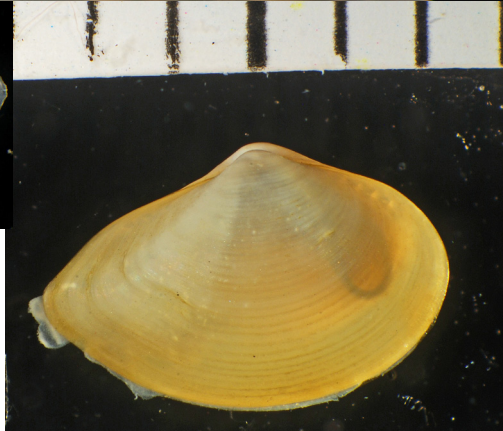
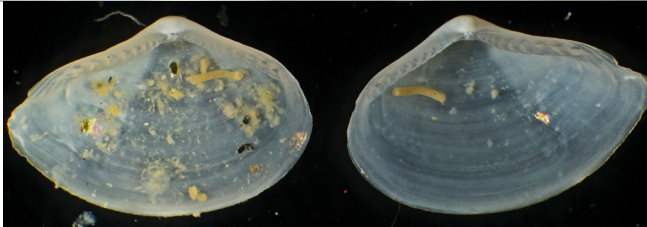
SOUTHERN
CALIFORNIA
ASSOCIATION OF
MARINE
INVERTEBRATE
TAXONOMISTS



May–June, 2016

SCAMIT Newsletter

Vol. 35 No. 1



Ledella fiascona (Dall 1916)
 B'13 station 9041, July 2013, 742m
 Identification by P. V. S, June 2016
 Photos by W. Enright, CSD

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

Publication Date: January 2017

*There was no meeting in May 2016***20 JUNE 2016, FUTURE OF SCAMIT, SBMNH**

Attendees: Kelvin Barwick (OCS D); Tony Phillips, Dean Pasko (Private Consultant); Ron Velarde (CSD); Paul Valentich-Scott (SBMNH); Larry Lovell (LACSD).

Following the unfortunate cancellation of a scheduled Morphometrics Workshop the first day of this two day SCAMIT meeting, President Larry Lovell took the opportunity to employ a small group of long-time

SCAMITeers to discuss SCAMIT's future. He opened the discussion by asking some general questions: What is the State of SCAMIT? What are our strengths and weaknesses? How can we improve SCAMIT and promote better attendance and participation? Does the Taxonomic Database Tool add value? Are we (SCAMIT) trying to do too much? His general thoughts on these topics were outlined in a short handout, along with a slightly updated discussion dealing with the demise of taxonomy and taxonomists, originally put forth by Dave Montagne in the mid-90s. The latter document discussed the dearth of trained taxonomists who could take the place of the many practicing SCB workers who would be soon retiring. Think Tom Parker, Dan Ituarte, Doug Diener, Dorothy Norris, Dave Montagne, Bob and Cheryl Brantley, Jim Roney, to name just a few.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

Kelvin raised the issue of meeting topics, commenting that our original meetings were focused on animals, unknowns. These initial meetings slowly evolved into workshops requiring many hours of preparation. That change likely contributed to the difficulty of getting volunteers to lead meetings. In addition, these meeting were often directed towards those that were already knowledgeable in the subject but often went over the head of the new taxonomists. This lead to some agreement that SCAMIT might benefit from having more specimen-oriented meetings rather than workshop-focused ones. Unfortunately, the logistics of specimen-oriented meetings can create problems of having an adequate number of microscopes and experts to discuss specimens. We would also have to take care to keep the meetings from devolving.

We had additional discussions about how to involve those who are new to taxonomy (or specimen identification). What is a good format that fosters involvement? SCAMIT used to employ the "mystery" dishes, basically sending staff back to laboratories with unlabeled specimens to identify, and return with them for discussion one month later. Such efforts allow individuals to learn by trial-and-error, by figuring out identifications on their own without having the results handed to them. Some of us have new taxonomists asking for the answer without showing much interest or regard for the process.

Kelvin suggested that a mentor program might help new members stay involved and active. They would at least have one person that they felt they could talk to without the fear of embarrassment.

Paul suggested that the "old guard" was at the table, but what we need was a meeting with the "new guard". This lead to the idea of a SCAMIT conference, which Kelvin said they did once when he was President. Such a conference, a larger general membership meeting, might provide an opportunity to get input from new and/or less active members. We discussed venues, such as the Cabrillo Museum and SCCWRP facility, and timing, possibly in September.



We also mused over a number of potential topics for a general membership conference, including SCAMIT's future, the status of the Treasury, the status of the Toolbox, management of the grant program, improving participation/attendance, meeting frequency and formats, officership, developing partnerships with other organizations (e.g., Southern California Coastal Water Research Project (SCCWRP), San Francisco Estuary Institute (SFEI), etc.)

Paul continued the discussion by suggesting that SCAMIT actively recruit people to become more involved with meetings and officership. We're all familiar with other professional organizations that do so, and Paul mentioned the Western Society of Malacologists (WSM) as one organization that uses the president-elect system to line-up leadership roles into the future to avoid the multi-year service that often happens in SCAMIT. Individuals that work for agencies are the best potential targets because they are often encouraged to participate in professional organizations, such as SCAMIT, and receive support for doing so. We tossed around the idea of creating a recruitment committee, similar to what is done with the WSM.

Some of these changes might require us to revisit the SCAMIT Constitution to allow for another office (President-elect) or allow the Vice-President to succeed the president. We could add such amendments with the next election in February 2017, based upon the results of the September meeting.

The idea of less frequent meetings, bi-monthly rather than monthly, was also discussed. We typically hold 10 meetings/year and perhaps having a meeting every other month would facilitate more cooperation/participation. We might have better luck with planning should we drop back on the frequency of our meetings.

The issue of SCAMIT's open access model, i.e., the fact that SCAMIT-generated materials are shared without restrictions was also discussed. In recent years, there has been a subtle change in workshop leadership from individuals predominantly supported by public agencies to those acting as private contractors. In particular, how does it work when material or taxonomic information is generated on contract? Is there an obligation to post these materials or are these materials the property of the author or the client?

Should SCAMIT make an effort to branch outward and develop partnerships with other agencies (e.g., holding a joint meeting with SFEI-associated taxonomists or City of San Francisco staff)? There is overlap in species reported among these different agencies and it might benefit all, including the State and Regional Water Quality Boards, who interpret and regulate environmental assessments. Ron then suggested that the Regional Board might have some reason for supporting SCAMIT due to SCAMIT's involvement in p-code and Species List maintenance.

After lunch, we dove into a discussion on the utility of the SCAMIT Taxonomic Database Tool. There are some difficulties with functionality. Larry asked whether or not SCAMIT should put more money or effort into the Database Tool. But this devolved into a discussion of the SCAMIT Species List itself, the backbone of the Database Tool, and List maintenance, how it cascades to Agencies, the State, and SCCWRP. We discussed the issue that SCAMIT, as a volunteer organization, cannot take on the idea of the List and the associated P-codes and Sediment Quality Objectives (SQO) values without compensation or support for the effort. It is one thing to maintain species lists and follow taxonomy, but another thing altogether to trace P-codes and SQO values back to species and make sure those lists are up-to-date. The fact that the State's current SQO is still based on SCAMIT Ed 5 is a case in point. Such a state of affairs ignores the changes in taxonomy and taxonomic resolution that have taken place in the past 10 years. These



responsibilities belong to the State, SCCWRP, and other organizations. We need to draw a bright line between what SCAMIT can deliver and what they have responsibility for. For example, the Southern Association of Freshwater Invertebrate Taxonomists (SAFIT) has an agreement with the State who provides SAFIT money for their efforts to maintain the freshwater list.

Three issues came out of the discussion: (1) how to database the Species List so that it can be maintained and distributed more easily; (2) how should SCAMIT be involved (or not) in the maintenance of the SQO tool, p-codes, etc., and (3) how does SCAMIT get reimbursed for its efforts. As a volunteer organization, SCAMIT should not be responsible for regulatory compliance. This led to a discussion of the nearly defunct BATMan group, but without resolution on what to do about it.

Paul brought up the idea of Symbiota (<http://symbiota.org>), which has a tool for maintaining lists of species and such. The site includes a number of on-line workshops and tools available for list management. He suggested that we review these workshops (<http://symbiota.org/docs/>) to get an idea of how Symbiota could be used to help in the maintenance of the SCAMIT Species List. Paul noted that his colleague at the museum had employed Symbiota to “suck up” a huge list of species and is currently using the tool for managing a very large species database. One current implementation of Symbiota is found at <http://www.invertebase.org/portal/index.php>, which includes data from a large consortium of institutions.

When the discussion came back around to the Taxonomic Database Tool, there was some agreement that the project might be biting off too much. It’s large, labor intensive, and requires regular maintenance. The future of the Database Tool is worthy of further discussion.

Towards the end of the day, we recognized that we had covered a large number of topics without coming to any specific conclusions. So to try to move the ball forward, we put together yet another set of assignments; hopefully a list that will see some follow through.

TO DO Assignments:

SCAMIT Species List Maintenance of names and name management: Kelvin, Paul, Wendy

- Convert to database
- Paul contact symbiota.org to discuss their ability to house the SCAMIT species list
- Translate current Ed11 list from Excel to Database

Toolbox updating: Tony, Dean, Greg Lyon

- Generate a “To Do” list from prior meetings
- Keep project moving forward, follow-up with those who volunteered to provide content, schedule future meetings

SCAMIT Ties to SQO, P-codes, and Regulators: Larry, Chris Beegan, EPA

- Follow-up with State Regulators about developing a SAFIT Model for SCAMIT

Generate a Survey Monkey prior to the September meeting

- [Erin Oderlin took on this task and distributed the survey via the general discussion list server.]



21 JUNE 2016, BOEM (LISA GILBANE) AND NEP NUDIPLEURA UPDATE (JEFF GODDARD), SBMNH

Attendees: Paul Valentich-Scott, Priscilla Akin (SBMNH); Larry Lovell, Don Cadien, Chase McDonald, Terra Petry (LACSD); Kelvin Barwick (OCSD); Ron Velarde, Megan Lilly (CSD); Cheryl Brantley (Retired); Tony Phillips, Dean Pasko (DCE); Lisa Gilbane (BOEM); Jeff Goddard (MSI, UCSB).

Business meeting: Larry opened the meeting by announcing to all in attendance about the cancellation of the morphometric workshop yesterday (Monday), and noted that the topic is one relevant to our organization. Kelvin and Paul chimed in that they had heard many morphometric talks at the recent Western Society of Malacologists meeting.

Larry then presented the results of the Monday discussion, “SCAMIT, The Next Generation” for the benefit of those in attendance.

The presentation generated more discussion of potential collaborations, particularly with the Washington Department of Ecology and the San Francisco Tiburon Laboratory, who frequently put together voucher sheets. Exchanging voucher sheets and occurrence information on a regular basis would likely provide fruitful discussion, potentially consolidate efforts, and bring about agreement or resolve differences in species identifications.

We also revisited the idea of a General Membership meeting in September to discuss the future of SCAMIT. Recognizing that SCAMIT is a volunteer organization, Lisa suggested that we needed to emphasize how SCAMIT benefits members and their jobs, and drive home the idea that SCAMIT has an impact on their job activities. Bringing the value of SCAMIT to the individual should be an important goal of the general meeting effort. As a point of contrast, we discussed the stories that Paul related the previous day about his experience in Europe where the lack of cooperation among competing taxonomic consultants limits data consistency across European waters. Unfortunately, the European taxonomists view their taxonomic resources and results as proprietary information and there isn't a mechanism or desire to share them.

Larry then introduced Lisa Gilbane, who began her presentation with a discussion of the Bureau of Ocean Energy Management (BOEM), which evolved out of a complicated history involving USGS, Bureau of Land Management, the Mineral Management Service, and the Gulf of Mexico Oil Spill.

BOEM (under one of its previous entities) was responsible for the 1975-78 Baseline surveys, as well as the Santa Maria Basin & Western Santa Barbara Channel survey and resulting MMS Atlas publications. They are currently pressing for another effort to perform a second deep water survey. The Smithsonian has a contract to house all the BOEM collections (historical and future). BOEM also works on the Multi-agency Rocky Intertidal Network (MARINE: pacificrockyintertidal.org). As a result of these varied surveys, incorporating many different taxonomists and entities, BOEM and MARINE face some of the same issues as SCAMIT relative to maintaining species lists and vouchers, and providing consistent taxonomic identifications. Lisa summarized some of MARINE's long term monitoring efforts, community monitoring, and rapid assessment projects. The data has been useful in studying the spread of disease across the marine environment, as well as the impact of urban runoff and oil spills. Lisa described the efforts associated with several oil spills (Platform Irene/Torch, Cosco Busan, Refugio) where the BOEM-sponsored collaborative work provided valuable data to understanding spill impacts.



These collaborative efforts have also benefited the establishment of Marine Protected Areas around the NEP. For example, about half of the MPA's designated along the central coast came out of MARINE's long-term monitoring sites.

Lisa is also working on developing a clean voucher collection. The collection and housing of the vouchers has been funded, including the collection of DNA tissue samples, but not the analysis of the DNA. In addition to documenting species occurrences and morphology, Lisa hopes to use survey vouchers to document shifts in species ranges. BOEM has a few more surveys planned going forward: Four sites in Fall 2016 in the SCB, three in Spring 2017 in Central California, and the remaining sites in Fall 2017 and Spring 2018.

Paul asked Lisa about their voucher database, which has an SQL base, but a Microsoft Access front end. All vouchers are housed in one data server (SQL), others submit data via Access, which are then uploaded and managed. BOEM is moving to the use of iPads for some data records in the field, and the use of Web-based forms for entering data.

Don asked if the BOEM effort will eventually be folded into the Surface Water Ambient Monitoring Program (SWAMP). Lisa was interested in this, but hadn't pursued it yet. Don's concern was that we could end up with two different reporting standards, BOEM's and SWAMP's.

The Marine Science Institute (MSI) and BOEM are cooperating on the California Oil Platform monitoring program. The program includes water quality monitoring and photographic invertebrate assemblage monitoring. Lisa showed some preliminary analysis of the oil platform assemblage data indicating changes with water temperature, depth, and region. The goals are to document existing patterns and trends, and prepare for the eventual monitoring of the decommissioned platforms.

Watersipora [Bryozoa; Gymnolaemata] are covering a majority of the space on oil platforms, and are invading the natural reefs in the Santa Barbara Channel. The question was whether the platforms were the vehicle for the spread of *Watersipora*, or is there another mechanism, such as the platform servicing vessels. *Watersipora* has spread from the bays and harbors to the offshore region and the Santa Barbara Channel in the past 20 years or so. There is also work being done on understanding the natural history, biology, and dispersal mechanisms of *Watersipora*.

With the conclusion of Lisa's very interesting presentation, we discussed making SCAMIT members available to help with identification of BOEM scraping samples. Lisa commented that no scrapings have been collected to date, but that they may do so this coming survey. But several persons with prior experience in the California Fish & Game Introduced Species Survey raised the caution flag as they had experienced many problems with the identification of the scrapings.

For additional information on BOEM, MARINE, and their efforts, please feel free to contact Lisa at lisa.gilbane@boem.gov. Information on the *Watersipora*/Platform studies can be obtained through Susan Zaleski (BOEM) susan.zaleski@boem.gov and Mark Page (MSI, UCSB) mark.page@lifesci.ucsd.edu.

After a brief break Dr. Jeff Goddard (MSI, UCSB) presented: *Nomenclatural changes in Nudipleura from southern California*. Jeff's presentation treated us to a wonderful collection of nudibranch images as he commented that recent molecular genetic work from the labs of Dr. Ángel Valdés and others has revealed new cryptic species complexes of nudibranchs. Jeff



lamented – partially tongue in cheek - that just when nudibranch taxonomy in the region appeared settled, we now have a slew of new species, some of which overlap considerably in range and are currently difficult to distinguish in the field. Dr. Goddard kindly gave approval for SCAMIT to post his presentation to the website, where readers are directed for images and references to accompany the following summary. His presentation can also be found as an attachment at the end of this Newsletter.

Berthella californica (Dall, 1900). Work in progress by Ángel's student Hessam Ghanimi has confirmed that *B. californica* is now two species which differ in spotting pattern and overall coloration. *B. californica* will likely be retained for the northern species which has opaque white spots of varying size scattered irregularly on the translucent white dorsum and lacks the white stripe found on the rhinophores of the southern species. The egg masses are also different between the two species.

Limacia cockerelli (MacFarland 1905). Northern and southern forms known for decades have been confirmed to be separate species. The southern species possesses a medial row of red-orange dorsal papillae, whereas the dorsal papillae on the northern species are smaller and scattered across the dorsum. *Limacia cockerelli* will be retained for the northern form, which was originally described from the Monterey Peninsula. The southern form is being named after Gary McDonald, and a similar-looking form found recently in Chile is being described as a new species.

Diaulula sandiegensis (Cooper, 1863). Spotted and ringed species have been delineated (Lindsay et al., in press). The northern, spotted species has spots that extend to the mantle edge and increase in number with age; while in the southern form spot numbers are static and confined to the inner part of the dorsum. *Diaulula odonohuei* Steinberg (1963) will be applied to the northern species, and *D. sandiegensis* retained for the southern species. The geographic ranges of the two overlap from northern California to British Columbia.

Felimare californiensis (Bergh, 1879). Hoover (2015) determined that *F. ghiselini*, described by Bertsch (1978) from the Gulf of California, is the same as *F. californiensis* and therefore a junior synonym of that species.

Dendrodoris behrensi Millen & Bertsch, 2005. Jeff noticed similarities between the original descriptions, published a century apart, of *D. nigromaculata* (Cockerell, in Cockerell & Eliot, 1905) and *D. behrensi*. Goddard & Valdés (2015) located the type specimen of *D. nigromaculata* and showed that the two species are indeed synonymous. They further showed that the name *D. nigromaculata* had been misapplied in recent decades to *Doriopsilla rowena*, described by Marcus & Marcus (1967) from the northern Gulf of California. Available information on developmental mode suggests *D. rowena* may actually constitute two species: one with planktotrophic development found from the northern Gulf of California to central America, and one with direct development from La Jolla and the northern Pacific coast of Baja California.

Doriopsilla albopunctata (Cooper 1863). Jeff recounted that Hoover et al. (2015) showed that this single species now constitutes three species: *D. fulva*, with sparse spotting and known throughout California (and with the current El Niño, into southern Oregon); *D. albopunctata*, known from Baja California to northern California; and *D. davebehrensi*, known from the Gulf of California and Newport Bay. Jeff noted that *D. davebehrensi* and some *D. albopunctata* are difficult to distinguish externally where they overlap in range, and that more sequencing is needed to determine the identity of forms intermediate in spotting between *D. fulva* and *D. albopunctata*.



Doriopsilla gemela Gosliner, Schaefer, & Millen, 1999. Jeff mentioned that specimens of this species from the northern Gulf of California have direct development, contrasting with the planktotrophic development of *D. gemela* from California, and were described by Hoover et al. (2015) as a new species, *D. bertschi*.

Flabellina goddardi Gosliner 2010. Until recently this species was known only from the type locality in Carpinteria. Jeff described how additional specimens have been found subtidally off Malibu and Anacapa Island. These subtidal specimens, as well as additional specimens from Carpinteria, differ from the type specimen by having complete to broken white lines on the body. The Anacapa specimens, with complete white lines, were found in close proximity to and resembled, *F. trilineata*, suggesting a possible mimicry complex. Brenna Green, a student of Terry Gosliner at the California Academy of Sciences, is working on the phylogeny of *Flabellina* and may provide insight about the placement of *F. goddardi*, which has a uniserate radula, in the genus *Flabellina*, other members of which have triserate radulae.

Aeolidia papillosa (Linnaeus, 1761). A widely distributed species with populations in the northeastern Pacific, western and eastern Atlantic, and southern Pacific, has been split into four species by Kienberger et al. (2016): *A. campbellii*, *A. filomenae*, *A. loui*, and *A. papillosa*. *Aeolidia loui* occurs from central Baja California to at least southern Oregon and can be distinguished from the more northerly *A. papillosa* by its warty rhinophores, a trait that unfortunately disappears after preservation.

Hermisenda crassicornis (Eschscholtz, 1831) was found by Lindsay and Valdés (2016) to be a complex of three species: *H. emurai* in the northwest Pacific and *H. crassicornis* and *H. opalescens* in the northeast Pacific. The more northerly *H. crassicornis* has a blue-white stripe on each ceras. Jeff has found specimens in Santa Barbara that look very much like *H. emurai*, raising the possibility that *H. emurai* has been introduced to the Southern California Bight (SCB). Jeff also mentioned that specimens intermediate in appearance between *H. crassicornis* and *H. opalescens* need to be sequenced to determine (1) their identity and (2) whether or not hybridization is occurring between the species.

Jeff mentioned that *Doto* form A of Goddard (1996), prevalent in the SCB, was determined by Shipman and Gosliner (2015) to be genetically distinct from the northern species *D. amyra*, but has yet to be described.

Flabellina cooperi (Cockerell, 1901). Jeff mentioned that Brenna Green's work has shown that specimens with smooth to slightly rugose rhinophores found intertidally in southern California and superficially resembling *F. trilineata*, are actually color variants of *F. cooperi*, which is better known subtidally. The intertidal specimens typically have white spots on the cerata and irregular bands of white on the sides and top of the body.

That concluded Dr. Goddard's wonderful presentation which can be found in its entirety on the SCAMIT website in the Taxonomic Tools Box. The references for this presentation are listed at the end of the newsletter.

Next to have the floor was Paul Valentich Scott. He treated us to his presentation, given at this year's WSM, on bivalves from the Peru-Chile Province. Paul described the history of bivalve workers over the past 150 years. He and his collaborators mined historical works to review the described species from the region. They then compared those results to other well-studied areas, and found that there were nearly twice as many families and genera elsewhere than were present



in the Chile-Peruvian region. They found that 344 species disappear as you cross 6-degrees south. So a problem was before him: Why the drop in species? Was it sampling bias or simply unrecognized taxonomy?

Paul recounted their investigation of one unknown specimen sent to him by his Peruvian colleagues, initially referred to as a “*Crenella*”. In short, through the process of investigating this one specimen he found 39 new species out of the material at hand. Upon completing a more significant review of the specimens and surveys from the region, he determined that the decline in species richness was due to the region being under-sampled, and additionally, the material that does exist is under-studied. Paul hopes to complete a new book, *Bivalve Seashells of Western South America* by 2018. It will compliment his two previous west coast monographs, *Bivalve Seashells of North America* (2000) and *Bivalve Seashells of Tropical West America* (2012).

After Paul’s presentation we broke for lunch and in the afternoon Paul graciously offered to examine specimens brought by various attendees to assist with their identification. Below is a summary of the CSD specimens examined.

First up was *Solen* spp – a Bight ‘98 voucher specimen of *S. rostriformis* from San Diego Bay was verified. In contrast, all of the offshore specimens were *S. sicarius* including a specimen from CSD station I-12, 2016, 29m.

A *Periploma* sp fid from CSD station I-33, Jan 2016, 31m, was examined and ID’ed by P. Scott as *Cyathodonta pedroana*. It was such a small juvenile that the undulations in the shell weren’t obvious.

A specimen of *Periploma rosewateri* (B’13 station 9099) was verified and left with Paul for accession in to SBMNH collections.

An animal that had been tentatively identified as Thyasiridae sp SD 1 was determined by Paul to be *Axinodon redondoensis*.

Next up was an fid Bivalvia from CSD station I-7, July 2012, 52m. Paul determined it to be *Bernardina bakeri* which will be a new addition to the SCAMIT Species List.

Nuculanidae fid from B’13, 9041, 742m was reviewed. It had a completely internal ligament so it belonged to a different subfamily. After much examination and discussion an identification of *Ledella fiascona* was determined. This is another new addition to the SCAMIT Species List. The specimen was left with Paul. He is going to photograph it and send images to molluscan taxonomists. He only knows the type specimen and is eager to have more material to document. See the NL cover for images of this animal by Wendy Enright, CSD.

On the subject of *Ledella*, a *Ledella* sp fid from B’08 7121, July 08, 860m, was decided to most likely be an undescribed species of *Ledella*.

Paul determined a juv Lasaeidae fid from CSD station I-34, Jan 2016, 21m, to be *Kurtiella pedroana*.

There was a “dead shell” specimen of Nuculoidea fid from CSD Regional station 8424, 23 July 2015, 131m. Paul left the ID at Nuculoidea and said he wants more specimens, but live specimens....



With that Megan had run out of bivalve specimens with which to bother Paul so she headed downstairs to corner Dr. “Hank” Chaney in his office and ask him to look at fid gastropod specimens she had brought.

He was able to verify a small specimen of *Crepidula excavata*.

A Gastropoda FID from B’13, 9023, 430m, July 2013, was determined to be a Fasciolariidae and most likely a juv *Fusinus barbarensis*.

And lastly, a group of small but beautiful *Eulithidium* sp fid, were identified as *E. pulloides*.

ATTACHMENTS - MOLLUSCA

Appended to this issue of the Newsletter is a voucher sheet on *Nutricula lordi* produced by Angela Easton at the Washington State Department of Ecology.

REFERENCES

- Goddard JHR (2015) Latitudinal variation in mimicry between aeolid nudibranchs and an amphipod crustacean in the Northeast Pacific Ocean. Marine Biodiversity DOI 10.1007/s12526-015-0402-0.
- Goddard JHR and Valdés Á (2015) Reviving a cold case: two northeastern Pacific dendrodid nudibranchs reassessed (Gastropoda: Opisthobranchia). The Nautilus 129: 31–42.
- Gosliner TM (2010) Two new species of nudibranch mollusks from the coast of California. Proceedings of the California Academy of Sciences 61: 623–631.
- Green B and Gosliner TM (2016) Revealing hidden diversity in Flabellinidae, a family of nudibranchs. Poster presented at Society for Integrative and Comparative Biology Annual Meeting 2016, Portland, OR.
- Hoover CA (2015) Phylogenetics and population genetics of *Felimare californiensis*. M.S. thesis, Cal Poly Pomona. 63 pp.
- Hoover C, Lindsay T, Goddard JHR and Valdés Á (2015) Seeing double: pseudocryptic diversity in the *Doriopsilla albopunctata–Doriopsilla gemela* species complex of the north-eastern Pacific. Zoologica Scripta 44: 612–631 doi:10.1111/zsc.12123.
- Kienberger K, Carmona L, Pola M, Padula V, Gosliner TM and Cervera JL (2016) *Aeolidia papillosa* (Linnaeus, 1761) (Mollusca: Heterobranchia: Nudibranchia), single species or a cryptic species complex? A morphological and molecular study. Zoological Journal of the Linnean Society 177: 481–506. doi:10.1111/zoj.12379.
- Lindsay T and Valdés Á (2016) The Model Organism *Hermisenda crassicornis* (Gastropoda: Heterobranchia) is a species complex. PLoS ONE 11: e0154265 doi:10.1371/journal.pone.0154265.
- Shipman C and Gosliner TM (2015) Molecular and morphological systematics of *Doto* Oken, 1851 (Gastropoda: Heterobranchia), with descriptions of five new species and a new genus. Zootaxa, 3973: 57–101.



Please visit the SCAMIT Website at: www.scamit.org

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If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is \$15 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and \$30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is \$60. All correspondences can be sent to the Secretary at the email address above or to:

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Long Beach, CA 90815

Nutricola lordi

Nomenclature	
Phylum	Mollusca
Class	Bivalvia
Order	Veneroida
Family	Veneridae
Authority	Coan et al., 2000
Original Description	(Baird, 1863)
Common Synonyms (S) Previous Names (PN)	<i>Psephidia lordi</i>



Distribution

Southeastern end of the Bering Sea (57.0°N) [CAS] and Cook Inlet, Alaska (59.2°N) [LACM], to Punta Pequeña, Baja California Sur (26.2°N) [LACM]. Depths for Ecology records: 1 – 268 m.

Material examined

Qty	Project	Station ID	Location	Date	Depth (m)
1 spm	Historical	14 (Rep 2)	Hood Canal, Bangor	01 April 1989	133
1 spm	Historical	26 (Rep 1)	Central Basin	01 April 1992	268
1 spm	Temporal	29 (Rep 1)	Shilshole	18 April 2000	199
9 spm	Regional	323	Coon Bay	14 June 2004	103
97 spm	Regional	3855	Useless Bay	18 June 2014	80

Description

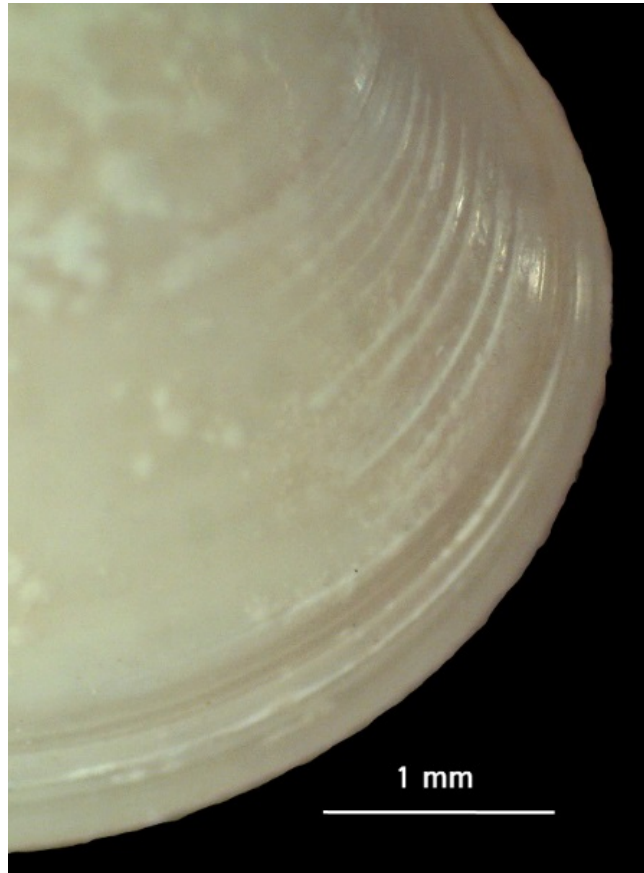
Length to 10 mm; shape ovate to subtrigonal with broadly rounded anterior and posterior margin; moderately inflated; shell thick; beaks small but prominent; sculpture of microscopic commarginal striae; shell and periostracum yellowish-white, brilliantly polished; pallial sinus shallow, pointed; ligament slightly protruding; 3 cardinal teeth in each valve; no lateral teeth; inner ventral margin smooth

Diagnostic Characteristics

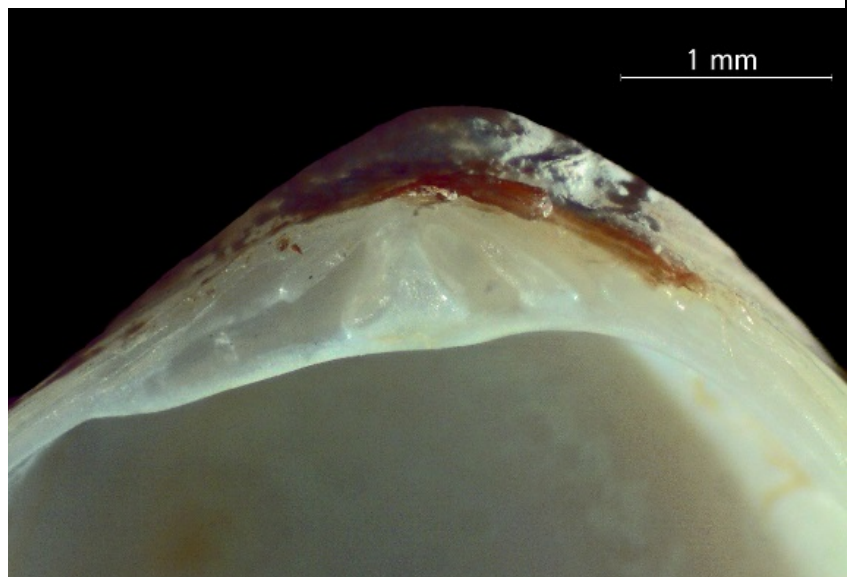
Diagnostic Characteristics

Photo Credit: Marine Sediment Monitoring Team

sculpture of fine commarginal striae



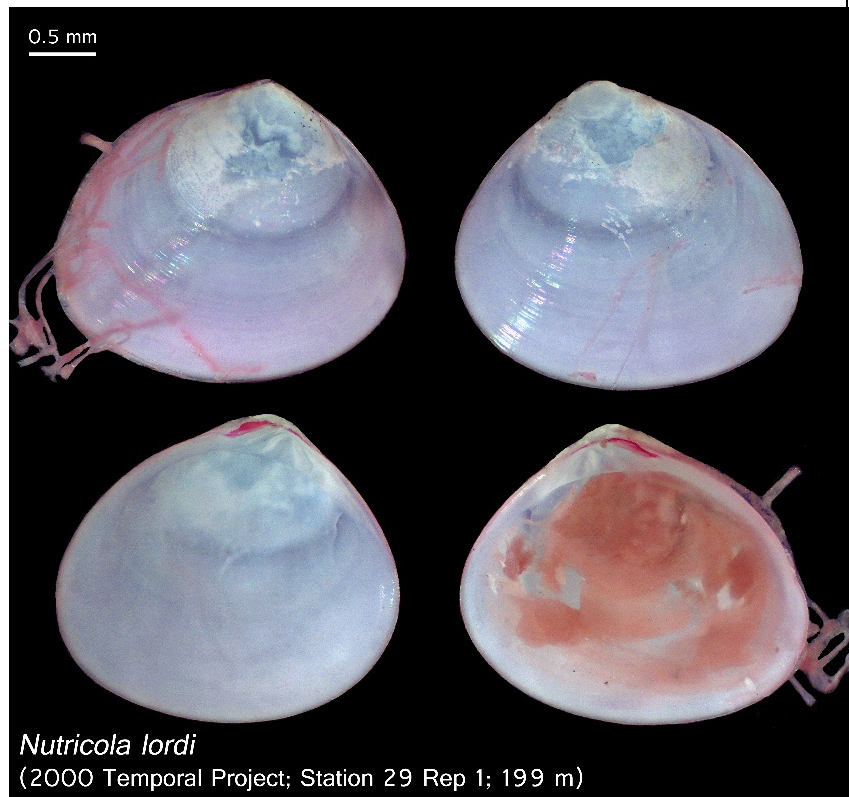
anterior lateral tooth in right valve is absent; ligament slightly protruding



pallial sinus shallow; shape subtrigonal; smooth inner ventral margin



examined specimen of deep water *N. lordi*



Related Species and Characteristic Differences

Species Name	Diagnostic Characteristics
<i>Nutricola ovalis</i>	subovate shape; compressed; sculpture of feeble anterior and ventral commarginal striae; lunule absent; shell and periostracum brilliantly polished;
<i>Nutricola tantilla</i>	subovate-subtrigonal shape; sculpture of low, widely spaced, commarginal ribs or striae; anterior lateral tooth in right valve moderate, short; ligament sunken; lunule demarcated by a line only; surface straw colored; posterior slope stained brown to purple; inner ventral margin with obscure oblique grooves

Comments

Coan et al. (2000) recorded at depths from the intertidal zone to 22 m, but records from Washington State Department of Ecology have recently been examined to determine that *Nutricola lordi* has exceeded those depths by an order of magnitude (over 240 m). The deepest recorded depth was at 268 m in 1992 at Historical Station 26 (Central Basin). The earliest Puget Sound record in 1989 shows *N. lordi* was found at 195 m at Long-term Station 38 (Point Pully).

Literature

Baird, William. 1863. Description of some new species of shells, collected at Vancouver Island and in British Columbia by J. K. Lord, Esq., naturalist to the British North-American society of London. Proceedings from 1863(1): 71 (May) [repr., with other material: Lord(1866)]. p. 69.

Coan, E.V., Valentich-Scott, P., and F.R. Bernard. 2000. Bivalve Seashells of Western North America Marine Bivalve Mollusks from Arctic Alaska to Baja California. Santa Barbara Museum of Natural History Monographs Number 2. Studies in Biodiversity Number 2. ISBN 0-936494-30-1. Santa Barbara: Santa Barbara Museum of Natural History. pp: 366-367, 382-383.

More Information

<p>More information about Puget Sound benthic invertebrates is available at: http://www.ecy.wa.gov/programs/eap/psamp/index.htm</p>	<p>Prepared by Angela Eagleston (Ecology). This document is a pre-release of a Department of Ecology based publication.</p>	<p>If you need this document in a format for the visually impaired, call (360) 407-6764. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call (877) 833-6341.</p>
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