SOUTHERN CALIFORNIA ASSOCATION OF MARINE INVERTEBRATE TAXONOMISTS



Sept/Oct/Nov/Dec 2010

SCAMIT Newsletter

Vol. 29, No. 3&4



This Issue	
SCAMIT YEAR IN REVIEW: MAY 2010 - APR 2011	2
SCAMIT TREASURY SUMMARY 2010 - 2011	
13 SEPTEMBER 2010, LACSD, B'08 QA/QC	5
UPCOMING MEETINGS	5
4 OCTOBER 2010, CSD, B'08 QA/QC	6
15 NOVEMBER 2010, MOLLUSCAN LITERATURE REVIEW/PYRAMIDELLIDAE	Ξ
DISCUSSION, OCSD	
THE SYSTEMATICS OF NEP PYRAMIDELLIDS- BY D. CADIEN	8
PYRAMIDELLID GENERA APPLICABLE TO WEST COAST TAXA – D. CADIEN	
DIAGNOSES OF PYRAMIDELLID GENERA - D. CADIEN	
22 NOVEMBER 2010, SPIONIDAE, NHMLAC	
10 DECEMBER 2010, LACSD, CRUSTACEA LITERATURE REVIEW	
SCAMIT OFFICERS	
A BIBLIOGRAPHY OF SOME OF THE RELEVANT MOLLUSK LIT. PUBLISHED	
SINCE 2008 - DON CADIEN & KELVIN BARWICK	
(BIBLIO) PHYLOGENY AND EVOLUTION OF THE MOLLUSCA - PONDER AND	
LINDBERG	. 18
PYRAMIDELLID LITERATURE CITED	
(BIBLIO) LOCAL FAUNAL ARTHROPOD UPDATES	
(BIBLIO) ARTHROPOD HIGHER LEVEL UPDATES	28
ATTACHMENTS	
(POWERPOINT) MOLLUSCA LITERATURE REVIEW - K. BARWICK	
TAXA IN "ODOSTOMIA" AND "TURBONILLA" FROM THE NEP - D. CADIEN	

Unidentified "*Turbonilla*" from San Diego. Station I-33 (2), 31 Jan 05, 30m. Image by K. Barwick. Scale Bar equals 1 mm.

SCAMIT YEAR IN REVIEW: May 2010 - Apr 2011

This past year, SCAMIT's 29th, was a good year for the organization. We continue to maintain our original goal of promoting the study of marine invertebrate taxonomy in Southern California and developing a regionally standardized taxonomy. We accomplish that goal in the old ways by holding monthly meetings and publishing a newsletter. We also continue to develop and improve newer computer age tools like our website, the General Discussion email list server for easy member communication, promoting Morphbank as our image repository, and development of a Taxonomic Database.

We experienced continued membership growth. We are still very much a local So Cal organization, but have members in many US states and several foreign countries. For member outreach we set up a membership table at the annual meeting of the Southern California Academy of Sciences with membership flyers, examples of newsletters, a copy of the Edition 5 Species List, beautiful color images of live marine invertebrates by Leslie Harris as eye catchers, and a laptop with the website up.

SCAMIT hosted a full compliment of meetings this past year at a variety of locations. They covered a range of topics including barcoding, digital image editing, taxonomic database development, and important new literature. There were several Bight '08 regional monitoring related meetings dealing with taxonomic QA and species list reconciliation between participating labs. Dr. Vasily Radashevsky, Vladivostok, Russia presented the results of his most recent studies on spionid polychaetes. The SCAMIT Christmas party was held at, and hosted by, the Cabrillo Marine Aquarium.

The need to maintain, revise, and release an updated SCAMIT Species List each year required the formation of a new standing committee, the Species List Review Committee. Nine local members; Don Cadien – Chair, Kelvin Barwick, Leslie Harris, Tony Phillips, John Ljubenkov, Megan Lilly, Larry Lovell, and Ron Velarde; met in January and were tasked with making changes and additions to the Edition 5 Species List in time for a July 1 release of the Edition 6 Species List. The committee will continue to revise and emend the list each year with a new version release date each July 1st. Once the Taxonomic Database is functional, computer tools will do the job of producing a revised list. Chair Don Cadien deserves a well-earned kudos for managing this effort and producing the index of the list.

SCAMIT continues to look to the future by pursuing development of the Taxonomic Database. The Taxonomic Database Committee has been slowly planning and implementing an idea developed nearly 10 years ago. Orange County Sanitation District donated funds totaling \$15,000 in the past three years toward that goal. Developmental programming, databasing of the Species List, creation of a web based species page, and website upgrades have been accomplished by outside contractors using about half of those funds. We are ready to move into the next phase of development and begin adding information and tools to the structure. SCAMIT is currently in discussion with new potential partners with vested interests in the success of this project. You will be hearing more soon.



Lastly, I want address YOU, the SCAMIT members. Your continued support and interest in this organization are what make it a success. Whether you live out of the area and support us by paying your dues and participating in list server discussions, or are local and regularly attend and contribute to meetings, you are all important parts of SCAMIT's continuing success. Thank you for being part of that!!!

Sincerely, Larry Lovell, President

SCAMIT Treasury Summary 2010 - 2011

Below is the treasurer's report for 2010-11. We are pleased that even in tough economic times memberships continue to be renewed and SCAMIT is still a bargain at \$15 per year. SCAMIT did not award any publication grants this past year. As stipulated in our grant policy we have \$4,638.85 (25% of our operating budget- \$18,555.42 which does not include database funds), available for publication grants this year. We hosted a workshop (Morphbank with Deb Paul) and visiting lecturer (Joshua Mackie – Oligochaetes) this past year. Your dues directly help to fund these activities. SCAMIT also hosted another holiday party in December for all its members at the Cabrillo Marine Aquarium and we hope to again this year. Also, we have maintained our all time high for memberships (150). Every year we get a few new members and while a few people retire we still seem to attract more than we lose. A trend we hope continues!

Account Balances (as of 6/15/11)

	Checking		\$ 5,398.76
	Certificate of Deposit		\$13,141.66
	Cash		\$ 15.00
	Database Fund		\$ 7,558.30
Total			\$ 26,113.72
		Income	
	2011 Membership dues		\$ 2084.00
	Interest from CD		\$ 34.33
Total			\$ 2118.33



Total

Expenses (General Account)

Electronic newsletter	\$	29.97
(website/domain name)		
Hardcopy newsletter	\$	338.02
(printing/postage)		
Workshop/meeting expenses	\$	177.19
Holiday party/Meeting refreshments	\$	263.19
Travel Stipends	<u>\$</u>	653.29

Expenses (Database Account)

\$ 1461.66

Morphbank workshop	\$ 695.00
Travel Stipend for Deb Paul	
Website Design/Improvements	\$1335.00

Total \$2030.00



13 SEPTEMBER 2010, LACSD, B'08 OA/OC

Attendance: Larry Lovell, LACSD; Bill Power, LACSD; Bill Furlong, LACSD; Jim Roney, CLAEMD; Chase McDonald, LACSD; Cheryl Brantley, LACSD; Don Cadien, LACSD; Kelvin Barwick, OCSD; Tony Phillips, CLAEMD; Dean Pasko, OCSD; Megan Lilly, CSD. Larry Lovell opened the meeting with the usual business announcements. Upcoming meetings

were the first order of business. 18 October will be at SCCWRP and will be a synoptic review of the B'08 species list. 8 November will have malacologists at OCSD for a review of Molluscan literature that might impact the next edition of the SCAMIT species list. The meeting will be lead by Kelvin Barwick.

It was then mentioned that a future hopeful meeting would be another Morphbank image submittal workshop with Deb Paul. It will be asked that participants each bring 10 images to practice submitting via the spread sheet method. Speaking of morphbank, Don Cadien and Kelvin Barwick's aplacophoran images have been submitted and are now up and available for public viewing on morphbank.

The idea of public viewing lead to the announcement that **all** issues of the SCAMIT newsletter are now up on the SCAMIT website and can be searched. So, if you are looking for information on a specific species, you can now seach the newsletters with that species name to see if it was ever discussed and reported on by SCAMIT.

Speaking of the SCAMIT website... it was asked that as members identify their samples,

UPCOMING MEETINGS

- 17 October 2011. 9:30–3:30. Enopla Bight '08 specialty taxonomy presentation at Orange County Sanitation Districts. Meeting Lead Tony Phillips.
- 14 November 2011. 9:30–3:30. Syllidae Bight '08 specialty taxonomy presentation at the NHMLAC in the education room. Meeting Lead Ron Velarde.
- 10 December 2011. 5:00-9:00 PM. SCAMIT Holiday Party at Cabrillo Marine Aquarium. SCAITE members are invited to join us. Additional details to be provided via email.
- 12 December 2011. 9:30-3:30. Paraonidae seminar at NHMLAC. Meeting lead visiting scientist Michael Reuscher, TAMUCC.
- 9 January 2012. 9:30-3:30. "Vertebrate and Invertebrate collecting and diving adventures in the Pacific Northwest" at Cabrillo Marine Aquarium with author Andy Lamb, formerly at the Vancouver Aquarium. Trawl QA protocols discussion. Joint SCAMIT and SCAITE meeting.
- 13 February 2012. 9:30–3:30. SCB isopod review at the City of San Diego. Meeting Lead Dr. Tim Stebbins.

they check to see if the taxonomic information they are using (voucher sheets, in-house keys, etc) are up on the SCAMIT website in the Taxonomic Tools Box. This feature of the website has changed dramatically and much has been added to it, but it could always use more input and updating.

After that Ananda had the floor and discussed the upcoming B'08 synoptic species list review. He will distribute the completed list prior to the upcoming 18 October meeting. He has some concerns about the feasibility of reconciling the entire list at one meeting which is why he is working on distributing the list early, giving us a chance to do some prior review work. After the synoptic list review meeting, the Bight Benthic Committee will commence meeting again in prepartion for the final report. These will not be SCAMIT meetings.

Cheryl Brantley then had the floor to comment on the B'08 QA process and discuss how the Discrepancy Resolution reports were to be filled out by LACSD personnel.



The next topic was the newly formed Species List Review committee. The committee members will be Don Cadien, Leslie Harris, Kelvin Barwick, John Ljubenkov, Megan Lilly, Ron Velarde, Tony Phillips, and Larry Lovell. Others will be sought for their opinion as necessary. Dean asked if we were committed to the dynamic species list. It was explained that this has been discussed in depth at the taxonomic database meetings. The plan is to have at least two defined points in time (Jan 1 and July 1) as benchmark species lists for use by POTW's and consulting labs, to define versions of the species list. A specific listing of changes to the list over all, and for each new version, should also be available. A dated version of the list will be accessible for any calendar date should it be desired. The Species List Review committee will review proposed changes and approve, hold, or deny them several times a year (2-4). They will be in contact with one another via an email list server and consult other members when appropriate.

The remainder of the day was spent reviewing B'08 QC samples. Discrepancies (Ids and counts) in data were resolved between the primary taxonomists of CLAEMD and ABC Labs, and LACSD secondary QA taxonomists.

4 OCTOBER 2010, CSD, B'08 QA/QC

Attendance: Megan Lilly, CSD; Don Cadien, LACSD; Ron Velarde, CSD; Larry Lovell, LACSD; Bill Furlong, LACSD; Cheryl Brantley, LACSD; Veronica Rodriguez, CSD; Ricardo Martinez, CSD; John Byrne, CSD; Bill Power, LACSD; Wendy Enright, CSD; Kathy Langan, CSD.

Larry opened the day by announcing upcoming meetings and reminded members of the annual SCAMIT Christmas party on 11 December 2010 at the Cabrillo Marine Aquarium. The party is from 5:30 to 9:00. SCAMIT will provide the main course, but people are encouraged to bring side-dishes to share pot-luck style. This year SCAMIT has invited members from two sister organizations to join us – both SAFIT and SCAITE members are welcome to come participate in our celebration.

There was then some discussion as to possible meetings next year. One suggestion was another Morphbank image submittal workshop.

Don Cadien then had the floor and wanted to tell everyone about a recent Amphipod publication: Genetic diversity in two introduced biofouling amphipods (*Ampithoe valida & Jassa marmorata*) along the Pacific North American coast: investigation into molecular identification and cryptic diversity by Erik M. Pilgrim, and John A. Darling. 2010.

With that the business portion of the meeting was adjourned and attendees separated into pairs to

With that the business portion of the meeting was adjourned and attendees separated into pairs to review the results of the re-identification process with one another.

15 NOVEMBER 2010, MOLLUSCAN LITERATURE REVIEW/PYRAMIDELLIDAE DISCUSSION, OCSD

Attendance: Wendy Enright, CSD; Bill Power, LACSD; John Ljubenkov, DCRE; Bob Dees, SDSC; Ron Velarde, CSD; Don Cadien, LACSD; Kelvin Barwick, OCSD; Larry Lovell, LACSD; Mike McCarthy, OCSD; Jules Hertz, SDSC; Carole Hertz, SDSC; Pat LaFollette, LACM; Scott Rugh, Invertebrate Paleo.

The day began with upcoming meeting announcements. 22 November Vasily Radashevsky will present on his work with spionid polychaetes at LACMNH. All are invited to bring problematic Spionidae for identification and to donate extra specimens for the natural history museum in Vladivostok, Russia. Friday, 10 December, will be a crustacean literature meeting at LACSD. Don Cadien will lead a review of new crustacean literature that affects Ed 5 name usage. Mary



Wicksten will be attending the meeting and sharing her work on SCB shrimp and other Decapoda. 11 December will be the SCAMIT Xmas party at Cabrillo Marine Aquarium. The gift shop will be open 5:30-6:30 and will be offering a 20% discount for attendees. Please come and enjoy the festivities.

Non-SCAMIT meetings: 1 December will be a B'08 benthic committee meeting followed by BATMAN working group at SCCWRP. 22 January will be the Southern California Unified Malacologists (SCUM) meeting hosted by K Barwick at SCCWRP 9-3:30 (this meeting was postponed and was eventually held on 5 March). The Western Society of Malacologists will hold a joint meeting with the Mexican Malacological Society from the 27-30 June (2011) in La Paz, Mexico. The official meeting announcement is forthcoming.

We discussed other upcoming meetings that so far are without hosts or dates – further literature review meetings for the echinoderms and miscellaneous phyla, plus Bight '08 review meetings: Cnidarians with John Ljubenkov, Enoplans with Tony Phillips, and Syllids with Ron Velarde.

Larry Lovell demonstrated the nascent capabilities of the online taxonomic database currently under development with the assistance of Katja Seltmann. There are many bugs in the system still to be worked out including improved higher level taxonomic filtering, connection with Morphbank, and formatting of the information shown on the species pages. However, progress is being made and efforts to link collection data, expected habitat type, and other elements of the taxonomic toolbox are ongoing.

Kelvin then took the floor and gave a PowerPoint® presentation of some of the relevant changes to the molluscan fauna published in the literature over the last few years. Thanks to Don Cadien for compiling the list. Highlights of his presentation included papers describing new nudibranch species and synonymizing others, as well as a paper revising the Pandoridae by Paul Valentich-Scott and Carol Skoglund. Also reviewed was an extensive revision of Euheterodont higher level classification based on molecular work and a revision of the North Pacific *Solemya* species by Kamenev. The next edition of the SCAMIT taxonomic listing will incorporate many of the taxa changes expressed in these and other publications. An abbreviated version of Kelvin's presentation can be found at the end of this newsletter. A full version will be posted on the SCAMIT website in the Toolbox. A complete bibliography, including other recent papers not reviewed at the meeting, can also be found at the end of this newsletter. Many of these publications were made available as PDF files at the meeting.

Finally, we tackled the lamentable state of the Pyramidellidae. Don was especially morose at the prospect of trying to assign proper names to this family that has significant errors going all the way back to the 1800's. However, in an attempt to clarify the situation, he has created useful files and tables dealing with the groups' taxonomic issues. These files are included as part of this newsletter.

For the hands on portion of the meeting we were fortunate to have Pat LaFollette from LACMNH, one of the leading experts on the family, on hand to help us deal with the mess. He also brought an extensive collection of pdf files representing the most useful pyramidellid literature available. Much thoughtful discussion ensued including the final realization that although the family has been over-split, there still remain many new species not yet described. Pat's suggestion for us is to take high quality, detailed photographs of our *Turbonilla*, *Pyrgiscus*, and *Odostomia* species (don't forget your scale bars, locality, and depth information!) and share them with him and with each other. If it is possible to assign it unequivocally to a described species, he will aid us in giving specimens names but otherwise he believes it best to continue with our extensive use of provisionals. Also, he suggested we use Abbott 1974 as a primary



resource and elevate the subgenera used therein to full generic status. As a final note, he reminded us that a *Turbonilla*-type shell that has spiral sculpture is actually a *Pyrgiscus* (in the broad sense). Therefore, our *Turbonilla* sp A is actually *Pyrgiscus* sp A.

At the end of the day, Pat sat down at the scope and looked at a few voucher specimens brought in by Carol Paquette and the City of San Diego. He was able to give names to two specimens; *Turbonilla* sp SD7 is now *Pyrgiscus signae* and *Turbonilla* sp SD1 (which appears to be the same as a white form Carol had with her) is *Turbonilla santarosana*. Pat was not able to give a name to SCAMIT's *Turbonilla* sp A but encouraged us all to start taking photos and sharing them around in the hopes of putting a couple more names out there.

Below is a "quick check" to be used when looking at Pyramidellids:

"Odostomids"

Odostomia – smooth, white

Chrysallida – axial and spiral sculpture forming nodules

Ividella – lamellar axial and spiral sculpture

"Turbonillas"

Pyrgiscus – axial and spiral sculpture

Turbonilla – axial sculpture only

The systematics of NEP pyramidellids - by D. Cadien

As we attempt to reach a concensus position regarding how SCAMIT members might be aligned in their usage of pyramidellid nomenclature there are a number of factors to consider. Perhaps central is the result of molecularly based phylogenetic study of the group. Schander et al (2003) examined a number of representatives of the subfamilies Odostomiinae and Turbonillinae with interesting results. Perhaps the most surprising was the placement of members of the ostensibly "turbonilline" subgenus or genus Pyrgiscus among the odostomines rather than within the Turbonillinae (although the authors retained them within the turbonillines pending further investigatioin). There has always seemed to be a slippery slope of "how tall vs how broad" which should clearly separate Odostomiinae and Turbonillinae, but does not. Other recent examinations of groups on the basis of morphology, particularly refined nuclear morphology, has resulted in numerous other realignments within the family. In a few cases groups of species have been suggested to lie outside the pyramidellid fold entirely, requiring new familial placement. Schander, Aartsen and Corgan (1999) suggest that the recognized subfamilies of the Pyramidellidae be elevated to full family status, a controversial and as yet unadopted proposal. Much of this activity has been in Europe and concerns genera and species groups not occurring in the North American fauna.

Next is the extensive overapplication of a typological concept of species by Dall and Bartsch (inter alia), which has led to a very large number of named forms, many suspected of being or proven synonyms (see table of NEP taxa). As investigations of variation within populations of a given taxon have become available (i.e. LaFollette 1979, Porter 1976, Porter et al 1980) variability in shell sculptural detail has been shown to be greater than one might like. Since a very large proportion of the species are known only from dead shells, the information base does not yet provide the ability to use non-shell characters in taxonomic decision making. McLean has long argued (but see Schander and Sundberg 2001 for a dissenting viewpoint) that shell structure must be the predominant and preferrably the only information source for the group. Preliminary soft



tissue approaches (see for instance Wise 1996, Schander, Hori and Lundberg 1999) have proven promising, but too few species anatomies have been investigated to date. This fact along with the demonstrated variability of some species shell morphology has lead to an uncertain position where many shell-based taxonomic judgments are questionable. There are also suggestions that cryptic speciation many be hidden by virtually identical shell form. Host-parasite investigations by Collin and Wise (1997) show that ontogenic host switching suggested for *Odostomia columbiana* could not be experimentally induced, and that cryptic speciation is suggested by the reported occurrence of this animal on different hosts. Work is ongoing to resolve these issues, but progress is slow, and mostly generated in other faunas. Pat Lafollette has worked on the local fauna for decades, and is slowly progressing towards resolution and further publication. Once the new regional handbooks for the temperate and boreal NEP gastropods are published (McLean mss.) many issues will be resolved. In the interim we move slowly towards an expanded consensus on the local fauna.

With such consensus in mind I have made recommended usages for all of the species listed in the NEP taxa table. Where recent publications provide direct input, this has been cited. In cases where the species in question has not been directly addressed in recent literature, I have extrapolated from that literature, and from other sources to suggest the most likely valid placement for the species. In cases such as *Chrysallida*, where the boundaries between that genus and the genera *Boonea* and *Fargoa* (see discussion in Pimenta, Absalão & Miyaji 2009) need further resolution, these recommendations will probably be extensively revised in future (and are already probably contraindicated by the McLean manuscript placements).

In others, such as most of the turbonillids, the majority of species cannot yet be defensibly seated in an appropriate genus. All species previously allocated to Mormula, Chemnitzia, Turbonilla, Pyrgisculus, Pyrgolampros, and Strioturbonilla are being left at Turbonilla s.l. pending further information. The extensive work undertaken in European seas in recent years (Aartsen 1977, 1981, 1984, 1987, 1988, 1994; Aartsen and Corgan 1996; Aartsen and Menkhorst 1996; Aartsen et al 1998; Linden and Eichenboom 1992; Penas and Rolán 1997a & b, 1998, 1999; Penas et al 1996; Schander 1994, 1997; Schander, Hori & Lundberg 1999; Schander, Aartsen & Corgan 1999) has begun to show that application of generic names generated for European taxa may not be appropriate to the West Coast fauna. Consequently transferrals of species to other genera will continue. In the sense that Dall and Bartsch (1904) provided a plethora of new genera, these names may already exist, and merely need to be recognized as now valid for animals previously interpreted as members of genera known from European or other waters. This is also true, in a more limited sense and at the species level, of the east coast of South America, where recent work (Pimenta and Absalão 2001a,b; 2004a,b; Pimenta, Absalão and Miyaji 2009; and Pimenta, Santos and Absalão 2008) have shown less amphiatlantic and more endemic distributions than previously reported.

There is, however, always the issue of introduction of exotic species. We currently know of one Atlantic pyramidellid established in the NEP, *Odetta bisuturalis* (Say 1812). It is currently known only from San Francisco Bay (McLean 2007), but may eventually escape and occur elsewhere on the West Coast. The frequency of reports of exotic pyramidellids in the Mediterranean (Zibrowius 1991, Meinis 2004, Aartsen and Hori 2006, Ozturk and Aartsen 2006) suggests that such events may be locally underreported, and that *O. bisuturalis* is not alone as an introduced species. Given the incompleteness and general disarray of our local species level taxonomy for the group, recognition of such introductions is particularly difficult here in California.



The primary descriptive work on NEP pyramidellids is fairly concentrated. Over an early base laid down by C. B. Adams and P.P. Carpenter, most was done by Dall and Bartsch, and summarized in their monographic review of 1909. Additions of new species continued after this as well (Bartsch 1910, 1912a & b, 1917, 1921, 1927,1937; Smith and Gordon 1948; and Willett 1929). To the south this was augmented by other contributors working in the Panamic fauna (Baker, Hanna & Strong 1928, Strong 1949). Collectively this has resulted in a large mass of described forms, with a number of published, and probably additional unrecognized, synonyms. Resolution of these will, in many cases, depend on critical reexamination of types, a process facilitated by reviews of the works of major contributors (Boss et al 1968, Johnson 1964, Palmer 1958, and Ruhoff 1973). Even with these aids, the material on which some species have been based is poor, particularly when based on beach collected dead shells, as was often the case for Adams, Gould and Carpenter species. Critical examination of these types may prove that some forms are not recognizable, and should be treated as nomena dubia

While we currently struggle under a mass of unneeded synonyms, there are perhaps still many undetected and unnamed new species in local waters. Some of the currently used SCAMIT or agency provisional names may be among these, but these probably reflect uncertainty as to which of the described forms correspondes to the specimens at hand. As the parasitic biology of pyramidellids becomes clearer (Fretter and Graham 1949, Robertson and Orr 1961, Ankel and Christensen 1963, Bullock and Boss 1971) we can recognize that in at least some cases the animals are highly specific to a given food organism (see discussion of Collin and Wise 1997 above). As the diversity of West Coast macrofaunal assemblages is quite high compared to many other regions, we may expect a number of cryptic prey-specific species to be present. All in all a daunting series of problems and complications, but not an insurmountable one. If we can at least achieve greater standardization of name application in our monitoring, we can begin to accumulate the type of ecological information which will lead to more complete understanding of these organisms – a prerequisite to a better understanding of their taxonomy.

List of Pyramidellid genera applicable to West Coast Taxa (bolded taxa indicate recent use in regional publications) – D. Cadien

ODOSTOMIAS

Aartsenia Waren 1991 (replacement name for Amaura Møller 1842, preoccupied seeTurgeon et al 1998)

Besla Dall and Bartsch 1904

Boonea Robertson 1978 – see comments under Chrysallida

Brachystomia Monterosato 1885

Chrysallida Carpenter 1856 (distinctions between this genus and *Boonea* need further exploration, and some taxa assigned here may ultimately be removed to *Boonea* or to *Fargoa*) *Egila* Dall and Bartsch 1904

Eulimella Forbes & MacAndrew 1846 (includes taxa assigned to *Ptycheulimella* Sacco 1892, which, according to Aartsen et al 1998 is not well enough defined for recognition *Eulimastoma* Bartsch 1916 (pyramidellid species previously assigned to *Scalenostoma* Deshayes 1863 are removed to this genus since *Scalenostoma* has proven to be a eulimid (Warén 1980)

Evalea A. Adams 1860

Evalina Dall and Bartsch 1904 Haldra Dall and Bartsch 1904 Heida Dall and Bartsch 1904 Iolaea A. Adams 1867



Ivara Dall and Bartsch 1903

Ividella Dall and bartsch 1909

Ividia Dall and Bartsch 1904 (replacement name for American species of *Miralda* not conspecific with the type of the genus per Ode 1993, but a junior synonym of *Liamorpha* Pilsbry 1898 according to Aartsen et al 1998)

Liamorpha Pilsbry 1898 -see comments under Ividia

Menestho Møller 1842

Odetta de Folin 1870

Odostomia Fleming 1813

Oscilla A. Adams 1861 [added per P. Lafollette]

Salassia de Folin 1870

Salassiella Dall and Bartsch 1909

Trabecula Monterosato 1884

TURBONILLAS

Bartschella Iredale 1917

Careliopsis Mörch 1875

Chemnitzia Orbigny 1839

Mormula A. Adams 1864

Pyrgiscus Philippi 1841

Pyrgolampros Sacco 1892

Strioturbonilla Sacco 1892

Turbonilla Risso 1826

OTHER PYRAMIDELLIDS

Longchaeus Mörch 1875

Pyramidella Lamarck 1799

Peristichia Dall 1889

Diagnoses of genera of potential use for West Coast species (drawn from the literature) - D. Cadien

Aartsenia Warén 1991

Very large, usually inflated Odostomias, the sculpture of which consists of very fine lines of growth and still finer wavy closely placed spiral striations." (Dall and Bartsch 1909 – for Amaura).

Besla Dall and Bartsch 1904

"Small odostomias with axial ribs and three strong spiral raised threads, one at and two posterior to the periphery between the sutures; based marked by raised spiral threads." (Dall and Bartsch 1909).

Boonea Robertson 1978

"Shell thick, chalky white, conical, 3-5mm in length, with 4-5 adult whorls. Whorls with or without spiral cords, axial ribs or both. Body whorl 50% of shell length. Umbilicus minute or absent. Protoconch smooth, sinistrally heterostrophic oriented 120°-130° to teloconch, partially submerged in first adult whorl. Aperture auriform, with single acute columellar fold. Operculum tan or brown, auriform, paucispiral, with subcentric nucleus." (Wise 1996).



Brachystomia Monterosato 1885

"Bocca corta, labbro non dentato, conchiglie piccole, levigate, rissoiformi o turricolate. Un piccolo dente alla columella." [Aperture short, lip non-denticulate, shell small, smooth, rissoiform or turriculate. Small tooth on the columella. Translation courtesy of Pat Lafollette] (Monterosato 1885).

Chrysallida Carpenter 1856

"Odostomias having strong axial ribs crossed by equally strong spiral keels between the sutures, the intersection of these to elements forming nodules. The axial ribs pass only faintly over the base, while the spiral sculpture remains quite prominent." (Dall and Bartsch 1909).

Egila Dall and Bartsch 1904

"Odostomias with the axial ribs extending from the summit of the whorls to the umbilical region; periphery with a deep sulcus bounded on each side by a tumid area; the base is spirally striated." (Dall and Bartsch 1909).

Eulimella Forbes & MacAndrew 1846

"Elongate-conic, surface polished, with faint growth lines and microscopic spiral striations; base without a fasciole; columella with 2 folds." (Abbott 1974).

Eulimastoma Bartsch 1916

"2-5mm., high-spired, with a single columellar plication. Base of whorl with angulation or keep. 2 nuclear whorls, almost planorboid, partially immersed. Without axial sculpture. With or without a small umbilicus." (Abbott 1974).

Evalea A. Adams 1860

"Odostomias having the surface marked by fine incised spiral lines." (Dall and Bartsch 1909).

Evalina Dall and Bartsch 1904

"Odostomias having feebly developed axial ribs which are usually only indicated near the summit of the whorls; spiral sculpture consisting of many finer lirations; summit of the whorls not tabulated." (Dall and Bartsch 1909).

Haldra Dall and Bartsch 1904

"Odostomias with more or less irregular, acute axial ribs extending from the summits of the whorls to the umbilical region, crossed by subequally spaced acute spiral ridges between the sutures and on the base. The intersections of the ribs and spiral ridges are thickened, but scarcely nodulose, ending the shell a very rough appearance." (Dall and Bartsch 1909).

Heida Dall and Bartsch 1904

"Shell without axial or spiral sculpture beyond mere lines of growth and exceedingly fine spiral striations; peritreme continuous, aperture rissoid." (Dall and Bartsch 1909).

Iolaea A. Adams 1867

"Shell umbilicated, marked by spiral cords, and axial riblets which cross the grooves between them." (Dall and Bartsch 1909).

Ivara Dall and Bartsch 1903

"Odostomias having feebly developed axial ribs which are usually only indicated near the summits of the whorls; spiral sculpture consisting of many subequally spaced fine lirations; summits of the whorls strongly tabulated." (Dall and Bartsch 1909).



Ividella Dall and Bartsch 1909

"Odostomias marked with lamellar spiral ridges and equally strong lamellar axial ribs, both of which ornament spire and base." (Dall and Bartsch 1909).

Liamorpha Pilsbry 1898

"Odostomias with very strong spiral keels between the sutures and on the base. Upper keels usually nodulated." (Abbott 1974 for Miralda).

Menestho Møller 1842

"Shell not umbilicated, marked by moderately well developed and usually equally spaced spiral cords; axial sculpture reduced to mere lines of growth which frequently appear as very slender raised threads in the grooves between the cords." (Dall and Bartsch 1909).

Odetta de Folin 1870

Odostomia Fleming 1813

"Shell white or yellowish, short, conical, 3-5mm in length, with 4-6 adult whorls. Whorls smooth to cancellate. Body whorl 50-60% of shell length. Umbilicus small or absent. Protoconch smooth, dextrally or sinistrally heterostrophic oriented 120°-150° to teleoconch, partially submerged in first adult whorl. Aperture ovate, with single acute columella fold. Operculum brown, ovate, paucispiral, with subcentral nucleus." (Wise 1996).

Oscilla A. Adams

Salassia de Folin 1870

"Shell pupiform, whorls not inflated, marked by axial ribs which extend from the tabulated summit of the whorl to the umbilical area. Varices absent" (Dall and Bartsch 1909).

Salassiella Dall and Bartsch 1909

"Shell pupiform, whorls inflated, marked by axial ribs which extend undiminished from the summit to the umbilical area. Varices strong, irregularly distributed" (Dall and Bartsch 1909).

Trabecula Monterosato 1884

"Spiral markings consisting of several to many raised threads in the intercostal spaces, always less strongly developed than the axial ribs. Intercostal spaces crossed by equally spaced, raised spiral threads, sculpture reticulated" (Dall and Bartsch 1909).

TURBONILLAS

Bartschella Iredale 1917

"Turbonillas with well-rounded whorls, marked with strong axial ribs and strong spiral cords, the junction of which are usually subnodulose." (Abbott 1974).

Careliopsis Mörch 1875

"Shell minute, slender, thin, white, with very fine reticulated sculpturing." (Abbott 1974).

Chemnitzia Orbigny 1839

"Turbonillas without spiral sculpturing, having prominent axial ribs which fuse or terminate at the periphery. Intercostal areas sunken. Base smooth." (Abbott 1974).



Mormula A. Adams 1864

"Turbonillas having axial ribs and deeply incised spiral lines; also irregularly disposed varices on the outer surface, which usually mark internal lirations on the outer lip, or internal lirations of the outer lip only. Sculpture never nodulose." (Dall and Bartsch 1909).

Pyrgiscus Philippi 1841

"Turbonillas having strong spiral incised grooves as well as axial ribs. Summits of the whorls not strongly shouldered." (Abbott 1974).

Pyrgolampros Sacco 1892

"Turbonillas with low, broad, rounded vertical ribs which almost always disappear as they pass over the periphery and base of the last whorl, and many very fine, faint, wavy spiral striations; surface covered by a thin epidermis. Columella usually somewhat flexuose." (Dall and Bartsch 1909).

Strioturbonilla Sacco 1892

"Ribbed turbonillas with finely and closely packed spiral striations on the spire and base." (Abbott 1974).

Turbonilla Risso 1826

"Shell white and lanceolate, 9mm in length, with 10-12 adult whorls. Whorls slightly convex to straight. Each whorl with prominent axial ribs, extending whorl length, except on body whorl, where axial ribs terminate prior to base. Intervening spaces present between ribs. Body whorl 20% of shell length. Umbilicus absent. Protoconch smooth, sinistrally heterostrophic, perpendicular to teleoconch, partially submerged in first adult whorl. Aperture squarish, with straight outer lip and slightly flared base. Columellar folds absent. Operculum tan, lenticular, with subcentric nucleus." (Wise 1996).

OTHER PYRAMIDELLIDS

Longchaeus Mörch 1875

"Shell elongate-conic, not umbilicated, having three columellar folds, a basal fasciole and peripheral sulcus. The entire surface is marked by fine lines of growth and microscopic spiral striations." (Dall and Bartsch 1909).

Pyramidella Lamarck 1799

"Shell of many whorls, turrited, umbilicated; columella with three folds; outer lip usually reenforced within, at irregular intervals, by spiral lamellar thickenings. The sculpture consists of mere lines of growth and very fine spiral striations." (Dall and Bartsch 1909).

Peristichia Dall 1889

"Shell elongate, small, white, spirally corded, similar to Triptychus, but with only 1 basal spiral cord (instead of 2) and lacking columella folds." (Abbott 1974).



22 NOVEMBER 2010, SPIONIDAE, NHMLAC

Attendance: Kathy Langan, CSD; Veronica Rodriguez, CSD; Ron Velarde, CSD; Tony Phillips, CLAEMD; Kelvin Barwick, OCSD; Larry Lovell, LACSD; Leslie Harris, LACM; Vasily Radashevsky, IMB RAS.

The meeting opened with President Larry Lovell making a few brief announcements: There will be a Crustacean literature meeting Friday, Dec 10, at LACSD from 9:30-3:30. Don Cadien will lead a review of new crustacean literature that affects Ed 5 name usage. Mary Wicksten will be attending the meeting and sharing her work on SCB shrimp and other Decapoda.

After the opening announcements Vice-President Leslie Harris had the floor and introduced guest speaker Dr. Vasily Radachevsky, polychaete researcher at the Zhirmunsky Institute of Marine Biology, Russian Academy of Sciences, Vladivostok, Russia. Leslie and Vasily had just returned from a PICES meeting on invasive species in Portland, Oregon. Leslie will report on the conference and associated collecting activities in a future newsletter. It was a wonderful conference and Leslie provided information to the attendees on the taxonomic work done by SCAMIT and its members. On their return to Los Angeles many intertidal collecting stops were made looking for spionids and other polychaetes of interest along the coastline.

Vasily then began a discussion on his recent work on Eastern Pacific Spionidae with updates to local species names and reports of non-indigenous species. He gave a Powerpoint presentation with beautiful color images of live worms and collecting localities. There were species pages that presented both historical and new information. Species within the genera *Polydora*, *Pygospio*, *Boccardiella*, *Dipolydora*, *Boccardia*, and *Rhynchospio* were discussed. Vasily will publish updates and corrections to species descriptions, distributions, character states, and correct name usage on several species in these genera very soon.

He also reported on his participation at a recent polychaete taxonomic workshop in Bath, England. He was invited to attend and give a talk on the family Spionidae. He presented a "Key to genera of Spionidae recorded from or likely to be found in shallow waters around Britain and Ireland". Of course many of those genera are found off our coast, but not necessarily the same species. Three genera we don't report on the west coast that showed up in the key were *Atherospio*, (closely related to *Pseudatherospio*), *Laubieriellus*, and *Aurospio*, both closely related to *Prionospio*.

Vasily then was able to spend time looking at a few specimens of interest that members brought to share or about which they had questions. He reiterated his desire to receive spionid specimens from any location for deposit into his Institute's polychaete collection. Complete specimens in good condition are of course preferred.

10 DECEMBER 2010, LACSD, CRUSTACEA LITERATURE REVIEW

A report from this meeting is still pending and will be provided in a future issue. However, the bibliographies distributed that day are at the end of this newsletter.



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

SCAMIT OFFICERS

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

President Larry Lovell (310)830-2400X5613 llovell@lacsd.org
Vice-President Leslie Harris (213)763-3234 lharris@nhm.org
Secretary Megan Lilly (619)758-2336 mlilly@sandiego.gov
Treasurer Cheryl Brantley (310)830-2400x5605 cbrantley@lacsd.org

Hard copy back issues of the newsletter are available. Prices are as follows:

 Volumes 1 - 4 (compilation)
 \$ 30.00

 Volumes 5 - 7 (compilation)
 \$ 15.00

 Volumes 8 - 15
 \$ 20.00/vol.

Single back issues are also available at cost.

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:

SCAMIT

C/O The Natural History Museum, Invertebrate Zoology

attn: Leslie Harris

900 Exposition Boulevard Los Angeles, California, 90007

A bibliography of some of the relevant Mollusk literature published since 2008. Compiled by Don Cadien and Kelvin Barwick (last revised 1NOV2010)

- Behrens, D. W., M. T. Gosliner, et al. (2009). "A New Species of Dorid Nudibranch (Mollusca) from the Revillagigedo Islands of the Mexican Pacific." Proceedings of the California Academy of Sciences **60**(11): 423-429.
- Bertsch, H., A. Valdes, et al. (2009). "A New Species of Tritoniid Nudibranch, the First Found Feeding on a Zoanthid Anthozoan, with a Preliminary Phylogeny of the Tritoniidae." Proceedings of the California Academy of Sciences **60**(12): 431-446.
- Bieler, R., J. G. Carter, et al. (2010). "CLASSIFICATION OF BIVALVE FAMILIES." MALACOLOGIA **52**(2): 1-184.
- Bouchet, P. and J.-P. Rocroi (2010). "NOMENCLATOR OF BIVALVE NAMES OF THE FAMILY-GROUP AND ABOVE." MALACOLOGIA **52**(2): 1-184.
- Camacho-García, Y. E. and T. M. Gosliner (2008). "Systematic revision of *Jorunna* Bergh, 1876 (Nudibranchia: Discodorididae) with a morphological phylogenetic analysis." Journal of Molluscan Studies **74**: 143-181.
- Dance, S. P. (2009). "A name is a name: some thoughts and personal opinions about molluscan scientific names." Zool. Med. Leiden **83**(7): 565-576.
- Geiger, D. L. and J. H. McLean (2010). "New species and records of Scissurellidae and Anatomidae from the Americas (Mollusca: Gastropoda: Vetigastropoda)." Zootaxa (2356): 1-35.
- Glover, E. A. and J. D. Taylor (2009). "Needles and Pins: Acicular Crystalline Periostracal Calcification in Venerid Bivalves (Bivavia: Veneridae)." Journal of Molluscan Studies Advance Access **00**: 1-23.
- Golding, R. E., W. F. Ponder, et al. (2009). "The evolutionary and biomechanical implications of snout and proboscis morphology in Caenogastropoda (Mollusca: Gastropoda)." Journal of Natural History **43**: 2723-2763.
- Gosliner, T. M., M. M. González-Duarte, et al. (2007). "Revision of the systematics of *Babakina* Roller, 1973 (Mollusca: Opisthobranchia) with the description of a new species and a phylogenetic analysis." Zoological Journal of the Linnean Society **151**(4): 671-689.
- Kamenev, G. M. (2009). "North Pacific Species of the Genus *Solemya* Lamarck, 1818 (Bivalvia: Solemyidae), with Notes on *Acharax johnsoni* (Dall, 1891)." Malacologia **51**(2): 233–261.
- Kantor, Y. I., N. Pullandre, et al. (2008). "Morphological proxies for taxonomic decision in turrids (Mollusca, Neogastropoda): a test of the value of shell and radula characters using molecular data." Zoological Science **25**: 1156-1170.
- Klussmann-Kolb, A., A. Dinapoli, et al. (2008). "From sea to land and beyond new insights into the evolution of euthyneuran Gastropoda (Mollusca)." BMC Evolutionary Biology **8**(57): 1-16.
- Krug, P. J., R. A. Ellingson, et al. (2007). "A new poecilogonous species of sea slug (Opisthobranchia: *Sacoglossa*) from California: comparison with the planktotrophic congener *Alderia modesta* (Lovén, 1844)." Journal of Molluscan Studies **73**: 29-38.
- Petit, R. E. (2007). "Lovell Augustus Reeve (1814–1865): malacological author and publisher." Zootaxa **1648**: 1-120.
- Petit, R. E. (2009). "George Brettingham Sowerby, I, II & III: their conchological publications and Molluscan taxa." Zootaxa (2189): 1-218.

- Scheltema, A. H. and D. L. Ivanov (2009). "A natural history of the deep-sea aplacophoran *Prochaetoderma yongei* and its relationship to confamilials (Mollusca, Prochaetodermatidae)." Deep-Sea Research II **56**: 1856-1864.
- Semenikhina, O. Y. A., N. K. Kolotukhna, et al. (2008). "Morphology of larvae of the family Mytilidae (Bivalvia) from the north-western part of the Sea of Japan." Journal of the Marine Biological Association of the United Kingdom **88**(2): 331-339.
- Sigwart, J. D. and M. D. Sutton (2007). "Deep molluscan phylogeny: synthesis of palaeontological and neontological data." Proceedings of the Royal Society of London, B. Biological Sciences **274**: 2413-2419.
- Stout, C. C., M. Pola, et al. (2010). "Phylogenetic analysis of *Dendronotus* nudibranchs with emphasis on Northeastern Pacific species." Journal of Molluscan Studies **76**(3): 1-9.
- Taylor, J. D., S. T. Williams, et al. (2007). "A molecular phylogeny of heterodont bivalves (Mollusca: Bivalvia: Heterodonta): new analyses of 18S and 28S rRNA genes." Zoologica Scripta **36**(6): 587-606.
- Valentich-Scott, P. and C. Skoglund (2010). "A review of the Recent Pandoridae (Bivalvia) in the Panamic Province, with descriptions of three new species." The Nautilus **124**(2): 55-76.
- Wilson, N. G., D. Huang, et al. (2009). "Field collection of Laevipilina hyalina McLean, 1979 from southern California, the most accessible living monoplacophoran." Journal of Molluscan Studies 75: 195-197.

Phylogeny and Evolution of the Mollusca by Ponder and Lindberg

- Aktipis, S. W., G. Giribet, et al. (2008). Gastropoda: an overview and analysis. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 201-237.
- Geiger, D. L., A. Nützel, et al. (2008). Vetigastropoda. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 297-330.
- Giribet, G. (2008). Bivalvia. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 105-141.
- Haszprunar, G., C. Schander, et al. (2008). Relationships of Higher Molluscan Taxa. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 19-32.
- Lindberg, D. R. (2008). Patellogastropoda, Neritimorpha, and Cocculinoidea: the low-diversity gastropod clades. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 271-296.
- Mordan, P. and C. M. Wade (2008). Heterobranchia II: the Pulmonata. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 409-426.
- Nishiguchi, M. K. and R. H. Mapes (2008). Cephalopoda. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 163-199.
- Ponder, W. F. and D. R. Lindberg (2008). Molluscan Evolution and Phylogeny: an introduction. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 1-17.
- Ponder, W. F. and D. R. Lindberg, Eds. (2008). Phylogeny and Evolution of the Mollusca. Berkeley, California, U.S.A., University of California Press.

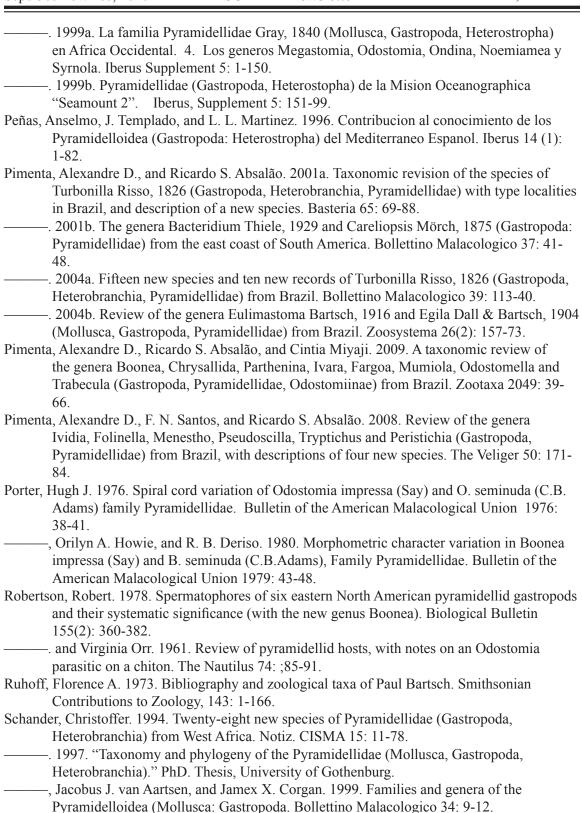
- Reynolds, P. D. and G. Steiner (2008). Scaphopoda. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 143-161.
- Simison, W. B. and J. L. Boore (2008). Molluscan Evolutionary Genomics. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 447-461.
- Todt, C., A. Okusu, et al. (2008). Solenogastres, Caudofoveata, and Polyplacophora. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 71-96.
- Wägele, H., A. Klussmann-Kolb, et al. (2008). Heterobranchia I: the Opisthobranchia. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 385-408.
- Wanninger, A., D. Koop, et al. (2008). Molluscan Evolutionary Development. Phylogeny and Evolution of the Mollusca. W. F. Ponder and D. R. Lindberg. Berkeley, California, U.S.A., University of California Press: 427-445.

Pyramidellid Literature Cited

- Aartsen, Jacobus J. van, and James X. Corgan. 1996. Thiele's pyramidellacean gastropod names. Basteria 60: 177-82.
- Aartsen, Jacobus J. van, E. Gittenberger, and J. Goud. 1998. Pyramidellidae (Mollusca, Gastropoda, Heterobranchia) collected during the Dutch CANCAP adn MAURITANIA expeditions in the south-eastern part of the North Atlantic Ocean (part 1). Zoologische Verhandelingen 321(15): 1-57.
- ———. 2000. Pyramidellidae (Mollusca, Gastropoda, Heterobranchia) collected during the Dutch CANCAP adn MAURITANIA expeditions in the south-eastern part of the North Atlantic Ocean (part 2). Zoologische Mededelingen 74: 1-50.
- Aartsen, Jacobus J. van, and S. Hori. 2006. Indo-Pacific migrants in the Mediterranean 2. Monotigma tauta (A. Adams 1853) and Leucotina natalensis Smith 1910 (Gastropoda, Pyramidellidae). Basteria 70: 1-6.
- Aartsen, Jacobus J. van, and H. P. M. G. Menkhorst. 1996. Nordsiek's Pyramidellidae (Gastropoda: Prosobranchia): a revision of the types. Part 1. The genera Chrysallida, Ondina (s. n. Evalea) and Menestho. Basteria 60: 45-56.
- Abbott, R. Tucker. 1974. American Seashells. New York, N.Y.: Van Norstrand Reinhold Company.

- Ankel, Friderun, and Aage Møller Christensen. 1963. Non-specificity in host selection by Odostomia scalaris MacGillivray. Videnskabelige Meddelelser FrÍ Dansk Naturhistorisk Forenening 125: 321-25.
- Baker, Fred, G. Dallas Hanna, and A. M. Strong. 1928. Some Pyramidellidae from the Gulf of California. Proceedings of the California Academy of Sciences, Fourth Series 17(7): 205-46.
- Bartsch, Paul. 1909a. Pyramidellidae of New England and the adjacent region. Proceedings of the Boston Society of Natural History 34(4): 67-113.
- . 1909b. More notes on the family Pyramidellidae. The Nautilus 23(4): 54-59.
- ——. 1910. New marine shells from the northwest coast of America. The Nautilus 23(11): 136-38.
- ——. 1912a. Additions to the west American pyramidellid mollusk fauna, with descriptions of new species. Proceedings of the United States National Museum 42(1903): 261-89.
- ——. 1912b. A zoogeographic study based on the pyramidellid mollusks of the West Coast of America. Proceedings of the United States National Museum 42(1906): 297-349.
- ———. 1916. Eulimastoma, a new subgenus of pyramidellids, and remarks on the genus Scalenostoma. The Nautilus 30(7): 73-74.
- ——. 1917. Descriptions of new west American marine mollusks and notes on previously described forms. Proceedings of the United States National Museum 52(2193): 637-81.
- ——. 1921. New marine mollusks from the West Coast of America. Proceedings of the Biological Society of Washington 34: 25-32.
- ——. 1927. New west American marine mollusks. Proceedings of the United States National Museum 70 (2660): 1-36.
- Baxter, Rae. 1987. Mollusks of Alaska. Shells and Sea-Life Publications, Bayside, California.
- Boss, Kenneth J., Joseph Rosewater, and Florence A. Ruhoff. 1968. The zoological taxa of William Healey Dall. United States National Museum Bulletin 287: 1-427.
- Bullock, Robert C., and Kenneth J. Boss. 1971. Non-specificity of host-selection in the ectoparasitic snail Odostomia (Menestho) bisuturalis (Say)(Gastropoda: Pyramidellidae). Breviora 363: 1-7.
- Collin, Rachel, and John B. Wise. 1997. Morphology and development of Odostomia columbiana Dall and Bartsch (Pyramidellidae): Implications for the evolution of gastropod development. Biological Bulletin 192(2): 243-52.
- Corgan, James X. 1973a. Nomenclatural notes on West Coast Odostomia (Gastropoda: Pyramidellacea). Veliger 15 (4): 357-58.
- ———. 1973b. Odostomia minutissima Dall & Bartsch, 1909 a synonym of Odostomia raymondi Dall & Bartsch, 1909. Veliger 15(4): 359-60.
- Dall, William Healey, and Paul Bartsch. 1904. Synopsis of the genera, subgenera and sections of the family Pyramidellidae. Proceedings of the Biological Society of Washington 17: 1-16.
- ——. 1906. Notes on Japanese, Indopacific, and American Pyramidellidae. Proceedings of the United States National Museum 30(1452): 321-69.
- ——. 1907. The pyramidellid mollusks of the Oregonian faunal area. Proceedings of the United States National Museum 33(1574): 491-534.
- ——. 1909. A monograph of West American Pyramidellid Mollusks. United States National Museum Bulletin, 68: 1-258.

- Fretter, Vera, and Alistair Graham. 1949. The structure and mode of life of the Pyramidellidae, parasitic opisthobranchs. Journal of the Marine Biological Association of the United Kingdom 28: 493-532.
- Gould, Augustus Addison. 1853. Descriptions of shells from the Gulf of California and the Pacific coasts of Mexico and California. Journal of the Boston Society of Natural History 6(3): 374-408.
- Grant IV, U. S., and Hoyt Rodney Gale. 1931. Catalogue of the Marine Pliocene and Pleistocene Mollusca of California. Memoirs of the San Diego Society of Natural History 1: 1-1036.
- Johnson, Richard I. 1964. The recent Mollusca of Augustus Addison Gould. United Staes National Museum Bulletin 239: 1-182.
- Keen, A. Myra. 1971. Sea Shells of Tropical West America, marine mollusks from Baja California to Peru, second edition. Stanford, California: Stanford University Press.
- Keep, Josiah. 1935. West Coast Shells. A Description in Familiar Terms of the Principal Marine, Fresh-water, and Land Mollusks of the United States, British Columbia, and Alaska, found West of the Sierra. Stanford, Ca: Stanford University Press.
- LaFollette, Patrick I. 1979. Observations on the larval development and behavior of Chrysallida cincta Carpenter, 1864 (Gastropoda: Pyramidellidae). Western Society of Malacologists, Annual Report 11: 31-34.
- McLean, James Hamilton. 1969. Marine shells of southern California. Los Angeles County Museum of Natural History; Science Series 24 Zoology 11: 1-104.
- ———. 2007. Shelled Gastropoda. Pp. 713-753 IN: The Light and Smith Manual: Intertidal Invertebrates from Central California to Oregon. 4th edition. James T. ed. Carlton. 1001pp. Berkeley, California, U.S.A.: University of California Press.
- Meinis, Hendrik K. 2004. New data concerning the presence of Lessepsian and Indo-Pacific migrants among the molluscs in the Mediterranean Sea with emphasise on the situation in Israel. Pp. 117-131 IN: Proceedings of the Ist National Malacology Congress, eds. Bilal Osturk, and A. Salman, 117-31Istanbul, Turkey: Turkish Marine Research Foundation.
- Ode, H. 1993. Distribution and records of the marine Mollusca in the northwest Gulf of Mexico (a continuing monograph. Texas Conchologist 29(3): 53-67.
- ——. 1996. A list of turbonillid taxa from the west coast of the Americas. Texas Conchologist 33(1): 1-36.
- Oldroyd, Ida Shepard. 1927. The Marine Shells of the West Coast of North America. Volume 2 Part 2. Stanford, Ca: Stanford University Press.
- Ozturk, Bilal, and Jacobus J. van Aartsen. 2006. Indo-Pacific species in the Mediterranean. 5. Chrysallida micronana nom. nov. for Chrysallida nana (Hornung and Mermod, 1924) (Gastropoda: Pyramidellidae). Aquatic Invasions 1(4): 341-344.
- Palmer, Katherine van Winkle. 1958. Type specimens of marine Mollusca described by P. P. Carpenter from the West Coast (San Diego to British Columbia). Geological Society of American, Memoir. 76: 1-376.
- Peñas, Anselmo, and Emilio Rolán. 1997a. La familia Pyramidellidae Gray, 1840 (Mollusca, Gastropoda, Heterostropha) en Africa Occidental. I. El genero Sayella Dall, 1855. Iberus 15: 35-40.
- . 1997b. La familia Pyramidellidae Gray, 1840 (Mollusca, Gastropoda, Heterostropha) en Africa Occidental. 2. Los generos Turbonilla y Eulimella. Iberus Supplement 3: 1-105.
- ——. 1998. La familia Pyramidellidae Gray, 1840 (Mollusca, Gastropoda, Heterostropha) en Africa Occidental. 3. El genero Chrysallida s. l. Iberu Supplement 4: 1-73.



-, Kenneth M. Halanych, Thomas Dahlgren, and Per Sundberg. 2003. Test of the monophyly of Odostomiinae and Turbonilliinae (Gastropoda, Heterobranchia, Pyramidellidae) based on 16S mtDNA sequences. Zoologica Scripta 32(3): 243-54.

- ———, S. Hori, and J. Lundberg. 1999. Anatomy, phylogeny and biology of Odostomella and Herviera, with the description of a new species of Odostomella (Mollusca, Heterostropha, Pyramidellidae). Ophelia 51(1): 39-76.
- ———, and Per Sundberg. 2001. Useful characters in gastropod phylogeny: Soft information or hard facts? Systematic Biology 50(1): 136-41.
- Smith, Allyn G., and M. Gordon Jr. 1948. The marine mollusks and brachiopods of Monterey Bay, California, and vicinity. Proceedings of the California Academy of Sciences, Fourth Series 26(8): 147-245.
- Strong, A. M. 1949. Additional Pyramidellidae from the Gulf of California. Bulletin of the Southern California Academy of Sciences 48(2): 71-93.
- Turgeon, Donna D., James F. Jr. Quinn, Arthur E. Bogan, Eugene V. Coan, Frederick G.
 Hochberg, William G. Lyons, Paula M. Mikkelsen, Richard J. Neves, Clyde F. E. Roper,
 Gary Rosenberg, Barry Roth, Amélie Scheltema, Fred G. Thompson, Michael Vecchione,
 and James D. Williams. 1998. Common and Scientific Names of Aquatic Invertebrates
 from the United States and Canada: Mollusks, second edition. American Fisheries
 Society Special Publication 26,526pp. Bethesda, Maryland.
- Warén, Anders. 1980. Revision of the genera Thyca, Stilifer, Scalenostoma, Mucronalia and Echineulima (Mollusca, Prosobranchia, Eulimidae). Zoologica Scripta 9: 187-210.
- ——. 1991. New and little known Mollusca from Iceland. Sarsia 76: 1-28.
- Wise, John B. 1996. Morphology and phylogenetic relationships of certain pyramidellid taxa (Heterobranchia). Malacologia 37(2): 443-511.
- Zibrowius, Helmut. 1991. Ongoing modification of the Mediterranean marine fauna and flora by the establishment of exotic species. Mesogee 51: 83-107.

Local Faunal Arthropod Updates

- Ashton, Gail V., Eva I. Riedlecker, and Gregory M. Ruiz. 2008. First non-native crustacean established in coastal waters of Alaska. *Aquatic Biology* 3, no. 2: 133-37.
- Baba, Keiji, Enrique MacPherson, Gary C. B. Poore, Shane T. Ahyong, Adriana Bermudez, Patricia Cabezas, Chia-Wei Lin, Martha Nizinski, Celso Rodrigues, and Kareen E. Schnabel. 2009. Catalogue of squat lobsters of the world (Crustacea: Decapoda: Anomura families Chirostylidae, Galatheidae and Kiwaidae). *Zootaxa*, no. 1905.
- Bamber, Roger N. 2007. A holistic re-interpretation of the phylogeny of the Pycnogonida Latreille, 1810 (Arthropoda). *Zootaxa*, no. 1668: 295-312.
- Bellan-Santini, Denise, and Jean Claude Dauvin. 2008. Contribution to knowledge of the genus *Haploops*, a new location of *Haploops lodo* (Crustacea: Amphipoda: Ampeliscidae) from the bathyal North Atlantic Ocean with a complement to the description of the species. *Journal of Natural History* 42, no. 13-14: 1065-77.
- Bird, Graham J., and Kim Larsen. 2009. Tanaidacean phylogeny the second step: the basal Paratanaoidean families (Crustacea: Malacostraca). *Arthropod Systematics & Phylogeny* 67, no. 2: 137-58.
- Blazewicz-Paszkowycz, Magdalena. 2007. A revision of the family Typhlotanaidae Sieg 1984 (Crustacea: Tanaidacea) with the remarks on the Nototanaidae Sieg, 1976. *Zootaxa*, no. 1598: 3-141.
- Braby, Caren E., Vicki B. Pearse, Bonnie A. Bain, and Robert C. Vrijenhoek. 2009. Pycnogonid-cnidarian trophic interactions in the deep Monterey Submarine Canyon. *Invertebrate Biology* 128, no. 4: 359-63.
- Bruce, A. J. 2008. Deep water *Periclimenes* from the Eastern Pacific Region (Decapoda, Pontoniinae). *Crustaceana* 81, no. 8: 1007-11.
- Bruce, Niel L., and Regina Wetzer. 2008. New Zealand exports: *Pseudosphaeroma* Chilton, 1909 (Isopoda: Sphaeromatidae), a Southern Hemisphere genus introduced to the Pacific coast of North America. *Zootaxa*, no. 1908: 51-56.
- Cabezas, M. Pillar, Jose M. Guerra-Garcia, Elena Baeza-Rojano, Susana Redondo-Gomez, M. Enrique Figueroa, Teresa Luque, and J. Carlos Garcia-Gomez. 2010. Exploring molecular variation in the cosmopolitan *Caprella penantis* (Crustacea: Amphipoda): results from RAPD analysis. *Journal of the Marine Biological Association of the United Kingdom* 90, no. 3: 617-22.
- Cadien, Donald B. 2007. "Ampeliscoidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.
- Cadien, Donald B. 2007. "Bogidielloidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.
- Cadien, Donald B. 2007. "Dexaminoidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.
- Cadien, Donald B. 2007. "Gammaroidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.
- Cadien, Donald B. 2007. "Lysianassoidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.
- Cadien, Donald B. 2007. "Melphidippoidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.

- Cadien, Donald B. 2007. "Stegocephaloidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.
- Cadien, Donald B. 2008. "Hadzioidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.
- Cadien, Donald B. 2008. "Pontoporeioidea of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): a review." Web page. Available at http://scamit.org/taxonomic tools/htm.
- Campos, Ernesto. 2006. Systematics of the genus *Scleroplax* Rathbun, 1893 (Crustacea: Brachyura: Pinnotheridae). *Zootaxa*, no. 1344: 33-41.
- Campos, Ernesto. 2009. A new species and two new genera of pinnotherid crabs from the northeastern Pacific Ocean, with a reappraisal of the subfamily Pinnotherinae de Haan, 1833 (Crustacea: Brachyura: Pinnotheridae). *Zootaxa*, no. 2022: 29-44.
- Campos, Ernesto, Alma R. De Campos, and Ivan Manriquez. 2009. Intertidal thalassinidean shrimps (Thalassinidea, Callianassidae and Upogebiidae) of the West Coast of Baja California, Mexico: annotated checklist, key for identification, and symbionts. *Crustaceana* 82, no. 10: 1249-63.
- Cassone, Bryan J., and Elizabeth G. Boulding. 2006. Genetic structure and phylogeography of the lined shore crab, *Pachygrapsus crassipes*, along the northeastern and western Pacific coasts. *Marine Biology* 149: 213-26.
- Cerda, Osvaldo, Ivan A. Hinojosa, and Martin Thiel. 2010. Nest-building behavior by the amphipod *Peramphithoe femorata* (Kroyer) on the kelp *Macrocystis pyrifera* (Linnaeus) C. Agardh from Northern-Central Chile. *Biological Bulletin* 218: 248-58.
- Cook, Elizabeth J., Kate J. Willis, and M. Lozano-Fernandez. 2007. Survivorship, growth and reproduction of the non-native *Caprella mutica* Schurin, 1935 (Crustacea: Amphipoda). *Hydrobiologia* 590: 55-64.
- Crowe, Stacie E. 2006. A redescription of *Leucothoe spinicarpa* (Abildgaard, 1789) based on material from the North Atlantic (Amphipoda: Leucothoidae). *Zootaxa*, no. 1170: 57-68.
- Diffenthal, Mark, and Tammy Horton. 2007. *Stephonyx arabiensis* (Crustacea: Amphipoda: Lysianassoidea: Uristidae), a new deep-water scavenger species from the Indian Ocean, with a key to the genus *Stephonyx*. *Zootaxa*, no. 1665: 31-41.
- Drumm, David T., and Richard W. Heard. 2007. Redescription of *Mesokalliapseudes crassus* (Menzies, 1953) (Crustacea: Tanaidacea: Kalliapseudidae): the first record of a hermaphroditic kalliapseudid. *Proceedings of the Biological Society of Washington* 120, no. 4: 459-68.
- Dvoretsky, Alexander G., and Vladimir G. Dvoretsky. 2009. Distribution of amphipods *Ischyrocerus* on the red king crab, *Paralithodes camtschaticus*: Possible interactions with the host in the Barents Sea. *Estuarine Coastal and Shelf Science* 82, no. 3: 390-396.
- ———. 2009. Some aspects of the biology of the amphipods *Ischyrocerus anguipes* associated with the red king crab, *Paralithodes camtschaticus*, in the Barents Sea. *Polar Biology* 32, no. 3: 463-69.
- Espinosa-Perez, Maria del Carmen., Michel E. Hendrickx, and Juan J. Morrone. 2009. Identification of generalized tracks for the species of Isopoda (Peracarida) from the eastern Pacific. *Journal of Crustacean Biology* 29, no. 2: 224-31.
- Espinosa-Pérez, M. del Carmen, and Michel E. Hendrickx. 2006. A comparative analysis of biodiversity and distribution of shallow-water marine isopods (Crustacea: Isopoda) from polar and temperate waters in the East Pacific. *Belgian Journal of Zoology* 136, no. 2: 219-47.

- García Madrigal, María del Socorro. 2007. Annotated checklist of the amphipods (Peracarida: Amphipoda) from the tropical eastern Pacific. *Contributions to the Study of East Pacific Crustaceans* 4, no. 2: 63-195.
- Gasca, Rebeca Suárez-Morales Eduardo, and Steven H. D. Haddock. 2007. Symbiotic associations between crustaceans and gelatinous zooplankton in deep and surface waters off California. *Marine Biology* 151: 233-42.
- Gerken, Sarah. 2009. Two new *Cumella* (Crustacea: Cumacea: Nannastacidae) from the North Pacific, with a key to the North Pacific *Cumella*. *Zootaxa*, no. 2149: 50-61.
- Guerra-Garcia, Jose Manuel, and Jose Manuel Tierno de Figueroa. 2009. What do caprellids (Crustacea: Amphipoda) feed on? *Marine Biology* 156, no. 9: 1881-90.
- Haney, Lisa. 2006. North Eastern Pacific species of gnathiid isopods: linking males, females, zupheas, and pranizas. *SCAMIT Newsletter* 24, no.6. Supplement: 6-41.
- Haye, Pilar A. 2007. Systematics of the genera of Bodotriidae (Crustacea: Cumacea). *Zoological Journal of the Linnean Society* 151, no. 1: 1-58.
- Hendler, Gordon, and Masahiro Dojiri. 2009. The contrariwise life of a parasitic, pedomorphic copepod with a non-feeding adult: ontogenesis, ecology, and evolution. *Invertebrate Biology* 128, no. 1: 65-82.
- Hendrycks, Ed A. 2007. A new species of *Valettiopsis* Holmes, 1908 (Crustacea: Gammaridea: Lysianassoidea) from abyssal waters off California. *Zootaxa*, no. 1501: 45-56.
- Jarrin, Jose R. Marin, and Alan L. Shanks. 2008. Ecology of a population of *Lissocrangon stylirostris* (Caridea: Crangonidae), with notes on the occurrence and biology of its parasite, *Argeia pugettensis* (Isopoda: Bopyridae). *Journal of Crustacean Biology* 28, no. 4: 613-21.
- Jensen, Gregory C. 2006. Three new species of *Lebbeus* (Crustacea: Decapoda: Hippolytidae) from the northeastern Pacific. *Zootaxa*, no. 1383: 23-43.
- Jeong, Seung Jin, Ok Hwan Yu, and Hae Lip Suh. 2007. Life history and reproduction of *Jassa slatteryi* (Amphipoda, Ischyroceridae) on a seagrass bed (*Zostera marina* L.) in southern Korea. *Journal of Crustacean Biology* 27, no. 1: 65-70.
- Jones, W. Joe, and Enrique Macpherson. 2007. Molecular phylogeny of the East Pacific squat lobsters of the genus *Munidopsis* (Decapoda: Galatheidae) with the description of seven new species. *Journal of Crustacean Biology* 27, no. 3: 477-501.
- Just, Jean, and George D. F. Wilson. 2007. Revision of *Austrosignum* Hodgson and *Munnogonium* George & Strömberg (Paramunnidae) with descriptions of eight new genera and two new species, (Crustacea: Isopoda: Asellota). *Zootaxa*, no. 1515: 1-29.
- Kilgallen, Niamh M. 2010. A new Antarctic species of *Aristias* Boeck (Crustacea, Amphipoda, Aristiidae), with remarks on the genus in Antarctica. *Zootaxa*, no. 2426: 43-53.
- Kilgallen, Niamh M., Alan A. Myers, and David McGrath. 2007. The genus *Sophrosyne* (Crustacea: Amphipoda: Lysianassoidea) in the North Atlantic, with a confirmation of the status of *S. robertsoni. Journal of the Marine Biological Association of the United Kingdom* 87, no. 5: 1243-46.
- Krapp-Schickel, Gertraud, Carola Lang, Angelo Libertini, and Roland R. Melzer. 2006. *Caprella scaura* Templeton, 1836 sensu lato (Amphipoda: Caprellidae) in the Mediterranean. *Organisms Diversity & Evolution Electronic Supplement* 6, no. 3: 1-18.
- Lee, Chang-Mok, and Lee Kyung-Sook. 2006. *Nippoleucon projectus*, a new species of leuconid cumaceans (Cumacea, Leuconidae) from Korea. *Integrative Biosciences* 10, no. 2: 93-101.

- Lowry, James K., and Helen E. Stoddart. 2010. Sophrosynidae, a new family in the Lysianassoidea (Crustacea: Amphipoda) with a revision of the genus *Sophrosyne*. *Zootaxa*, no. 2370: 1-35.
- McClintock, James B., Margaret O. Amsler, Gil Koplovitz, Charles D. Amsler, and Bill J. Baker. 2009. Observations on an association between the dexaminid amphipod *Polycheria* antarctica F. acanthopoda and its ascidian host *Distaplia cylindrica*. Journal of Crustacean Biology 29, no. 4: 605-8.
- Nagel, Laura, Robert Montgomerie, and Stephen C. Lougheed. 2008. Evolutionary divergence in common marine ectoparasites *Gnathia* spp. (Isopoda: Gnathiidae) on the Great Barrier Reef: phylogeography, morphology, and behaviour. *Biological Journal of the Linnean Society* 94, no. 3: 569-87.
- Pernet, Bruno, Aimee Deconinck, and Lisa Haney. 2010. Molecular and morphological markers for distinguishing the sympatric intertidal ghost shrimp *Neotrypaea californiensis* and *N. gigas* in the Eastern Pacific. *Journal of Crustacean Biology* 30, no. 2: 323-31.
- Pilgrim, Erik M., and John A. Darling. 2010. Genetic diversity in two introduced biofouling amphipods (*Ampithoe valida & Jassa marmorata*) along the Pacific North American coast: investigation into molecular identification and cryptic diversity. *Diversity and Distributions* 16, no. 5: 827-39.
- Prato, Ermelinda, and Francesca Biandolino. 2006. Life history of the amphipod *Corophium insidiosum* (Crustacea: Amphipoda) from Mar Piccolo (Ionian Sea, Italy). *Scientia Marina* 70, no. 3: 355-62.
- Riedlecker, Eva I., Gail V. Ashton, and Gregory M. Ruiz. 2009. Geometric morphometric analysis discriminates native and non-native species of Caprellidae in western North America. *Journal of the Marine Biological Association of the United Kingdom* 89, no. 3: 535-42.
- Sotka, Erik E. 2007. Restricted host use by the herbivorous amphipod *Peramphithoe tea* is motivated by food quality and abiotic refuge. *Marine Biology* 151, no. 5: 1831-38.
- Tandberg, Anne Helene S. 2010. A redescription of *Metopa* species (Amphipoda, Stenothoidae) based on the type material. 3. Natural History Museum, Oslo (NHM). *Zootaxa*, no. 2465: 1-94.
- Valenzuela-Quinonez, Wenceslao, E. Alberto Aragon-Noriega, Joes A. Arreola-Lizarraga, Cesar A. Salinas-Zavala, Salvador E. Lluch-Cota, and Sergio Hernandez-Vazquez. 2006. Habitat use for growth and recruitment of the Pacific yellowleg shrimp, *Farfantepenaeus californiensis* (Decapoda, Penaeidae) on the continental shelf and adjacent Lagna Agiabampo, Mexico. *Crustaceana* 79, no. 8: 933-48.
- Willis, Kate J., Chris M. C. Woods, and Gail V. Ashton. 2009. *Caprella mutica* in the Southern Hemisphere: Atlantic origins, distribution, and reproduction of an alien marine amphipod in New Zealand. *Aquatic Biology* 7: 249-59.
- Wilson, George D. F. 2008. A review of taxonomic concepts in the Nannoniscidae (Isopoda, Asellota), with a key to the genera and a description of *Nannoniscus oblongus* Sars. *Zootaxa*, no. 1680: 1-24.

Arthropod Higher Level Updates

- Ahyong, Shane T., and Simon N. Jarman. 2009. Stomatopod interrelationships: preliminary results based on analysis of three molecular loci. *Arthropod Systematics & Phylogeny* 67, no. 1: 91-98.
- Ahyong, Shane T., Kareen E. Schnabel, and Elizabeth W. Maas. 2009. Anomuran phylogeny: new insights from molecular data. pp. 399-414 IN: *Decapod Crustacean Phylogenetics*. eds. Joel W. Martin, Keith A. Crandall, and Darryl L. Felder, 1-587.
- Boxshall, Geoff A. 2007. Crustacean classification: on-going controversies and unresolved problems. *Zootaxa*, no. 1668: 313-25.
- Boxshall, Geoff A., and Damia Jaume. 2009. Exopodites, epipodites and gills in crustaceans. *Arthropod Systematics & Phylogeny* 67, no. 2: 229-54.
- Boyko, Christopher B., and Alan W. Harvey. 2009. Phylogenetic systematics and biogeography of the sand crab families Albuneidae and Blepharipodidae Crustacea: Anomura: Hippoidea). *Invertebrate Systematics* 23, no. 1: 1-18.
- Boyko, Christopher B., and Patsy A. McLaughlin. 2010. Annotated checklist of anomuran decapod crustaceans of the world (Exclusive of the Kiwaoidea and Families Chirostylidae and Galatheidae of the Galatheoidea) Part IV Hippoidea. *Raffles Bulletin of Zoology*, no. Supplement 23: 139-51.
- Bracken, Heather D., Sammy De Grave, and Darryl L. Felder. 2009. Phylogeny of the Infraorder Caridea based on mitochondrial and nuclear genes (Crustacea: Decapoda). pp. 281-305 IN: *Decapod Crustacean Phylogenetics*. eds. Joel W. Martin , Keith A. Crandall, and Darryl L. Felder, 1-587.
- Bracken, Heather D., Alicia Toon, Darryl L. Felder, Joel W. Martin, Maegan Finley, Jennifer Rasmussen, Ferran Palero, and Keith A. Crandall. 2009. The decapod Tree of Life: compiling the data and moving toward a consensus of decapod evolution. *Arthropod Systematics & Phylogeny* 67, no. 1: 99-116.
- Brosing, Andreas, Stefan Richter, and Gerhard Scholtz. 2007. Phylogenetic analysis of the Brachyura (Crustacea, Decapoda) based on characters of the foregut with establishment of a new taxon. *Journal of Zoological Systematics and Evolutionary Research* 45, no. 1: 20-32.
- Browne, William E., Steven H. D. Haddock, and Mark Q. Martindale. 2007. Phylogenetic analysis of lineage relationships among hyperiid amphipods as revealed by examination of the mitochondrial gene, cytochrome oxidase I (COI). *Integrative and Comparative Biology* 47, no. 6: 815-30.
- Castro, Peter. 2007. A reappraisal of the family Goneplacidae MacLeay, 1838 (Crustacea, Decapoda, Brachyura) and revision of the subfamily Goneplacinae, with the description of 10 new genera and 18 new species. *Zoosystema* 29, no. 4: 609-774.
- Chan, Tin-Yam, Jingou Tong, Yan Kit Tam, and Ka Hou Chu. 2008. Phylogenetic relationships among the genera of the Penaeidae (Crustacea: Decapoda) revealed by mitochondrial 16S rRNA gene sequences. *Zootaxa*, no. 1694: 38-50.
- Colgan, Donald J., Patricia A. Hutchings, and Emma Beacham. 2008. Multi-gene analyses of the phylogenetic relationships among the Mollusca, Annelida, and Arthropoda. *Zoological Studies* 47, no. 3: 338-51.

- De Grave, Sammy, Dean Pentcheff, Shane T. Ahyong, Tin-Yam Chan, Keith A. Crandall, Peter C. Dworschak, Darryl L. Felder, Rodney M. Feldmann, Charles H. J. M. Fransen, Laura Y. D. Goulding, Rafael Lemaitre, Martyn E. Y. Low, Joel W. Martin, Peter K. L. Schweitzer, Carrie E. Ng, S. H. Tam, Dale Tshudy, and Regina Wetzer. 2009. A Classification of Living and Fossil Genera of Decapod Crustaceans. *Raffles Bulletin of Zoology*, no. Supplement No. 21: 1-109.
- Dell' Ampio, Emiliano, Nikolaus U. Szucsich, Antonio Carapelli, Francesco Frati, Gerhard Steiner, Arno Steinacher, and Gunther Pass. 2009. Testing for misleading effects in the phylogenetic reconstruction of ancient lineages of hexapods: influence of character dependence and character choice in analyses of 28S rRNA sequences. *Zoologica Scripta* 38, no. 2: 155-70.
- Fransen, Charles H. J. M., and Sammy De Grave. 2009. Evolution and radiation of shrimp-like decapods: an overview. pp. 245-259 IN: *Decapod Crustacean Phylogenetics*. eds. Joel W. Martin, Keith A. Crandall, and Darryl L. Felder, 1-587.
- Gao, Yan, and YunLuan Yun-Xia Bu. 2008. Phylogenetic Relationships of Basal Hexapods Reconstructed from Nearly Complete 18S and 28S rRNA Gene Sequences. *Zoological Science* 25, no. 11: 1139-45.
- Giribet, Gonzalo, Casey W. Dunn, Gregory D. Edgecombe, and Greg W. Rouse. 2007. A modern look at the Animal Tree of Life. *Zootaxa*, no. 1668: 61-79.
- Havermans, Charlotte, Zoltan T. Nagy, Gontran Sonet, Claude De Broyer, and Patrick Martin. 2010. Incongruence between molecular phylogeny and morphological classification in amphipod crustaceans: a case study of Antarctic lysiannassoids. *Molecular Phylogenetics and Evolution* 55: 202-9.
- Hultgren, K. M., and J. J. Stachowicz. 2008. Molecular phylogeny of the brachyuran crab superfamily Majoidea indicates close congruence with trees based on larval morphology. *Molecular Phylogenetics and Evolution* 48, no. 3: 986-96.
- Ito, Atsushi, Hiroshi Wada, and Masakazu N. Aoki . 2008. Phylogenetic analysis of caprellid and corophioid amphipods (Crustacea) based on the 18S rRNA gene, with special emphasis on the phylogenetic position of phtisicidae. *Biological Bulletin* 214, no. 2: 174-81.**J**
- Jenner, Ronald A., Ciara N. Dhubhghaill, Matteo P. Ferla, and Matthew A. Wills. 2009. Eumalacostracan phylogeny and total evidence: limitations of the usual suspects art. no. 21. *BMC Evolutionary Biology* 9, no. 21: 1-20.
- Karasawa, Hiroaki, and Carrie E. Schweitzer. 2006. A new classification of the Xanthoidea sensu lato (Crustacea: Decapoda: Brachyura) based on phylogenetic analysis and traditional systematics and evaluation of all fossil Xanthoidea sensu lato. *Contributions to Zoology* 75, no. 1-2: 23-73.
- Knopf, Franziska, Stefan Koenemann, Frederick R. Schram, and Carsten Wolff. 2006. The urosome of the Pan- and Peracarida. *Contributions to Zoology* 75, no. 1-2: 1-21.
- Krapp-Schickel, Gertraud, and Stefan Koenemann. 2006. Cladistic analysis of the family Stenothoidae (Amphipoda, Crustacea). *Contributions to Zoology* 75, no. 3-4: 169-88.
- Longhorn, Stuart J., Peter G. Foster, and Alfried P. Vogler. 2007. The nematode-arthropod clade revisited: phylogenomic analyses from ribosomal protein genes misled by shared evolutionary biases. *Cladistics* 23, no. 2: 130-144.
- Ma, K. Y., T. Y. Chan, and K. H. Chu. 2009. Phylogeny of penaeoid shrimps (Decapoda: Penaeoidea) inferred from nuclear protein-coding genes. *Molecular Phylogenetics and Evolution* 53, no. 1: 45-55.

- Maas, Andreas, Carolin Haug, Joachm T. Haug, Jorgen Olesen, Xiguang Zhang, and Dieter Waloszek . 2009. Early crustacean evolution and the appearance of epipodites and gills. *Arthropod Systematics & Phylogeny* 67, no. 2: 255-73.
- Masta, Susan E., Andrew McCall, and Stuart J. Longhorn. 2010. Rare genomic changes and mitochondrial sequences provide independent support for congruent relationships among the sea spiders (Arthropoda, Pycnogonida). *Molecular Phylogenetics and Evolution* 57, no. 1: 59-70.
- McLaughlin, Patsy A., Tomoyuki Komai, Rafael Lemaitre, and Dwi Listyo Rahayu. 2010.

 Annotated checklist of anomuran decapod crustaceans of the world (Exclusive of the Kiwaoidea and Families Chirostylidae and Galatheidae of the Galatheoidea) Part 1 Lithodoidea, Lomisoidea and Paguroidea. *Raffles Bulletin of Zoology*, no. Supplement 23: 5-107.
- McLaughlin, Patsy A., Rafael Lemaitre, and Ulf Sorhannus. 2007. Hermit crab phylogeny: A reappraisal and its "fall-out". *Journal of Crustacean Biology* 27, no. 1: 97-115.
- Nakamura, Koichiro, Yasunori Kano, Noburo Suzuki, Takashi Namatame, and Akinori Kosaku. 2007. 18S rRNA phylogeny of sea spiders with emphasis on the position of Rhynchothoracidae. *Marine Biology* 153, no. 2: 213-23.
- Osawa, Masayuki, and Patsy A. McLaughlin. 2010. Annotated checklist of anomuran decapod crustaceans of the world (Exclusive of the Kiwaoidea and Families Chirostylidae and Galatheidae of the Galatheoidea) Part II Porcellanidae. *Raffles Bulletin of Zoology*, no. Supplement 23: 109-29.
- Osborn, Karen J. 2009. Relationships within the Munnopsidae (Crustacea, Isopoda, Asellota) based on three genes. *Zoologica Scripta* 38, no. 6: 617-35.
- Palacios-Theil, Emma, Jose A. Cuesta, Ernesto Campos, and Darryl L. Felder. 2009. Molecular genetic re-examination of subfamilies and polyphyly in the family Pinnotheridae (Crustacea: Decapoda). pp. 457-474 IN: *Decapod Crustacean Phylogenetics*. eds. Joel W. Martin, Keith A. Crandall, and Darryl L. Felder, 1-587.
- Regier, Jerome C., Jeffrey W. Shultz, Andreas Zwick, April Hussey, Bernard Ball, Regina Wetzer, Joel W. Martin, and Cliff W. Cunningham. 2010. Arthropod relationships revealed by phylogenomic analysis of nuclear protein-coding sequences. *Nature* 463, no. 7284: 1079-U98.
- Richter, Stefan, Ole S. Moller, and Christian S. Wirkner. 2009. Advances in Crustacean Phylogenetics. *Arthropod Systematics & Phylogeny* 67, no. 2: 275-86.
- Robles, Rafael, Christopher C. Tudge, Peter C. Dworschak, Gary C. B. Poore, and Darryl L. Felder. 2009. Molecular phylogeny of the Thalassinidea based on nuclear and mitochondrial genes. pp. 309-326 IN: *Decapod Crustacean Phylogenetics*. eds. Joel W. Martin, Keith A. Crandall, and Darryl L. Felder, 1-587.
- Rota-Stabelli, Omar, Ehsan Kayal, Dianne Gleeson, Jennifer Daub, Jeffrey L. Boore, Maximilian J. Telford, Davide Pisani, Mark Blaxter, and Dennis V. Lavrov. 2010. Ecdysozoan Mitogenomics: Evidence for a Common Origin of the Legged Invertebrates, the Panarthropoda. *Genome Biology and Evolution* 2: 425-40.
- Tavares, Carolina, Christiana Serejo, and Joel W. Martin. 2009. A preliminary phylogenetic analysis of the Dendrobranchiata based on morphological characters. pp. 261-279 IN: Decapod Crustacean Phylogenetics. eds. Joel W. Martin, Keith A. Crandall, and Darryl L. Felder, 1-587.
- Telford, Maximilian J., Sarah J. Bourlat, Andrew Economou, Daniel Papillon, and Omar Rota-Stabeli. 2008. The evolution of the Ecdysozoa. *Philosophical Transactions of the Royal Society of London, B. Biological Sciences* 363: 1529-37.

- Timmermans, M. J. T. N., D. Roelofrs, J. Mariën, and N. M. van Straalen. 2008. Revealing pancrustacean relationships: Phylogenetic analysis of ribosomal protein genes places Collembola (springtails) in a monophyletic Hexapoda and reinforces the discrepancy between mitochondrial and nuclear DNA markers. *BMC Evolutionary Biology* 8, no. 83: 1-10.
- Tsang, L. M., K. Y. Ma, Shane T. Auyong, T.-Y. Chan, and K. H. Chu. 2008. Phylogeny of Decapoda using two nuclear protein-coding genes: origin and evolution of the Reptantia. *Molecular Phylogenetics and Evolution* 48: 359-68.
- Wills, Matthew A., Ronald A. Jenner, and Ciara Ni Dhubhghaill. 2009. Eumalacostracan evolution: conflict between three sources of data. *Arthropod Systematics & Phylogeny* 67, no. 1: 71-90.

SCAMIT Mollusk Literature Review November 15, 2010

Wilson, N. G., D. Huang, et al. (2009). "Field collection of Laevipilina hyalina McLean, 1979 from southern California, the most accessible living monoplacophoran." Journal of Molluscan Studies 75: 195-197.

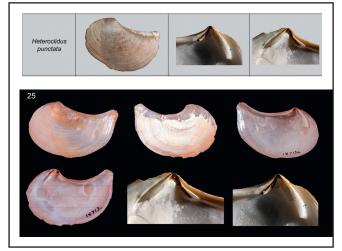


 Provides images of live specimens of local (Tanner and Corteze Bank area) monoplacophoran species on phosphoric nodules collect with a Van Veen

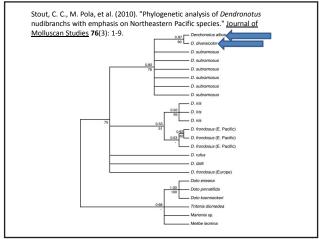
Valentich-Scott, P. and C. Skoglund (2010). "A review of the Recent Pandoridae (Bivalvia) in the Panamic Province, with descriptions of three new species." <u>The Nautilus</u> **124**(2): 55-76.

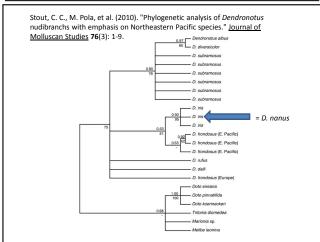


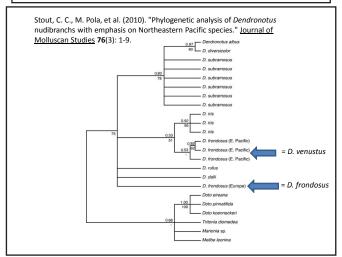
 Many subgenera elevated to generic status. Based on hinge structure.



[Pandora punctata Conrad, 1837]
 = Heteroclidus punctata (Conrad, 1837)





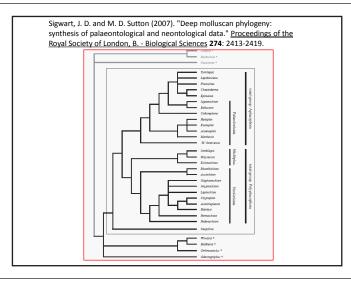


• *Dendronotus diversicolor* and *D. albus* are synonymized

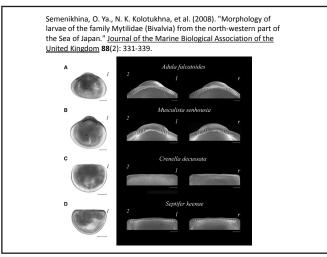
Dendronotus nanus and D. iris
are also regarded as synonyms
based on a re-evaluation of
ecological and morphological
data; no genetic data available

• *D. venustus* is resurrected for eastern Pacific populations previously considered to be *D. frondosus*. Pacific *D. venustus* display consistent morphological and molecular differences from Atlantic *D. frondosus*.

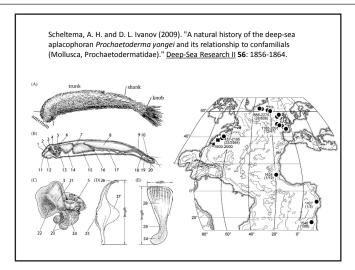
• Pacific species of *Dendronotus* are not a monophyletic group



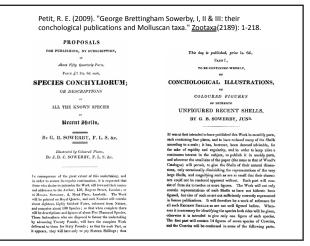
- A new cladistic analysis incorporating both Palaeozoic and extant molluscs is presented here. ... results support the monophyly of Aculifera and suggest that extant aplacophorans and polyplacophorans both derive from a disparate group of multivalved molluscs in two major clades
- Helminthochiton' thraivensis shows that this animal lacks a true foot despite bearing polyplacophoran like valves... footless stem-group aplacophorans



• The larval shell morphology of 10 bivalve species of the family Mytilidae



• Prochaetoderma yongei
Scheltema, 1985, appears
to be an opportunist, with
wide geographic and depth
distribution (bathyl depths), rapid
development from lecithotrophic
larva to settlement and maturity,
and omnivory.



Petit, R. E. (2009). "George Brettingham Sowerby, I, II & III: their conchological publications and Molluscan taxa." $\underline{Zootaxa}(2189)$: 1-218.

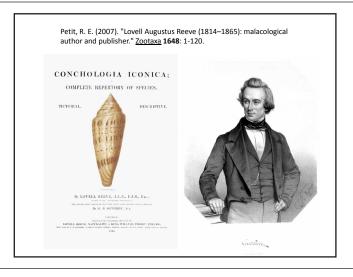
"Draw plates! Draw plates! ... but for the love of God, do not describe shells!" – Crosse, 1870

"... color blindness did not prevent G.B. Sowerby III from describing color varieties of species." – Petit, 2009

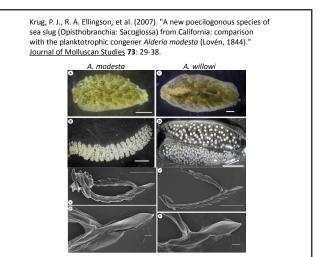
Petit, R. E. (2009). "George Brettingham Sowerby, I, II & III: their conchological publications and Molluscan taxa." <u>Zootaxa</u>(2189): 1-218.

"... synonymy lists will usually have Sowerby names stacked up like cord wood. – Petit, 2009

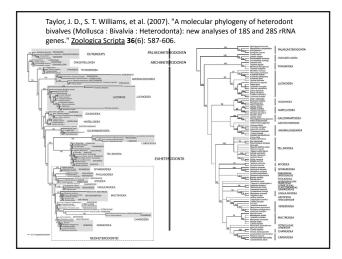
- Several members of the Sowerby family were artists and authors of natural history works in the 19th Century... George Brettingham Sowerby, his son, and his grandson (I, II & III)... Complete molluscan bibliographies
- Draw plates! Draw plates! ... but for the love of God, do not describe shells!"— (Crosse 1870)



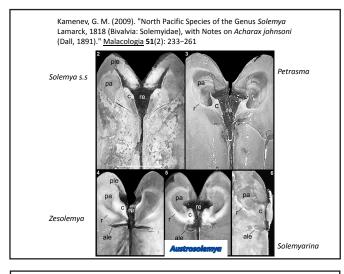
 Lovell Reeve was a major figure in 19th Century malacology in England... listing and describing his conchological publications and dating and collating those that were serially published

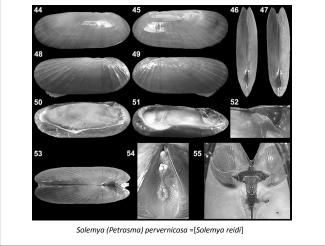


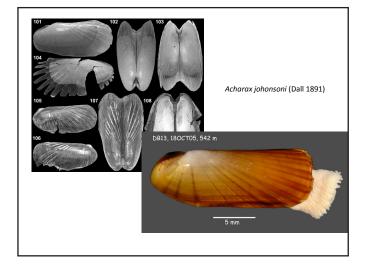
• Alderia modesta populations south of Bodega Harbor, California new species A. willowi... in southern California, slugs resembling this member of a monotypic genus produce both long lived, planktotrophic and short lived, lecithotrophic larvae... A. modesta is exclusively planktotrophic everywhere else in the northern Pacific and Atlantic Oceans



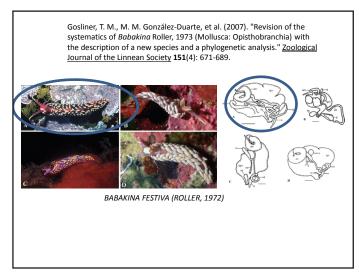
- Highlights include Tellinidae, Donacidae not monophyletic
- *Hiatella* grouped with Solenoidea (different order)
- Lucinoidea not monophyletic (Thyasiridae and Ungulinidae should be removed from the superfamily);
- Chemosymbiosis separately derived Thyasiridae and Lucinidae (removed from super family)
- Perpiplomatidea not include in study of Anomalodesmata

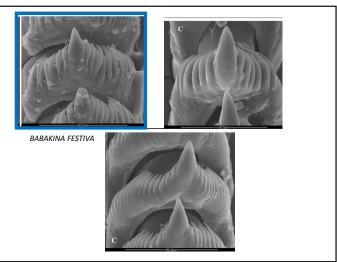




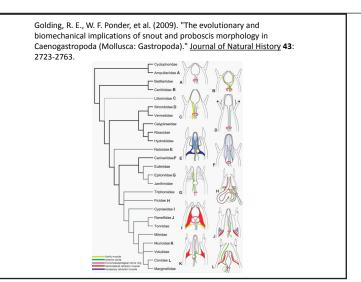


- 5 Subgenera are described and illustrated (based largely on hinge morphology)
- The gutless *Solemya reidi* from the northeastern Pacific is synonomyzed with *S. pervernicosa* from the northwestern Pacific
- Additional data on the distribution and ecology of *A. johnsoni*

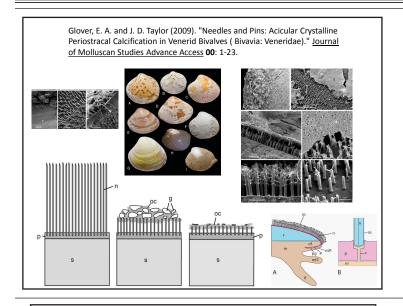




- A lack of information has produced confusion in the identification of the specimens and the number of valid species
- New species from the Tropical Pacific is described (*Babakina* indopacifica sp. nov.)
- *B. festiva* from California and Japan
- Difference in the arrangement of the receptaculum seminis, shape of the penis, and shape and size of the bursa copulatrix are consistent between distinct species from different geographical regions.
- Radular morphology does not exhibit significant differences in phylogeny suggests that Babakinidae should be maintained as a distinct taxon separated from Flabellinidae and Facelinidae

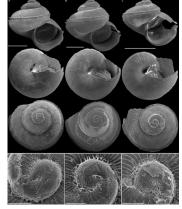


- Caenogastropod proboscises are a complex morphological adaptation to a carnivorous diet
- Previously undescribed diversity in both snout/proboscis wall composition and introversion/retraction musculature suggest that a proboscis evolved separately in at least four separate caenogastropod groups



- A scanning electron microscope study of the periostracum of 50 species of venerid bivalves revealed that periostracal calcification in the form of aragonitic needles and shorter pins is widespread within the family.
- Together with organic and sediment coatings that are found in some species, these needles form an integral part of the functional shell
- Often missing in museum collections due to "cleaning" of shells

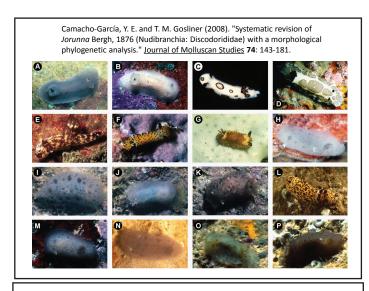


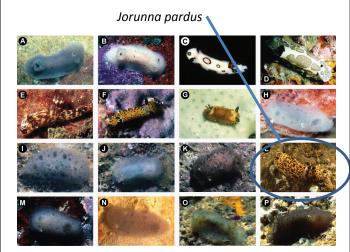


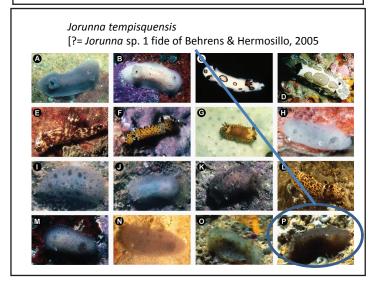


Thieleella kelseyi (Dall, 1905)
Misidentification:
Anatoma crispata (non Fleming, 1828):
McLean, 1996: 17, fig. 1.2 [is T. kelseyi].
Scissurella (Anatoma) crispata: McLean, 1967:
405, pl. 56, figs 1–4 [includes A. chiricova and A. japonica. Illustrated specimen is T. kelseyi].

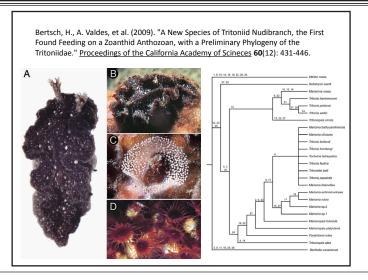
- Thieleella kelseyi (Dall, 1905) is resurrected for what has previously been misidentified as the European
- Anatoma crispata (Fleming, 1828) in the northeastern Pacific, with a neotype designated, as the holotype is missing.





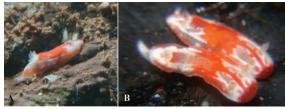


- Includes table of characters for Eastern Pacific species
- Description of Jorunna pardus and description of two new species from Costa Rica of Jarunna
- Description of Jorunna pardus and description of two new species from Costa Rica of Jarunna



- The first tritoniid nudibranch known to feed on zoanthid anthozoans. *Tritonia papalotla sp. nov.*
- Phylogenetic analysis make the generic placement problematic however, Family Tritoniidae appears monopheletic

Behrens, D. W., M. T. Gosliner, et al. (2009). "A New Species of Dorid Nudibranch (Mollusca) from the Revillagigedo Islands of the Mexican Pacific." <u>Proceedings of the California Academy of Scineces</u> **60**(11): 423-429.



Chromodoris socorroensis = [Chromodoirs sp 1 Behrens and Hermosillo, 2005]

• *Chromodoris socorroensis* = [*Chromodoirs* sp 1 *fide* Behrens and Hermosillo, 2005]

			and ruibonilla i		1	
Species	OD genus	Authorship		Oldroyd 1927(sg)	Abbott 1974 sg	"recommended current usage"
abreojensis	Turbonilla	Dall and Bartsch 1909	Ptycheulimella			leave as Eulimella per Aartsen et al 1998
acra	Turbonilla	Dall and Bartsch 1909	Turbonilla	Turbonilla		leave as Turbonilla
acrybia	Odostomia	Dall and Bartsch 1909	Chrysallida	NA		use as Chrysallida
aculeus		C. B. Adams 1852	Chemnitzia	NA	NA	leave as Turbonilla
adusta	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)		use as Pyrgiscus
aepynota	Turbonilla	Dall and Bartsch 1909	Chemnitzia	(Chemnitzia)		leave as Turbonilla
aepynota	Odostomia	Dall and Bartsch 1909	Miralda	(Miralda)	Miralda	use as Liamorpha per Aartsen et al 1998
aequisculpta		Carpenter 1864	Menestho	NA	Menestho	use as Menestho
affinis	Chemnitzia	C. B. Adams 1852	Strioturbonilla	NA	NA	leave as Turbonilla
alarconi	Turbonilla	Strong 1949	NA	NA	Pyrgiscus	use as Pyrgiscus
alaskana	Turbonilla	Dall and Bartsch 1909	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
albula	?	Fabricius, 1780	NA	NA	NA	Menestho [added per P. Lafollette]
aleutica	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
almejasensis	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus
*almo	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	NA	leave as Turbonilla
altina	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
ambusta	Turbonilla	Dall and Bartsch 1909	Mormula	(Mormula)	Mormula	syn of tridentata per Abbott
amchitkana	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott
americana	Odostomia	Dall and Bartsch 1904	Evalina	(Evalina)	Evalina	use as Evalina
amianta	Odostomia	Dall and Bartsch 1907	Iolaea	(lolaea)	Iolaea	use as Iolaea
amiantropsis	?	McNeil 1943	NA	NA	NA	syn of truncatula per P. Lafollette
amilda	Odostomia	Dall and Bartsch 1909	Menestho	(Menestho)	Menestho	use as Menestho
amortajadensis	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Chemnitzia	leave as Turbonilla
andrewsi	Turbonilla	Dall and Bartsch 1909	Dunkeria	NA	NA	leave as Turbonilla
angularis	Odostomia	Dall and Bartsch 1907	Evalea	(Evalea)	Evalea	Brachystomia in McLean 2007
angusta	Chrysallida	Carpenter 1864	Pyrgiscus	NA	NA	use as Pyrgiscus
annettae	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	NA	use as Pyrgiscus
antemunda	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	syn of tenuicula per Abbott
antestriata	Turbonilla	Dall and Bartsch 1907	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
aragoni	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)		use as Pyrgiscus
arata	Turbonilla	Dall and Bartsch 1909	Dunkeria	(Bartschella)	Pyrgiscus	syn of weldi per Abbott
arctica	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	Amaura	use as Aartsenia
aresta	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
aripana	Turbonilla	Strong 1949	NA	NA	Pyrgiscus	use as Pyrgiscus
asser	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	(Strioturbonilla)		syn of stylina per Abbott
*astricta	Odostomia	Dall and Bartsch 1907	Chrysallida	(Chrysallida)	Chrysallida	use as Boonea
asuncionis	Turbonilla	Strong 1949	NA	NA	Strioturbonilla	leave as Turbonilla
atossa	Odostomia	Dall 1908	Evalea	(Evalea)	Evalea	use as Evalea
attrita	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
audax	Odostomia	Baker, Hanna & Strong 1928	NA	NA	Chrysallida	use as Chrysallida
aurantia		Carpenter 1864	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
auricoma	Turbonilla	Dall and Bartsch 1903	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus

avellana	Odostomia	Carpenter 1865	Amaura	(Amaura)	NA	use as Aartsenia
azteca	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Pyrgiscus	use as Pyrgiscus
bachia	Odostomia	Bartsch 1927	NA	NA	Evalea	use as Evalea
baegerti	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus
bakeri	Turbonilla	Bartsch 1912	NA	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
baldridgeae	Odostomia	Bartsch 1912	NA	(Evalea)	Evalea	use as Evalea
baranoffensis	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott
barkleyensis	Turbonilla	Bartsch 1917	NA	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
barkleyensis	Odostomia	Dall and Bartsch 1910	NA	(Evalea)	Evalea	use as Evalea
bartolomensis	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus
bartschi	Turbonilla	Smith & Gordon 1948	NA	NA	Bartschella	syn of pauli per Abbott
bartschiana	Turbonilla	Smith & Gordon 1950	NA	NA	Bartschella	use as Bartschella
benthina	Chrysallida	Carpenter 1856	Chrysallida	NA	NA	use as Chrysallida
beringi	Odostomia	Dall 1871	Amaura	(Amaura)	Amaura	use as Aartsenia
berryi	Turbonilla	Dall and Bartsch 1907	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of chocolata per Abbott
bisuturalis	Menestho	Say 1812	NA	NA	NA	Odetta in McLean 2007 [introduced]
burchi	Turbonilla	Gordon 1938	NA	NA	Pyrgiscus	use as Pyrgiscus
buttoni	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	syn of stylina per Abbott
cabrilloi	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus
calcarella	Odostomia	Bartsch 1912	NA	(Evalea)	Evalea	use as Evalea
californica	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	use as Evalea
callia	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
callimene	Turbonilla	Bartsch 1912	NA	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
callimene	Odostomia	Bartsch 1912	NA	(Evalea)	Evalea	use as Evalea
callimorpha	Odostomia	Dall and Bartsch 1909	Besla	(Besla)	Besla	use as Besla
calliope	Odostomia	Bartsch 1912	NA	(Evalea)	Evalea	use as Evalea
callipeplum	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	NA	use as Pyrgiscus
callipyrga	Odostomia	Dall and bartsch 1904	Menestho	NA	NA	use as Odetta
calvini	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	NA	Strioturbonilla	syn of stylina per Abbott
canadensis	Turbonilla	Bartsch 1917	NA	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
cancellata	Dunkeria	Carpenter 1856	Pyrgisculus	NA	NA	leave as Turbonilla
canfieldi	Turbonilla	Dall and Bartsch 1907	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
*canfieldi	Odostomia	Dall 1908	Amaura	(Amaura)	Amaura	use as Aartsenia
capitana	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
carpenteri	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
cassandra	Odostomia	Bartsch 1912	NA	(Evalea)	Odostomia	use as Odostomia
*castanea	Chemnitzia	Keep 1888	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
castanella	Turbonilla	Dall 1908	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
catalinensis	Turbonilla	Dall and Bartsch 1909	Mormula	(Mormula)	Mormula	syn of tridentata per Abbott
catalinensis	1	Bartsch 1927	NA	NA	Chrysallida	use as Chrysallida
cayucosensis		Willett 1929	NA	NA	Chemnitzia	syn of gabbiana per Abbott
c-b-adamsi	Chemnitzia	Carpenter 1856	Strioturbonilla	NA	NA	leave as Turbonilla
centrota	Chemnitzia	Dall and Bartsch 1909	Turbonilla	NA	Turbonilla	leave as Turbonilla

and "Turbonilla from the NEP								
ceralva	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	Pyrgiscus	use as Pyrgiscus		
chalcana	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Strioturbonilla	leave as Turbonilla		
*chocolata	Chemnitzia	Carpenter 1866	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla		
churchi	Odostomia	Smith & Gordon 1948	NA	NA	Menestho	use as Menestho		
ciguatonis	Odostomia	Strong 1949	NA	NA	Menestho	use as Menestho		
cincta	Chrysallida	Carpenter 1864	Chrysallida	(Chrysallida)	Chrysallida	use as Chrysallida		
cinctella	Turbonilla	Mörch 1859	Pyrgiscus	NA	NA	use as Pyrgiscus		
clarinda	Turbonilla	Bartsch 1912	NA	(Chemnitzia)	Chemnitzia	leave as Turbonilla		
clathratula	Chemnitzia	C. B. Adams 1852	Chrysallida	NA	NA	use as Chrysallida		
clausiliformis	Chrysallida	Carpenter 1856	Lysacme	NA	NA	use as Lysacme		
clementensis	Odostomia	Bartsch 1927	NA	NA	Chrysallida	use as Chrysallida		
*clementina	Turbonilla	Bartsch 1927	NA	NA	Mormula	leave as Turbonilla		
clementina	Odostomia	Dall and Bartsch 1909	Chrysallida	(Chrysallida)	NA	use as Chrysallida		
clessini	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott		
cochimana	Turbonilla	Strong 1949	NA	NA	Pyrgiscus	use as Pyrgiscus		
*columbiana	Odostomia	Dall and Bartsch 1907	Evalea	(Evalea)	Evalea	use as Evalea		
communis	Chemnitzia	C. B. Adams 1852	Chrysallida	NA	NA	use as Chrysallida		
contrerasi	Odostomia	Baker, Hanna & Strong 1928	NA	NA	Chrysallida	syn of cincta per Wise		
convexa	Chrysallida	Carpenter 1856	Besla	NA	Besla	use as Besla		
cookeana	Turbonilla	Bartsch 1912	NA	NA	Strioturbonilla	leave as Turbonilla		
cookeana	Odostomia	Bartsch 1912	NA	(Evalea)	Evalea	use as Evalea		
cooperi	Odostomia	Dall and Bartsch 1907	Chrysallida	(Chrysallida)	NA	use as Chrysallida		
cora	Chemnitzia	D'Orbigny 1847	Pyrgiscus	NA	NA	syn of astricta per Ed. 5		
coronadoensis	Odostomia	Dall and Bartsch 1909	Odostomia	(Odostomia)	NA	use as Odostomia		
corsoensis	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus		
cortezi	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus		
coyotensis	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Mormula	leave as Turbonilla		
craticulata	Turbonilla	Mörch 1859	Pyrgiscus	NA	NA	use as Pyrgiscus		
crebrifilata	Turbonilla	Carpenter 1864	NA	NA	Pyrgiscus	syn of tenuicula per Abbott		
cumshewaensis	Odostomia	Bartsch 1921	NA	(Chrysallida)	Chrysallida	use as Chrysallida		
cypria	Odostomia	Dall and Bartsch 1910	NA	(Evalea)	Evalea	use as Evalea		
deceptrix	Odostomia	Dall and Bartsch 1909	Chrysallida	NA	NA	syn of cincta per Wise		
delicatula	Odostomia	Carpenter 1864	Iolaea	NA	Iolaea	use as Iolaea		
deliciosa	Odostomia	Dall and Bartsch 1907	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott		
delmontana	Turbonilla	Bartsch 1937	NA	NA	Pyrgiscus	use as Pyrgiscus		
delmontensis	Turbonilla	Dall and Bartsch 1907	NA	NA	NA	leave as Turbonilla		
delmontensis	Turbonilla	Bartsch 1927	NA	NA	Pyrgiscus	syn of delmontana per Abbott		
dicella	Odostomia	Bartsch 1912	NA	(Chrysallida)	Chrysallida	use as Chrysallida		
*diegensis	Turbonilla	Dall and Bartsch 1909	Turbonilla	Turbonilla	Turbonilla	leave as Turbonilla		
dina	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	NA	use as Pyrgiscus		
dinella	Odostomia	Dall and Bartsch 1909	Odostomia	(Odostomia)	Odostomia	use as Odostomia		
dinora	Turbonilla	Bartsch 1912	NA	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla		
domingana	Turbonilla			,				
		Hertlein and Strong 1951	NA	NA	Pyrgiscus	use as Pyrgiscus		

					1	
donilla	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	use as Evalea
dora	Turbonilla	Bartsch 1917	NA	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
doredona	Turbonilla	Bartsch 1917	NA	(Strioturbonilla)	NA	leave as Turbonilla
dotella	Odostomia	Dall and Bartsch 1909	Scalenostoma	NA	Eulimastoma	use as Eulimastoma
dracona	Turbonilla	Bartsch 1912	NA	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
edmondi	Odostomia	E. Jordan 1920	NA	(Evalea)	Evalea	use as Evalea
effusa	Chrysallida	Carpenter 1856	Chrysallida	NA	NA	use as Chrysallida
eldorana	Odostomia	Bartsch 1912	NA	(Amaura)	Amaura	use as Aartsenia
elsa	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	Amaura	use as Aartsenia
encella	Turbonilla	Bartsch 1912	NA	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
engbergi	Turbonilla	Bartsch 1920	NA	(Chemnitzia)	Chemnitzia	leave as Turbonilla
engbergi	Odostomia	Bartsch 1920	NA	(Amaura)	Amaura	use as Aartsenia
enna	Turbonilla	Bartsch 1927	NA	NA	Mormula	leave as Turbonilla
enora	Odostomia	Dall and Bartsch 1909	Menestho	(Menestho)	Menestho	use as Menestho
eshscholtzi	Turbonilla	Dall and Bartsch 1907	Mormula	(Mormula)	Mormula	leave as Turbonilla
esilda	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	use as Evalea
*eucosmia	Odostomia	Dall and Bartsch 1909	Iolaea	(lolaea)	Iolaea	use as Iolaea
eucosmia	Turbonilla	Dall and Bartsch 1909	Pyrgisculus	NA	NA	leave as Turbonilla
eucosmobasis	Turbonilla	Dall and Bartsch 1907	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
*eugena	Odostomia	Dall and Bartsch 1909	Chrysallida	(Chrysallida)	Chrysallida	use as Chrysallida
euglypta	Odostomia	E. K. Jordan 1921	NA	(Chrysallida)	Chrysallida	use as Chrysallida
eva	Turbonilla	Bartsch 1917	NA	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
exara	Odostomia	Dall and Bartsch 1907	Menestho	(Menestho)	Menestho	use as Menestho
exarata	Parthenia	Carpenter 1856	Miralda	NA	NA	use as Liamorpha per Aartsen et al 1998
excelsa	Odostomia	Dall and Bartsch 1909	Chrysallida	NA	NA	use as Chrysallida
excisa	Odostomia	Bartsch 1912	NA	(Menestho)	Menestho	use as Menestho
excolpa	Turbonilla	Dall and Bartsch 1909	Dunkeria	NA	Besla	leave as Turbonilla
eyerdami	Turbonilla	Bartsch 1927	NA	NA	Pyrgolampros	leave as Turbonilla
eyerdami	Odostomia	Bartsch 1927	NA	NA	Evalea	use as Evalea
fackenthallas	Turbonilla	Smith & Gordon 1948	NA	NA	Turbonilla	leave as Turbonilla
farallonensis	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	Amaura	use as Aartsenia
farella	Odostomia	Dall and Bartsch 1909	Odostomia	(Odostomia)	NA	use as Odostomia
farma	Odostomia	Dall and Bartsch 1909	Menestho	(Menestho)	Menestho	use as Menestho
fasciata	Chrysallida	Carpenter 1856	Chrysallida	NA	NA	use as Chrysallida
favilla	Chemnitzia	Carpenter 1865	Pyrgiscus	NA	NA	use as Pyrgiscus
festiva	Turbonilla	de Folin 1867	Pyrgisculus	NA	NA	use as Pyrgiscus
fetella	Odostomia	Dall and Bartsch 1909	Menestho	(Menestho)	Menestho	Odetta in McLean 2007
fia		Bartsch 1927	NA	NA	Chrysallida	use as Chrysallida
flavescens		Carpenter 1856	Pyrgiscus	NA	NA	use as Pyrgiscus
franciscana	Turbonilla	Bartsch 1917	NA	(Pyrolampros)	Pyrgolampros	leave as Turbonilla
franciscana	Odostomia	Bartsch 1917	NA	(Evalea)	Evalea	use as Evalea
francisquitana	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Pyrgolampros	leave as Turbonilla
gabbiana	Turbonilla	Cooper 1870	Chemnitzia	(Chemnitzia)	Chemnitzia	leave as Turbonilla
<u>, =</u>			4			

		'	and "Turbonilla t	IOIII tile INLI		
gabrielensis	Odostomia	Baker, Hanna & Strong 1928	NA	NA	Salassiella	use as Salassiella
galapagensis	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	NA	NA	leave as Turbonilla
galapagensis	Odostomia	Dall and Bartsch 1909	Miralda	NA	NA	use as Liamorpha per Aartsen et al 1998
galianoi	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	syn of stylina per Abbott
genilda	Turbonilla	Dall and Bartsch 1909	Dunkeria	NA	NA	leave as Turbonilla
gibbosa	Chemnitzia	Carpenter 1856	Pyrgolampros	NA	NA	leave as Turbonilla
gilli	Turbonilla	Dall and Bartsch 1907	Turbonilla	Turbonilla	Turbonilla	leave as Turbonilla
gilli delmontensis	Turbonilla	Dall and Bartsch 1907	Turbonilla	Turbonilla	Turbonilla	leave as Turbonilla
gloriosa	Turbonilla	Bartsch 1912	NA	(Pyrolampros)	Pyrgolampros	leave as Turbonilla
gloriosa	Odostomia	Bartsch 1912	NA	(Menestho)	Menestho	use as Menestho
gonzagensis	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Pyrgolampros	leave as Turbonilla
gouldi	Turbonilla	Dall and Bartsch 1909	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of aurantia per Abbott
gouldi	Odostomia	Carpenter 1865	Amaura	NA	NA	use as Aartsenia
gracillima	Chemnitzia	Carpenter 1856	Pyrgiscus	NA	Chemnitzia	syn of gabbiana per Abbott
gracilior	Chemnitzia	C. B. Adams 1852	Strioturbonilla	NA	NA	leave as Turbonilla
grammatospira	Odostomia	Dall and Bartsch 1903	Menestho	NA	NA	use as Menestho
granadensis	Odostomia	Dall and Bartsch 1909	Evalea	NA	NA	use as Evalea
gravida	Odostomia	Gould 1853	Evalea	(Evalea)	Evalea	use as Evalea
grippi	Turbonilla	Bartsch 1912	NA	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
grippiana	Odostomia	Bartsch 1912	NA	(Amaura)	Amaura	use as Aartsenia
grijalvae	Odostomia	Baker, Hanna & Strong 1928	NA	NA	Menestho	use as Menestho
guaicurana	Turbonilla	Strong 1949	NA	NA	Pyrgiscus	use as Pyrgiscus
hagemeisteri	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott
halia	Turbonilla	Dall and Bartsch 1909	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of chocolata per Abbott
halibrecta	Turbonilla	Dall and Bartsch 1909	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
halidoma	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	Pyrgiscus	use as Pyrgiscus
halistrepta	Turbonilla	Dall and Bartsch 1909	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
harfordensis	Odostomia	Dall and Bartsch 1907	Menestho	(Menestho)	Menestho	use as Menestho
heathi	Odostomia	Smith & Gordon 1948	NA	NA	Salassiella	use as Salassiella
helena	Odostomia	Bartsch 1912	NA	(Amaura)	Amaura	use as Aartsenia
helga	Odostomia	Dall and Bartsch 1909	Chrysallida	(Chrysallida)	Chrysallida	use as Chrysallida
hemphilli	Odostomia	Dall and Bartsch 1909	Miralda	(Miralda)	Miralda	use as Liamorpha per Aartsen et al 1998
herilda	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
heterocincta	Odostomia	Bartsch 1912	NA	(Chrysallida)	Chrysallida	use as Chrysallida
heterolopha	Turbonilla	Dall and Bartsch 1909	Mormula	(Mormula)	Mormula	leave as Turbonilla
hipolitensis	Turbonilla	Dall and Bartsch 1909	Dunkeria	NA	NA	leave as Turbonilla
hipolitensis		Dall and Bartsch 1909	Chrysallida	NA	NA	syn of cincta per Wise
histias	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	Pyrgiscus	use as Pyrgiscus
houseri	Turbonilla	Dall and Bartsch 1909	Chemnitzia	NA	NA	leave as Turbonilla
humerosa	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	syn of stylina per Abbott
hypatia		Dall and Bartsch 1912	NA	(Evalea)	Evalea	use as Evalea
hypocurta	Odostomia	Dall and Bartsch 1909	Menestho	(Menestho)	Menestho	syn of albula per P. Lafollette
hypolispa	Turbonilla	Dall and Bartsch 1909	Chemnitzia	(Chemnitzia)	Chemnitzia	leave as Turbonilla

ignacia	Turbonilla	Dall and Bartsch 1909	Mormula	NA	Mormula	leave as Turbonilla
ignacia						
ilfa	Turbonilla	Bartsch 1927	NA	NA (Amouro)	Pyrgolampros	leave as Turbonilla
iliuliukensis	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	Amaura	use as Aartsenia
ima	Turbonilla	Dall and Bartsch 1909	Turbonilla	NA	NA	leave as Turbonilla
imperialis	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	NA (Demois acce)	NA	leave as Turbonilla
ina	Turbonilla	Bartsch 1917	NA Object of a likely	(Pyrgiscus)	NA	use as Pyrgiscus
inconspicua	Cingula	C. B. Adams 1852	Chrysallida	NA	NA	use as Chrysallida
indentata	•	Carpenter 1856	Pyrgiscus	NA (F. alaa)	NA	use as Pyrgiscus
inflata	Odostomia	Dall and Bartsch 1907	Evalea	(Evalea)	Evalea	use as Evalea
intermedia	Dunkeria	Carpenter 1856	Evalina	NA (5.1.)	NA	use as Evalina
10	Odostomia	Dall and Bartsch 1903	Evalea	(Evalea)	NA	use as Evalea
ista	Turbonilla	Bartsch 1917	NA	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
jewetti	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
jewetti	Odostomia	Dall and Bartsch 1907	Evalea	(Evalea)	NA	use as Evalea
johnsoni	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Pyrgiscus	use as Pyrgiscus
juani	Turbonilla	Bartsch 1917	NA	NA	Ugartea	leave as Turbonilla
kadiakensis	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott
kaliwana	Turbonilla	Strong 1949	NA	NA	Pyrgiscus	use as Pyrgiscus
keepi	Turbonilla	Dall and Bartsch 1909	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of chocolata per Abbott
*kelseyi	Turbonilla	Dall and Bartsch 1909	Chemnitzia	(Chemnitzia)	Chemnitzia	leave as Turbonilla
kelseyi	Odostomia	Bartsch 1912	NA	(Heida)	Odostomia	use as Heida
kennerlyi	Odostomia	Dall and Bartsch 1907	Amaura	(Amaura)	Amaura	use as Aartsenia
killisnooensis	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
kincaidi	Turbonilla	Bartsch 1921		(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
krausei	Odostomia	Clessin 1900	Amaura	(Amaura)	Amaura	use as Aartsenia
lacunata	Parthenia	Carpenter 1856	Egila	NA	NA	use as Egila
laminata	Dunkeria	Carpenter 1864	Dunkeria	(Bartschella)	Bartschella	Bartchella per McLean 2007
lamna	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus
lapazana	Odostomia	Dall and Bartsch 1909	Chrysallida	NA	NA	use as Chrysallida
lara	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	Pyrgiscus	use as Pyrgiscus
larunda	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	Pyrgiscus	use as Pyrgiscus
lastra	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	Amaura	use as Aartsenia
laxa	Odostomia	Dall and Bartsch 1909	Salassiella	(Salassiella)	Salassiella	Trabecula laxa in Ed 5
lazaroensis	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus
lepta	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	Pyrgiscus	use as Pyrgiscus
licina	Odostomia	Dall and Bartsch 1909	Chrysallida	NA	NA	use as Chrysallida
lituyana	Turbonilla	Dall and Bartsch 1909	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
loomisi	Odostomia	Dall and Bartsch 1909	Chrysallida	NA	NA .	use as Chrysallida
lordii	Chemnitzia	E. A. Smith 1880	Mormula	(Mormula)	Mormula	leave as Turbonilla
lowei	Turbonilla	Dall and Bartsch 1903	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of chocolata per Abbott
lucana	Turbonilla	Dall and Bartsch 1909	Turbonilla	NA	Turbonilla	leave as Turbonilla
lucasana	Odostomia	Dall and Bartsch 1909	Evalea	NA	NA	use as Evalea
lucca	Odostomia	Dall and Bartsch 1909	Chrysallida	(Chrysallida)	NA	syn of astricta per Ed. 5

	B II I I I I I I I I I I I I I I I I I	and ruibonilla i		- ·	T
					leave as Turbonilla
		, ,		, ,	use as Pyrgiscus
		NA	. , ,	, , ,	leave as Turbonilla
					use as Pyrgiscus
	Bartsch 1927			•	use Eulimella per Aartsen et al 1998
					leave as Turbonilla
Odostomia	•			NA	use as Odostomia
Turbonilla				Pyrgiscus	use as Pyrgiscus
Turbonilla			NA		use as Pyrgiscus
Odostomia			(Amaura)		use as Aartsenia
Odostomia	Strong 1938	NA	NA	Evalea	use as Evalea
Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Pyrgiscus	use as Pyrgiscus
Odostomia	Baker, Hanna & Strong 1928	NA	NA	Ividella	use as Ividella
Turbonilla	Dall and Bartsch 1909	Strioturbonilla	NA	NA	leave as Turbonilla
Turbonilla	Bartsch 1927	NA	NA	Pyrgolampros	leave as Turbonilla
Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	syn of raymondi per Corgan 1973
Turbonilla	Dall and Bartsch 1907	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
Turbonilla	Dall and Bartsch 1909	Pyrgisculus	NA	NA	leave as Turbonilla
Odostomia	Dall and Bartsch 1907	Chrysallida	(Chrysallida)	NA	syn of astricta per Ed. 5
Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	Amaura	use as Aartsenia
Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
Turbonilla	Carpenter 1856	Chemnitzia	(Chemnitzia)	NA	leave as Turbonilla
Turbonilla	Dall and Bartsch 1907	Chemnitzia	(Chemnitzia)	Chemnitzia	leave as Turbonilla
Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Strioturbonilla	leave as Turbonilla
Odostomia	Baker, Hanna & Strong 1928	NA	NA	Menestho	use as Menestho
Odostomia	Dall and Bartsch 1907	Ividella	(Ividella)	Ividella	Ividella in McLean 2007
Odostomia	Dall and Bartsch 1907	Ividella	(Ividella)	NA	use as Ividella
Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
Turbonilla	Dall and Bartsch 1907	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
Turbonilla	Dall and Bartsch 1909	Strioturbonilla	NA	Strioturbonilla	syn of stylina per Abbott
Chrysallida	Carpenter 1856	Chrysallida	NA	NA	use as Chrysallida
Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	NA	syn of pupiformis per McLean 2007
Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	use as Evalea
Odostomia	Carpenter 1865	Amaura	(Amaura)	Amaura	use as Aartsenia
Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	NA	use as Pyrgiscus
Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)		use as Pyrgiscus
Odostomia	Dall and Bartsch 1909	Evalea	1	NA	syn of tenuisculpta per Abbott
Eulimella	Carpenter 1856		NA	NA	use Eulimella per Aartsen et al 1998
	Dall and Bartsch 1909	•		NA	syn of astricta in Ed 5
			, , , ,		use as Chrysallida
	Turbonilla Odostomia Odostomia Turbonilla Odostomia Turbonilla Turbonilla Odostomia Turbonilla Turbonilla Odostomia Odostomia Odostomia Turbonilla Turbonilla Turbonilla Turbonilla Turbonilla Turbonilla Turbonilla Turbonilla Odostomia Odostomia Odostomia Odostomia Odostomia Odostomia Turbonilla Chrysallida Odostomia Odostomia Odostomia Odostomia Odostomia Turbonilla Turbonilla Turbonilla Turbonilla Turbonilla Turbonilla Odostomia Odostomia Odostomia Odostomia Odostomia	Turbonilla Dall and Bartsch 1909 Turbonilla Dall and Bartsch 1910 Turbonilla Dall and Bartsch 1909 Turbonilla Bartsch 1927 Chemnitzia C. B. Adams 1852 Odostomia Carpenter 1856 Turbonilla Bartsch 1917 Turbonilla Dall and Bartsch 1909 Odostomia Dall and Bartsch 1909 Odostomia Dall and Bartsch 1906 Odostomia Baker, Hanna & Strong 1928 Turbonilla Bartsch 1927 Odostomia Baker, Hanna & Strong 1928 Turbonilla Dall and Bartsch 1909 Turbonilla Bartsch 1927 Odostomia Dall and Bartsch 1909 Turbonilla Dall and Bartsch 1907 Turbonilla Dall and Bartsch 1907 Odostomia Dall and Bartsch 1909 Odostomia Dall and Bartsch 1909 Odostomia Dall and Bartsch 1909 Turbonilla Carpenter 1856 Turbonilla Dall and Bartsch 1907 Turbonilla Baker, Hanna & Strong 1928 Odostomia Dall and Bartsch 1907 Turbonilla Baker, Hanna & Strong 1928 Odostomia Dall and Bartsch 1907 Turbonilla Baker, Hanna & Strong 1928 Odostomia Dall and Bartsch 1907 Turbonilla Dall and Bartsch 1907 Turbonilla Dall and Bartsch 1907 Odostomia Dall and Bartsch 1907 Turbonilla Dall and Bartsch 1909 Chrysallida Carpenter 1856 Odostomia Dall and Bartsch 1909 Odostomia Dall and Bartsch 1909 Turbonilla Dall and Bartsch 1909	Turbonilla Dall and Bartsch 1909 Pyrgiscus Turbonilla Dall and Bartsch 1910 NA Turbonilla Dall and Bartsch 1909 Pyrgiscus Turbonilla Dall and Bartsch 1909 Pyrgiscus Turbonilla Bartsch 1927 NA Chemnitzia C. B. Adams 1852 Mormula Odostomia Carpenter 1856 Odostomia Turbonilla Bartsch 1917 NA Turbonilla Bartsch 1917 NA Turbonilla Dall and Bartsch 1909 Pyrgiscus Odostomia Dall and Bartsch 1906 Amaura Odostomia Strong 1938 NA Turbonilla Baker, Hanna & Strong 1928 NA Odostomia Baker, Hanna & Strong 1928 NA Turbonilla Dall and Bartsch 1909 Strioturbonilla Turbonilla Bartsch 1927 NA Odostomia Dall and Bartsch 1909 Pyrgiscus Turbonilla Dall and Bartsch 1909 Evalea Turbonilla Dall and Bartsch 1907 Pyrgiscus Turbonilla Dall and Bartsch 1907 Pyrgisculus Odostomia Dall and Bartsch 1909 Amaura Odostomia Dall and Bartsch 1909 Evalea Turbonilla Carpenter 1856 Chemnitzia Turbonilla Dall and Bartsch 1909 Evalea Turbonilla Dall and Bartsch 1907 Chemnitzia Turbonilla Dall and Bartsch 1909 Evalea Turbonilla Dall and Bartsch 1909 Pyrgisculus Odostomia Dall and Bartsch 1909 Evalea Turbonilla Dall and Bartsch 1909 Evalea Turbonilla Dall and Bartsch 1909 Evalea Turbonilla Dall and Bartsch 1909 Pyrgiscus Turbonilla Dall and Bartsch 1907 Chemnitzia Turbonilla Dall and Bartsch 1907 Pyrgiscus Dall and Bartsch 1907 Pyrgiscus Turbonilla Dall and Bartsch 1907 Pyrgiscus Turbonilla Dall and Bartsch 1909 Pyrgiscus Turbonilla Dall and Bartsch 1909 Pyrgiscus Dall and Bartsch 1909 Pyrgiscus Turbonilla	Turbonilla Dall and Bartsch 1909 Pyrgiscus NA (Pyrgolampros) Turbonilla Dall and Bartsch 1910 NA (Pyrgolampros) Turbonilla Dall and Bartsch 1909 Pyrgiscus NA Turbonilla Dall and Bartsch 1909 Pyrgiscus NA Chemnitzia C. B. Adams 1852 Mormula NA Odostomia Carpenter 1856 Odostomia NA Turbonilla Dall and Bartsch 1909 Pyrgiscus NA Odostomia Dall and Bartsch 1909 Pyrgiscus NA Odostomia Dall and Bartsch 1909 Pyrgiscus NA Odostomia Strong 1938 NA NA Turbonilla Dall and Bartsch 1906 Amaura (Amaura) Odostomia Baker, Hanna & Strong 1928 NA NA Turbonilla Dall and Bartsch 1909 Strioturbonilla NA Turbonilla Dall and Bartsch 1909 Strioturbonilla NA Turbonilla Dall and Bartsch 1909 Pyrgiscus (Evalea) Turbonilla Dall and Bartsch 1907 Pyrgiscus (Pyrgiscus) Odostomia Dall and Bartsch 1909 Pyrgisculus NA Odostomia Dall and Bartsch 1909 Pyrgisculus (Chrysallida) Odostomia Dall and Bartsch 1909 Evalea (Evalea) Turbonilla Dall and Bartsch 1909 Pyrgisculus (Chrysallida) Odostomia Dall and Bartsch 1909 Evalea (Evalea) Turbonilla Dall and Bartsch 1909 Pyrgisculus (Chrysallida) Odostomia Dall and Bartsch 1909 Evalea (Evalea) Turbonilla Dall and Bartsch 1909 Pyrgisculus (Chemnitzia) Turbonilla Dall and Bartsch 1909 Evalea (Evalea) Turbonilla Dall and Bartsch 1907 Chemnitzia (Chemnitzia) Turbonilla Dall and Bartsch 1907 Chemnitzia (Chemnitzia) Turbonilla Dall and Bartsch 1907 Pyrgiscus (Pyrgiscus) Turbonilla Dall and Bartsch 1907 Pyrgiscus (Pyrgiscus) Turbonilla Dall and Bartsch 1909 Pyrgiscus (Pyrgis	Turbonilla Dall and Bartsch 1909 Pyrgiscus NA Pyrgiscus Turbonilla Dall and Bartsch 1910 NA (Pyrgolampros) Pyrgolampros Turbonilla Dall and Bartsch 1909 Pyrgiscus NA NA Turbonilla Bartsch 1927 NA NA NA Chemnitzia C. B. Adams 1852 Mormula NA NA Odostomia Dall and Bartsch 1917 NA NA NA Turbonilla Dall and Bartsch 1909 Pyrgiscus NA Pyrgiscus Odostomia Dall and Bartsch 1909 Pyrgiscus NA Pyrgiscus Odostomia Strong 1938 NA NA NA Evalea Turbonilla Baker, Hanna & Strong 1928 NA NA NA Pyrgiscus Odostomia Baker, Hanna & Strong 1928 NA NA NA NA Turbonilla Bartsch 1907 NA NA NA Pyrgiscus Odostomia Dall and Bartsch 1909 Pyrgisculus NA NA

			and rurbonilla i			
orariana	Cingula	Dall andd Bartsch 1909	lvidella	NA	NA	use as Ividella
orcia	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	NA	use as Aartsenia
orcutti	Odostomia	Bartsch 1917	NA	(Odostomia)	NA	use as Odostomia
oregonensis	Turbonilla	Dall and Bartsch 1907	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
oregonensis	Odostomia	Dall and Bartsch 1907	Chrysallida	(Chrysallida)	Chrysallida	Boonea in McLean 2007
ornatissima	Odostomia	(Hass 1943)	NA	NA	Chrysallida	use as Chrysallida
ovata	Chrysallida	Carpenter 1856	Chrysallida	NA	NA	use as Chrysallida
painei	Turbonilla	Dall and Bartsch 1909	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of chocolata per Abbott
panamensis	Chemnitzia	C. B. Adams 1852	Strioturbonilla	NA	NA	leave as Turbonilla
panamensis	Odostomia	Clessin 1900	Heida	NA	NA	use as Heida
paramoea	Chemitzia	Dall and Bartsch 1909	Chemnitzia	NA	NA	leave as Turbonilla
parella	Odostomia	Dall and Bartsch 1909	Evalea	NA	NA	use as Evalea
paucilirata	Dunkeria	Carpenter 1856	Pyrgisculus	NA	NA	leave as Turbonilla
pauli	Turbonilla	Smith & Gordon 1948	NA	NA	Bartschella	use as Bartschella
paupercula	Cingula	C. B. Adams 1852	Chrysallida	NA	NA	use as Chrysallida
pazana	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	NA	NA	leave as Turbonilla
pazensis	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Pyrgolampros	leave as Turbonilla
pedroana	Turbonilla	Dall and Bartsch 1903	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of chocolata per Abbott
pedroana	Odostomia	Dall and Bartsch 1909	Ividella	(Ividella)	Ividella	use as Ividella
penascoensis	Turbonilla	Lowe 1935	NA	NA	Ptycheulimella	use Eulimella per Aartsen et al 1998
pentalopha	Turbonilla	Dall and Bartsch 1903	Mormula	(Mormula)	Mormula	leave as Turbonilla
pequensis	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	Pyrgiscus	use as Pyrgiscus
pericuana	Turbonilla	Strong 1949	NA	NA	Pyrgiscus	use as Pyrgiscus
periscelida	Turbonilla	Dall and Bartsch 1909	Mormula	(Mormula)	Mormula	leave as Turbonilla
pesa	Turbonilla	Dall and Bartsch 1910	NA	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
pesa	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	NA	use as Aartsenia
phalera	Turbonilla	Dall and Bartsch 1909	Mormula	NA	NA	leave as Turbonilla
phanea	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	NA	NA	leave as Turbonilla
phanea	Odostomia	Dall and Bartsch 1907	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott
phanella	Odostomia	Dall and Bartsch 1909	Evalea	NA	Evalea	use as Evalea
pharcida	Odostomia	Dall and Bartsch 1907	Menestho	(Menestho)	Menestho	use as Menestho
photis	Crysallida	Carpenter 1856	Haldra	NA	NA	use as Haldra
pluto	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
poppei	Odostomia	Dall and Bartsch 1909	Egila	NA	NA	use as Egila
porteri		Baker, Hanna & Strong 1928	NA	NA	Miralda	use as Liamorpha per Aartsen et al 1998
•						
•						
•				, ,		
•				, ,		
•						
•						
					, , ,	
porteri pratoma profundicola profundicola prolongata promeces proxima pugetensis pulcherrima	Odostomia Turbonilla Odostomia	Dall and Bartsch 1909 Dall and Bartsch 1909 Dall and Bartsch 1909 Carpenter 1856 Dall and Bartsch 1909 de Folin 1872 Bartsch 1917		NA (Evalea) (Strioturbonilla) (Evalea) NA NA NA (Pyrgolampros) (Chrysallida)	Miralda Evalea Salassiella Evalea NA Chrysallida NA Pyrgolampros Chrysallida	use as Liamorpha per Aartsen et al 1998 use as Evalea syn of stylina per Abbott use as Evalea leave as Turbonilla syn of cincta per Wise use as Chrysallida leave as Turbonilla syn of cincta per Wise

			and "Turbonilla i	TOTT THE INC.		
socorroensis	Odostomia	Dall and Bartsch 1909	Evalea	NA	NA	syn of tenuisculpta per Abbott
spreadboroughi	Odostomia	Dall and Bartsch 1910	NA	(Evalea)	Evalea	use as Evalea
stelleri	Turbonilla	Bartsch 1927	NA	NA	Pyrgolampros	leave as Turbonilla
stenogyra	Turbonilla	Dall and Bartsch 1909	Careliopsis	NA	Careliopsis	use as Careliopsis
stephanogyra	Turbonilla	Dall and Bartsch 1909	Strioturbonilla	NA	NA	leave as Turbonilla
stephensi	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott
stillmani	Turbonilla	Smith & Gordon 1948	NA	NA	Pyrgolampros	leave as Turbonilla
straminea	Odostomia	Carpenter 1865	NA	NA	Evalea	syn of tenuisculpta per Abbott
striosa	Chemnitzia	C. B. Adams 1852	Pyrgiscus	NA	NA	use as Pyrgiscus
strongi	Turbonilla	Willett 1931	NA	NA	Pyrgolampros	leave as Turbonilla
strongi	Odostomia	Bartsch 1927	NA	NA	Evalea	use as Evalea
stylina	Chemnitzia	Carpenter 1864	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
subangulata	Dunkeria	Carpenter 1856	Dunkeria	NA	NA	leave as Turbonilla
subcuspidata	Turbonilla	Carpenter 1864	NA	NA	Pyrgiscus	syn of tenuicula per Abbott
subdotella	Odostomia	Hertlein and Strong 1951	NA	NA	Eulimastoma	use as Eulimastoma
subglobosa	Odostomia	Bartsch 1912	NA	(Amaura)	Amaura	use as Aartsenia
sublirulata	Odostomia	Carpenter 1856	Menestho	NA	NA	use as Menestho
subturrita	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	Amaura	use as Aartsenia
subula	Turbonilla	Mörch 1859	Pyrgiscus	NA	NA	use as Pyrgiscus
superba	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	NA	Pyrgiscus	use as Pyrgiscus
swani	Turbonilla	Dall and Bartsch 1909	Pyrgisculus	(Dunkeria)	NA	leave as Turbonilla
tacomaensis	Odostomia	Dall and Bartsch 1907	Evalea	(Evalea)	Evalea	use as Evalea
talama	Odostomia	Dall and Bartsch 1909	Chrysallida	NA	NA	use as Chrysallida
talma	Turbonilla	Bartsch 1910	NA	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
talpa	Odostomia	Dall and Bartsch 1909	Amaura	(Amaura)	NA	use as Aartsenia
taylori	Turbonilla	Dall and Bartsch 1907	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
tecalo	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus
telescopium	Chrysallida	Carpenter 1856	Chrysallida	NA	NA	use as Chrysallida
terebralis	Turbonilla	Carpenter 1857	NA	NA	Pyrgiscus	syn of tenuicula per Abbott
*tenuicula		Gould 1853	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	Pyrgiscus per McLean 2007
tenuis	Odostomia	Carpenter 1856	Evalea	NA	NA	use as Evalea
*tenuisculpta		Carpenter 1864	Evalea	(Evalea)	Evalea	Evalea in McLean 2007
terebellum	Cingula	C. B. Adams 1852	Miralda	NA	NA	use as Liamorpha per Aartsen et al 1998
terricula [see turricula]	Odostomia	Dall and Bartsch 1903	Ivara	(Ivara)	NA	lapsus
thalia	Odostomia	Bartsch 1912	NA	(Chrysallida)	Chrysallida	use as Chrysallida
thea		Bartsch 1912		(Evalea)	Evalea	use as Evalea
tillamookensis		Dall and Bartsch 1907	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott
tolteca	Turbonilla	Baker, Hanna & Strong 1928	NA	NA	Pyrgiscus	use as Pyrgiscus
torrita		Dall and Bartsch 1909	Chrysallida	NA	NA	use as Chrysallida
torquata	,	Gould 1853	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	leave as Turbonilla
trachis	Odostomia	Dall and Bartsch 1909	Chrysallida	(Chrysallida)	Chrysallida	use as Chrysallida
tremperi	Turbonilla	Bartsch 1917	NA	(Pyrgolampros)	Pyrgolampros	leave as Turbonilla
tremperi	Odostomia	Bartsch 1927	NA	NA	Chrysallida	use as Chrysallida
	Jassionna		1	1	J. II J Jamaa	

tridentata	Turbonilla	Carpenter 1865	Mormula	(Mormula)	Mormula	leave as Turbonilla
tropidita	Salassia	de Folin 1872	Salassia	NA	NA	use as Salassia
truncatula	Menestho	Odhner 1915	NA	NA	NA	Menestho [added per P. Lafollette]
turricula	Odostomia	Dall and Bartsch 1903	Ivara	NA	Ivara	use as Ivara
turrita	Chemnitzia	C. B. Adams 1852	Asmunda	NA	NA	leave as Turbonilla
tyleri	Odostomia	Dall and Bartsch 1909	Chrysallida	NA	NA	use as Chrysallida
ulloa	Turbonilla	Bartsch 1917	NA	NA	Pyrgiscus	use as Pyrgiscus
ulloana	Odostomia	Strong 1949	NA	NA	Ividella	use as Ividella
unalashkensis	Odostomia	Dall and Bartsch 1909	Evalea	(Evalea)	Evalea	use as Evalea
undata	Chemnitzia	Carpenter 1856	Strioturbonilla	NA	NA	leave as Turbonilla
unifasciata	Turbonilla	Carpenter 1857	NA	NA	Pyrgiscus	syn of turicula per Abbott
valdezi	Turbonilla	Dall and Bartsch 1907	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of aurantia per Abbott
valdezi	Odostomia	Dall and Bartsch 1907	Evalea	(Evalea)	NA	syn of tenuisculpta per Abbott
valeroi	Odostomia	Bartsch 1917	NA	NA	Evalea	use as Evalea
vancouverensis	Chemnitzia	Baird 1863	Strioturbonilla	(Strioturbonilla)	Strioturbonilla	syn of torquata per abbot
vancouverensis	Odostomia	Dall and Bartsch 1910	NA	(Evalea)	Evalea	use as Evalea
vexativa	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
vicola	Odostomia	Dall and Bartsch 1909	Chrysallida	(Chrysallida)	Chrysallida	syn of cincta per Wise
victoriana	Turbonilla	Dall and Bartsch 1907	Pyrgolampros	(Pyrgolampros)	Pyrgolampros	syn of aurantia per Abbott
vincta	Odostomia	Dall and Bartsch 1909	Chrysallida	(Chrysallida)	NA	syn of cincta per Wise
virginalis	Odostomia	Dall and Bartsch 1909	Chrysallida	(Chrysallida)	Chrysallida	use as Chrysallida
virgo	Chemnitzia	Carpenter 1865	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
vivesi	Turbonilla	Hertlein and Strong 1951	NA	NA	Pyrgiscus	use as Pyrgiscus
vizcainoana	Odostomia	Baker, Hanna & Strong 1928	NA	NA	Chrysallida	use as Chrysallida
viszainoi	Turbonilla	Bartsch 1917	NA	NA	Mormula	leave as Turbonilla
washingtonia	Odostomia	Bartsch 1920	NA	(Amaura)	Amaura	use as Aartsenia
weldi	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
whitei	Odostomia	Bartsch 1927	NA	NA	Evalea	use as Evalea
wickhami	Turbonilla	Dall and Bartsch 1909	Pyrgiscus	(Pyrgiscus)	Pyrgiscus	use as Pyrgiscus
willetti	Turbonilla	Smith & Gordon 1948	NA	NA	Pyrgolampros	leave as Turbonilla
willetti	Odostomia	Bartsch 1917	NA	(Evalea)	Evalea	use as Evalea
yolettae	Turbonilla	Hertlein and Strong 1951	NA	NA	Pyrgiscus	use as Pyrgiscus
youngi	Odostomia	Dall and Bartsch 1912	NA	(Evalea)	Evalea	use as Evalea
ziziphina	Parthenia	Carpenter 1856	Menestho	NA	NA	Oscilla per P. Lafollette