NEWSLETTER OF THE
AMERICAN MALACOLOGICAL SOCIETY

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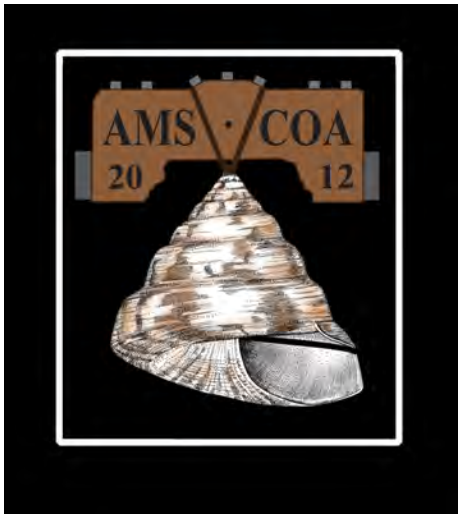
ANNOUNCEMENTS



AMS 2012 – PHILADELPHIA, PENNSYLVANIA
JUNE 16-21, 2012

Celebrating 200 Years of Molluscan Studies in America

Submitted by Gary Rosenberg, president AMS

One month to AMS-COA 2012!

The overlapping meetings of the American Malacological Society (June 16-21) and the Conchologists of America (June 19-24) in celebration of the bicentennial of molluscan studies in the Americas has turned out to be a big draw. More than 120 abstracts have been received for the AMS meeting and more than 150 people representing a dozen countries will be attending. Forty-five people have cross-registered to attend both meetings.

The deadline for hotel registration at the conference rate ($119/night) is rapidly approaching: May 17 at 5 pm. The deadline for early registration for the meeting has already passed, but please don't wait to register at the meeting: send in the registration form so we know how many people to expect at the various events.

A late addition to the schedule is a session Sunday afternoon (June 17) with NSF program officer Chuck Lydeard, who will discuss funding opportunities at NSF and the recent switch to pre-proposals, followed by questions and answers.

AMS-COA Schedule:

Saturday, June 16
Registration starts (noon)
AMS Council meeting (afternoon)
AMS Welcome Party (evening)

Sunday, June 17
Contributed talks, various subjects (all day)
Publication committee (noon)
Developments at NSF (pm)

Monday, June 18
Session on cephalopods (am)
Systematics committee (noon)
Symposium: invasive snails and slugs (pm)
Contributed talks, various subjects (all day)
AMS Auction (evening)

Tuesday, June 19
Symposium on molluscan diversity (all day)
North American mollusk conservation (am)
Conservation committee (noon)
Poster session (pm)
Bicentennial reception at ANSP (evening)

Wednesday, June 20
Talks by COA grant winners (all day)
Symposium on molluscan diversity (am)
Session on history of malacology (pm)
AMS business meeting (pm)
Joint AMS/COA banquet (evening)

Thursday, June 21
Talks by COA grant winners (am)
AMS ends, talks for COA continue (pm)
Silent auction (pm)
COA auction (evening)

Friday, June 22
Forum on rare shells (am)
COA talks continue (pm)
COA business meeting (pm)
Silent auctions (all day)

Saturday, June 23
Excursions (am)
COA Bourse (1 - 9 pm)

Sunday, June 24
COA Bourse (9 am - 3 pm)

OTHER UPCOMING MEETINGS

AMS/WCM 2013 – Azores, Portugal
July 21-28, 2013

Submitted by Peter Marko

The 2013 AMS meeting will be held in the Azores as part of the next World Congress of Malacology. The AMS has not met jointly with the WCM since 2007, so this represents a great chance to catch up with the global malacological community in an unusual biogeographical location. Our venue will be the Departamento de Biologia at the Universidade dos Açores, hosted by António M. de Frias Martins, president of Unitas Malacologica. Local organizers have plans to facilitate permitting and specimen collection. If you are interested in organizing a workshop or symposium at the meeting, please contact Peter Marko (pmarko@clemson.edu).

The 11th International Congress on Medical and Applied Malacology
September 25-29, 2012

Submitted by John Burch

The Eleventh International Congress on Medical and Applied Malacology (XI ICMAM) will be held in Rio de Janeiro, Brazil, September 25-29, 2012. This Congress is sponsored by the International Society for Medical and Applied Malacology, the Sociedade Brasileira de Malacologia, the Universidade do Estado do Rio de Janeiro, Unitas Malacologica, the Instituto Butantan, Conselho Nacional de Desenvolvimento Clentifico e Tecnológico, Fiocruz, and Unicamp.

The official language of the Congress is English.

The International Society for Medical and Applied Malacology (ISMAM), which is responsible for choosing the site and the overall organization of the international congresses, is devoted specifically the concerns of applied malacology, i.e., to medical, veterinary and agricultural malacology. The Society focuses its attention on mollusks as mediators of parasitic diseases of humans and domestic and other animals, and as pests of agriculture, materials, etc. Medical aspects include maladies such as schistosomiasis, paragonimiasis, fascioliasis, fasciolopsiasis, clonorchiasis, eosinophilic meningo-encephalitis, etc. The society's interest in mollusks includes taxonomy, ecology, eradication, host parasite relationships, etc. The Society is also active in promoting basic research on mollusks—of overall importance in understanding the biology of molluscan hosts—and in including presentations on basic research at the congresses.

The objectives of the Society include providing means of communication between the various scientists concerned with medical and applied aspects of malacology, and to that end, the Society holds international congresses, such as XI ICMAM, at periodic intervals. The First International Congress on Medical and Applied Malacology was held in Monterrey, Mexico, 2-6 June 1987. The countries sponsoring Congresses have been Australia, Chile, China (Peoples Republic), Cuba, Korea (Republic) (twice), Mexico (twice), Philippines, and Thailand. The most recent Congress was held in Busan (Republic of Korea) in August 2009.

For additional information on the XI ICMAM, please contact the Congress Committee at xiicmam@gmail.com. To visit the Web Site, see www.icmam2012.com.br.

International Meeting on Biology and Conservation of Freshwater Bivalves

Bragança, Portugal

4-7 September 2012

Submitted by Manuel Lopes-Lima

The Meeting will be held on the IPB auditorium at Bragança, Portugal. Updated information, including registration, the composition of the scientific and organizing committees is available at http://esa.ipb.pt/bivalves.

The Venue: Freshwater bivalves are a very important part of biodiversity, increasingly recognized as having key roles in the ecosystems they inhabit. Their global decline has been causing increasing concern. Although in recent decades there has been an increasing number of studies on the ecology and conservation of these animals, the integration of knowledge acquired by different research groups becomes urgent. This approach, in a comprehensive and integrative manner will also help policy makers to establish guidelines, which can then be applied in conservation management of these animals and their natural habitats.

It is under this perspective that we want to introduce the present event that will bring together international experts in biology and conservation of freshwater bivalves that through a cycle of conferences and debates, will be able to create a network of knowledge with the final goal of develop collaborative projects and eventually global directives for the protection and conservation of this important faunistic group.

So, we are inviting you to submit an abstract to the International Meeting on Biology and Conservation of Freshwater Bivalves. There will be several thematic symposia and poster sessions, covering the following subjects:

- Biology and ecology
- Conservation & threats to species and ecosystems
- Invasive species
- Phylogeny and phylogeography
- Systematics and taxonomy
- Physiology and reproduction
- Freshwater bivalves and ecosystem functioning

Deadlines:
- Early registration: 30 April
- Late registration: 31 July
- Abstract submission: 30 April

Other Announcements

The Establishment of the Southeast Asian Center for Medical Malacology, and a Course on Medical Malacology

Submitted by John Burch

The Southeast Asian Center for Medical Malacology was officially established in July 2011, in the Department of Social and Environmental Medicine, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand, by Dr. Pratap Singhasivanon, Dean of the Faculty. The countries of Southeast Asia are: Cambodia, Indonesia, Laos, Malaysia, Myanmar (Burma), Philippines, Singapore, Thailand, and Vietnam

A "Formal Course on Medical Malacology" will be taught during July 9-20, 2012, at the Southeast Asian Center for Medical Malacology. Topics covered in the course will be: Snails that Mediate Human and Veterinary Parasites, their Morphology, Taxonomy and Identification; Snail and Parasite Life Cycles; Geographic Distributions, Ecology and Habitats of Medically Important Snails; Laboratory and Field Methodology; and Control of Snail-mediated Diseases. The course is specifically designed for Southeast Asians, but as space allows, participants from other countries and areas will be accommodated. Tuition for the course is US$ 1200.

The course will be given in English by faculty members of the Southeast Center for Medical Malacology – Dr. John B. Burch, Visiting Professor of Malacology, Ms. Pusadee Sri-Aroon, and Dr. Yanin Limpanont.

For additional information regarding housing, etc., contact Dr. Yanin Limpanont, D.V.M., M.Sc, D.Sc., tmyanin@mahidol.ac.th or by regular mail at: Department of Social and Environmental Medicine, Faculty of Tropical Medicine, Mahidol University, 420/6 Rajvithi Road, Bangkok 10400, Thailand Bangkok, Thailand.

For information about Mahidol University see: http://www.mahidol.ac.th/mueng/about.htm

MEMBERS CONTRIBUTIONS

Thin-Layer Chromatographic Analysis of Neutral Lipids in Neonatal *Biomphalaria glabrata* Snails Maintained on a Nostoc sp. Diet

*Contributed by Amanda Balaban, Bernard Fried, and Joseph Sherma**

*Department of Biology, *Department of Chemistry*
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Easton, PA 18042

Biomphalaria glabrata is an economically important gastropod which serves as an intermediate host of larval trematodes such as *Schistosoma mansoni* and *Echinostoma caproni*. Vasta et al. (2011) described a method of rearing neonatal *B. glabrata* on a cyanobacteria Nostoc sp. diet that is more suitable for the culture of such young snails than the usual lettuce diet. Studies on the effects of the Nostoc diet on the physiology and biochemistry of neonatal *B. glabrata* have not been done. Neutral lipid profiles are good indicators of normal growth and development of *B. glabrata* in culture. In this study, we used high performance thin-layer chromatography (HPTLC) to determine qualitatively and quantitatively the neutral lipids present in whole neonatal *B. glabrata* maintained on the Nostoc diet. For comparative purposes, we also analyzed the neutral lipids in whole juvenile *B. glabrata*, 3.0-5.0 mm in diameter, maintained on a Romaine lettuce diet. The results of our HPTLC analysis of neutral lipids in these snails are reported herein.

Neonates were obtained from egg masses laid by mature *B. glabrata* snails and fed ad libitium on the Nostoc diet for 3 weeks as described in Vasta et al. (2011). The neonates were prepared for HPTLC analysis as described below. Three separate HPTLC trials were done on whole neonates maintained on the Nostoc diet. For comparative purposes an additional 3 trials of whole juvenile snails maintained on the Romaine lettuce diet were done.

All snail samples were homogenized using a 7 ml Pyrex Tenbroeck tissue grinder (Fisher Scientific, Inc.) with chloroform-methanol (2:1) solution. The Folch wash (0.88% KCl) was added to the samples to separate the lipophilic from the hydrophilic layer. The hydrophilic layer was then removed and discarded; the lipophilic layer was dried in a water bath (40-60°C) under N2 gas and the samples were reconstituted in chloroform-methanol (2:1) in a ratio of 10.2 µl/mg sample.

The HPTLC determination of neutral lipids in reconstituted samples was performed as described in O'Sullivan et al. (2012) using Nonpolar Lipid Mix B from Matreya, Inc.; Analtech laned, pre-adsorbent silica gel glass plates developed in a CAMAG twin trough chamber with the mobile phase petroleum ether-diethyl ether-glacial acetic acid (80:20:1); detection of separated zones with 5% phosphomolybdic acid spray reagent; and quantification of the identified lipids using a CAMAG Scanner 3 with winCATS software.

Quantitative densitometric analysis revealed that whole snails reared on Nostoc sp. did not show any significant differences in neutral lipid composition (Students t-test, $P \leq 0.05$) (Table 1) from the whole snails reared on a Romaine lettuce diet. Neutral lipids detected in both snail populations were free sterols and free fatty acids. Triacylglycerols, usually present as minor fractions in whole body samples of *B. glabrata*, were not seen. Additional minor unidentified bands were noted between the origin and the free sterol band.

Table 1. Percent lipid values for free sterols, free fatty acids, and triacylglycerols in whole snails reared on a Nostoc or Romaine lettuce diet. Data are presented as mean of 3 trials ± SEM.

Diet	Free Sterols	Free Fatty Acids	Triacylglycerols
Nostoc	0.078±0.024	0.235±0.123	0.020±0.020
Romaine lettuce	0.048±0.032	0.188±0.083	0.015±0.015

The similarity in the neutral lipid profiles between whole neonates maintained on the Nostoc diet and whole juveniles maintained on lettuce suggests that the Nostoc diet is adequate for maintaining the integrity of neutral lipids in cultured *B. glabrata* neonates.

Acknowledgments: We are grateful to Dr. Fred A. Lewis, head of the Schistosomiasis Laboratory, Biomedical Research Institute, Rockville, Maryland, for supplying adult *B. glabrata* snails used in this work through NIH-NIAID contract NO1-AI-55270.

References:

O'Sullivan C, Popovic N, Fried B, Sherma, J (2012) Effects of *Schistosoma mansoni* on the neutral and polar lipids in the liver, spleen, and small intestine of mice as determined by high performance thin layer chromatography. *Journal of Planar Chromatography* 25:259-261.

Vasta JD, LeSage KE, Fried B (2011) A simple method for culturing neonatal *Biomphalaria glabrata* snails. *Journal of Parasitology* 97:746-747.

Scientific publications resulting from AMS Student Award

Contributed by José Eduardo A. R. Marian

Departamento de Zoologia, Instituto de Biociências da Universidade de São Paulo. Rua do Matão, Travessa 14, n. 101, CEP 05508-090, São Paulo, SP, Brazil.
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Part of the results of my Ph.D. research, which has been supported by an AMS Student Award, was recently published in the "Biological Journal of the Linnean Society" (see abstract below). The author thanks the AMS, including all its councils, committees and members, for granting funding for this research, thus helping to defray several of the costs of this study.

Marian, J.E.A.R. (2012) A model to explain spermatophore implantation in cephalopods (Mollusca: Cephalopoda) and a discussion on its evolutionary origins and significance. *Biological Journal of the Linnean Society* 105: 711-726.

Abstract: Male coleoid cephalopods produce spermatophores that can attach autonomously on the female's body during a complex process of evagination called the 'spermatophoric reaction', during which the ejaculatory apparatus and spiral filament of the spermatophore are everted and exposed to the external milieu. In some deepwater cephalopods, the reaction leads to the intradermal implantation of the spermatophore, a hitherto enigmatic phenomenon. The present study builds upon several lines of evidence to propose that spermatophore implantation is probably achieved through the combination of (1) an 'evaginating-tube' mechanism performed by the everting ejaculatory apparatus and (2) the anchorage provided by the spiral filament's stellate particles. The proposed theoretical model assumes that, as it is exposed to the external milieu, each whorl of the spiral filament anchors to the surrounding tissue by means of its sharp stellate particles. As the ejaculatory apparatus tip continues evaginating, it grows in diameter and stretches lengthwise, enlarging the diameter of the whorl and propelling it, consequently tearing and pushing the anchored tissue outward and backward, and opening space for the next whorl to attach. After the ejaculatory apparatus has been everted and has perforated tissue, the cement body is extruded, possibly aiding in final attachment, and the sperm mass comes to lie inside the female tissue, encompassed by the everted ejaculatory apparatus tube. It is proposed that this unique, efficient spermatophore attachment mechanism possibly evolved in intimate relationship with the adoption of an active mode of life by coleoids. The possible roles of predation pressure and sperm competition in the evolution of this mechanism are also discussed.

Chromosomal polymorphism in Western Atlantic populations of the dogwhelk, *Nucella lapillus*

Contributed by Katie Vazquez and Peter S. Petraitis

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The dogwhelk, *Nucella lapillus*, is an important intertidal predator featured in studies of phenotypic plasticity and ecotypic variation. Ecotypic variation has been attributed to environmental factors, phenotypic plasticity, and chromosomal polymorphisms. In Europe, dogwhelks range in chromosome number from 2n = 26 to 36. Individuals with a higher chromosome number are more common on protected shores. Conversely, exposed shore populations typically have lower chromosome numbers. Past research has stated that dogwhelk populations in Maine are monomorphically of the 2n = 27 karyotype. The aim of this study was to extend the initial sampling range to document the distribution of karyotypes in the Western Atlantic. Preliminary results suggest that chromosome number ranges from 2n = 26 to 2n = 32 in dogwhelk populations in Maine.

Egg capsules were collected in June and July of 2011 and transported back to the flowing seawater laboratory at the University of Maine's Darling Marine Center. Egg capsules were collected from at least three different locations at each protected or exposed site. They were placed in glass culture wells covered with window screen and submerged in flowing seawater. The sea table was vacuumed frequently to prevent fouling of the egg capsules. Egg capsules were dissected in seawater with a razor. Only viable embryos were used. Each embryo was incubated in .05% colchicine in flowing seawater for one hour. Colchicine was pipetted off and embryos were washed twice with flowing seawater and .075M KCl (2:1) for 15 minutes. Embryos were then washed in seawater and.075 M KCl (1:1) for 15 minutes and twice more for 15 minutes in .075 M KCl. Embryos were then fixed 2 x 30 minutes in Carnoy's fixative, which is Ethanol and glacial acetic acid (3:1). After fixation embryos were placed into 3 drops of 60% glacial acetic acid

on a clean slide. Embryos were crushed with a spatula and the slide was transferred to a 60 °C hotplate. The cell suspension was allowed to round up and was subsequently transferred around the slide with a pasteur pipette until the drop had evaporated completely. For the purposes of imaging, slides were stained with Hoechst stain for 5 minutes and rinsed with distilled water for 1 minute. A glycerol and tris mounting media was used and slides were imaged at 63x with a fluorescent microscope. Chromosomes were counted using the imaging software ImageJ.

We are currently imaging metaphase spreads and preparing manuscripts regarding the chromosomal polymorphism and the morphological variation between and among exposed and protected shore ecotypes. We wish to acknowledge the AMS whose Student Award made metaphase spread preparation possible. We are grateful to the DMC, Sigma Xi, and the University of Pennsylvania's Binns-Williams fund for support.

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A Field Inventory of the Spring Mountainsnail (*Oreohelix handi*) and the Kyle Canyon Mountainsnail (*Oreohelix jaegeri*) from the Spring Mountains of Southern Nevada.

Contributed by Bobbie Bentz, Rachelle Smiley-Saltzman, and Mark Ports

Science Department, Great Basin College, Pahrump and Elko, Nevada.

Introduction: Three field trips were carried out by students and the senior author into the Spring Mountains, Clark County, Nevada. The objectives of these field trips were to carry out an inventory of Mountainsnail colonies, habitat descriptions, and identification of potential environmental and man-made impacts on these two species. These trips involved 3-4 day surveys taking place in mid-June, 2006 and 2010, and early-September, 2011 in Kyle Canyon on the east side of the Spring Mountains. Today Kyle Canyon and other nearby canyons are managed within the confines of the Spring Mountain National Recreation Area by the Humboldt-Toiyabe National Forest, United States Department of Agriculture.

Two species of Mountainsnails, *Oreohelix handi* (Pilsbry and Ferris, 1918) and *Oreohelix jaegeri* (S.S. Berry, 1931), are endemic to the Spring Mountains and were repeatedly collected in the Kyle Canyon area and side canyons; J.H. Ferriss, 1916, I.W. Clokey, 1938, E.C. Jaeger, 1927, and W.B. Miller, 1961. The taxonomy of these two species (or subspecies) will require more investigation due to the discrepancy found in Pilsbry (1939) and Turgeon (1998)

Methods: During the inventory periods we searched for colonies of *O. handi* and *O. jaegeri* by foot from the head waters of Kyle Canyon at an elevation of 2440m down to Pine Canyon located just above the Kyle Canyon Camp grounds at 2090m. The route up Kyle Canyon from Pine Canyon to the Mary Jane Trailhead is 7.25km. We walked trails and climbed mountain slopes searching for shells and live animals in potential habitats. Once a colony was discovered the station locality was determined using a Garmin GPS, the soil, rock, and talus matrix were described and the understory and over story plants were recorded. Using a digital camera, photographs were taken of live animals, shells, and each colony site (or station) along with surrounding cliffs, talus slopes, and drainages.

Approximately 375 student hours were accumulated in the inventory of 24 stations over the period of field work. We categorized habitat and colony health by the number of live adults, live juveniles, bones, the ground cover of talus rock, understory shrubs, over-story deciduous/coniferous forest. These were designated as "excellent", "good", "poor", or no Mountainsnails present. We revisited the collection stations as described by Pilsbry, 1939, and Berry, 1930. Shells, both holotype and paratypes, from these early collections were borrowed from the Academy of Natural Sciences of Philadelphia and the Santa Barbara Museum of Natural History. The Spring Mountainsnail *O. handi* and the Kyle Canyon Mountainsnail, *O. jaegeri* are separated primarily by shell diameter and height, (Pilsbry, 1939). Using metric calipers we measured the diameter and height of 16 shells of *O. handi* and twelve shells of *O. jaegeri*.

Results: Of the 25 stations we inventoried 2 had active adults, active juveniles, and white "bones"; 4 had active juveniles and bones; 8 had only bones; and 11 stations had no Mountainsnails. The two active stations with adults, juveniles, and bones were inventoried in early-June 2006 and 2010. One of these stations is located in Mazzie Canyon just above Kyle Canyon. This station had a colony size of >10x10m, a talus matrix of >8cm deep, a ground cover of 50% talus and 50% shrubs, an over story 30% deciduous trees, 20% conifers, and is situated on a north-facing slope at 2529m. A typical good habitat had a colony size of <10 X 10m, a talus matrix of 3-6cm, a ground cover of 30-45% talus, a shrub cover of 20-35% shrubs, an over-story of 20-30% deciduous trees, 60-80% conifers, and an

average elevation of 2360m. Stations with poor conditions had 10-25% talus, 10-45% shrubs, less than 3cm of matrix, an over-story of 10-25% deciduous trees, 60-90% conifers, and were situated on south-facing slopes, and located from 2150 – 2650m. Stations with no colonies present at all were located on south-facing slopes and had shallow, scattered talus, few shrubs, a dense litter of pine needles, dry soil, and an over-story dominated by conifers.

The mean diameter and height of 16 shells of *O. handi* are 8.17mm and 4.51mm respectively. The mean diameter and height of 12 shells of *O. jaegeri* are 13.46mm and 7.61mm respectively. These measurements are within the range of shell measurements for *O. handi* and *O. handi jaegeri* as described by Pilsbry (1939).

Discussion: From our surveys we suggest that the two Mountainsnails, *O. handi* and *O. jaegeri* are uncommon and possibly declining in Kyle Canyon and adjacent canyons of the Spring Mountains. One of the two excellent colonies of *O. handi* we found was in Mazzie Canyon above Kyle Canyon. While we found only one excellent and two poor colonies in this canyon, Pilsbry (1939) writes "Some hundreds of specimens were collected" by J. H. Ferriss in 1916 from what is most likely the same canyon. Other malacologists collecting in Kyle Canyon found colonies of π directly below Griffith's Hotel and within the hairpin turn section of the paved road. Today this area is developed with summer homes, a lodge, cabins, and parking lots. We did not inventory this area as it is now private property. We found only two good colonies of π approximately 3km further up the canyon from the developed area. Pratt (1978) suggests that these two species of Mountainsnails are sympatric in Kyle Canyon but we did not find any colonies to support this conclusion.

Potential negative impacts to Mountainsnail colonies in Kyle Canyon and adjacent canyons include the loss of habitat due to the development of summer homes (Clark County MSH, 2011), an increase in the number of roads and trails which are known to inhibit dispersal in Mountainsnails (Meadows, 2002), and human caused wildfires which can be very destructive of land snail populations, (Duncan, 2001). Wildfires and avalanche falls may have beneficial effects for land snails by stimulating the regrowth of new habitat (aspen, forbs, and grasses) components as found for Mountainsnails in Yellowstone National Park (Beetle, 1997). Mountain washouts due to rapid snow melt may aid in the dispersal of live land snails into unoccupied, suitable habitats as suggested by Pfenninger and Magnin (2001). Several washouts due to rapid snow melt or heavy summer rains have occurred repeatedly in Kyle Canyon over the last 100 years and this maybe a mode of dispersal for the Spring Mountain and Kyle Canyon Mountainsnails.

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Pfenninger, M, Magnin, F (2001) Phenotypic evolution and hidden speciation in *Candidula unifasciata ssp.* (Helicellinae, Gastropoda) inferred by 16S variation and quantitative shell traits. *Molecular Ecology* 10(10): 2541-54.

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Pratt, WL (1979) A Comparative study of two sympatric, closely related *Oreohelix* species of the *O. hemphilli* group. *American Malacological Union Bulletin*. 1978 (45):64.

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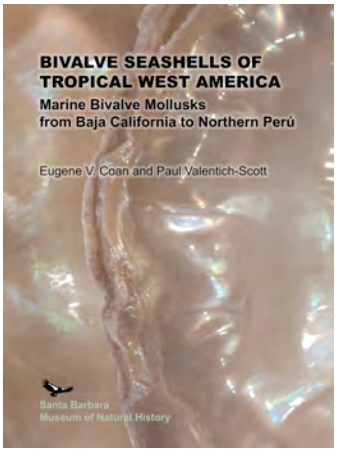
New Publications

Bivalve Seashells of Tropical West America

Contributed by Paul Valentich-Scott

Santa Barbara Museum of Natural History



The Santa Barbara Museum of Natural History latest scientific publication, Bivalve Seashells of Tropical West America, is finally a reality. Nine years in the making, the monograph documents and describes all bivalve mollusks from Baja California, Mexico to northern Peru, from the

intertidal zone to depths of more than 4,500 meters. It includes over 5,000 full color photographs of 890 species, along with a description of its shell, habitat, and ecology, and cites over 5,000 bibliographic references. There are 15 species included that are new to science, along with three new genera.

The publication is available directly from the Museum. The cost of the two-volume hardbound book is $US 150, plus postage and handling, and is now shipping. Further information and a sample chapter are available at: http://sbnature.org/crc/742.html

This tremendous effort was led by Dr. Eugene V. Coan and Paul Valentich-Scott of the Santa Barbara Museum of Natural History. The authors examined bivalve specimens located in museums around the world and documented the hundreds of species living in the region. Most of the species are well represented in the Santa Barbara Museum's vast collection of some 2.5 million shells.

For more information on the scientific content, please call Paul Valentich-Scott at (805) 682-4711, extension 146 or pvscott@sbnature2.org. For ordering information contact Patricia Sadeghian at extension 147 or psadeghian@sbnature2.org.

MESSAGE FROM THE NEWSLETTER EDITOR

Contributions to the biannual AMS newsletter are always welcomed. Send articles, short notes or news items to **Christine Parent**, the newsletter editor, at the following address (note the change of address):

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