

Mom, Forget the Tyrannosaurus; I Want to Talk to That Lady Holding Up a Truly Spiny Sea Star!

Dave Pawson



NO BONES NEWSLETTER

is published quarterly by the
Section of Invertebrate Zoology
Department of Zoology
National Museum of Natural History
Smithsonian Institution

CONTENTS:	PAGE:
COVER STORY	1
RESEARCH	2
TRAVEL	4
OUTREACH	5
LIBRARIES	5
VISITORS	6
PUBLICATIONS	6

Here's a general knowledge question: what is light brown, has five arms, and fascinates hundreds of visitors to our museum? Answer: a long-dead museum specimen of a giant sea star. **Cindy Ahearn**, Museum Specialist in Invertebrate Zoology, has been out in the museum's public areas with a cart laden with echinoderms (sea stars, sea urchins and their relatives). As soon as she appears, she is surrounded by crowds who have endless questions for her. Cindy's message is of great interest to our visitors. She tells them that behind the scenes we have enormous collections of invertebrate animals of great scientific importance. She tells them why we keep such collections and what we can gain from studying them. She also tells the visitors about her cart full of weird echinoderms; what they are, where they live, how they've been around for 600 million years, and how nasty

they can be as predators on oysters, mussels and coral reefs.

Over a year ago, I received a grant from the Smithsonian Women's Committee to sponsor our plan to get the message of Invertebrate Zoology out to the public. The grant is intended to cover the cost of producing and printing thousands of brochures on various groups of invertebrates, to be handed out to the public from our display carts. After a series of delays, the brochures are finally in production. I sought this grant for two reasons: First, the millions of people who come through our museum every year return home knowing little about our behind-the-scenes IZ research efforts, and second, almost no marine invertebrates are on public display (apart from the giant squid exhibit). We expect that the magnificent new Oceans Hall will rectify these deficiencies, but this is still some years away.

continued on pg 2



*Cindy Ahearn demonstrates how an Antarctic sea star, *Macroptychaster accrescens*, regulates internal water flow with hundreds of exposed tube feet thereby controlling locomotion. (photo by Yolanda Villacampa)*

COVER STORY CONT.



Display cart used in outreach program.
(photo by Yolanda Villacampa)

Soon, we will have carts with crabs and lobsters, clams and snails, worms of all kinds, out in the public areas, and we will also have carts dealing with individual small groups of animals (e.g. leeches, nematodes), or with topics of special interest, such as a live sea urchin larvae, or the life history of the blue crab. The possibilities for displays are endless, as is the curiosity of our visitors.

Eight sessions, totalling over 40 hours have occurred in public areas and Cindy remains ecstatic over the degree of interest shown in her animals. She estimated that she spoke to upwards of 400 people per session. What a great start!

We acknowledge valuable help and advice from the Museum's Office of Education, moral support from our Director's Office, and of course financial support from the Smithsonian Women's Committee.

NEWSLETTER STAFF

Jonathan Coddington
Interim head, IZ

Geoff Keel
editor
keelw@si.edu

Summer issue produced by
Barbara Littman & Karen
Reed

Rose Gulledge, Geoff Keel,
Barbara Littman, Bill Moser,
Lana Ong, Karen Reed,
Marilyn Schotte, Yolanda
Villacampa
newsletter staff

Richard Greene
library
greener@si.edu

*Please submit news or articles
via email or disk by the 15th of
the month prior to publication.*

*Publication in this newsletter
does not constitute publication
in a taxonomic or any other
scientific context*

RESEARCH

Taking a Bite Out of Echinoderms in the Bight

Dave Pawson

In October, **Dave Pawson** and **Doris Vance** will begin a study of the echinoderms (sea stars, sea urchins and their relatives) of the South Atlantic Bight, in the area between Cape Hatteras and Cape Canaveral, to a depth of at least 1,000 meters. This project will be supported by Federal agencies through the Southeastern Regional Taxonomic Center (SERTC), located in the Marine Resources Research Institute of the South Carolina Department of Natural Resources). We will produce much-needed annotated checklists and illustrated keys to the more than 700 species known from the area. New collections will be made on research cruises in the Bight, and alcohol preserved and frozen samples will be added to the reference collection at SERTC and here at NMNH. Short courses will be run to help local staff and students

identify echinoderms from the Bight.

This study will complement our just-completed survey of Gulf of Mexico echinoderms (700 species), and it will extend to the north our Johnson-Sea-Link submersible research on bathyal echinoderms of the Bahama Islands (200 species).



Astropecten duplicatus is a common sea star on sandy bottoms in the Bight. (photo by John Miller)

RESEARCH CONT.

Histology and Evolution in Cephalopods, the Inner Workings of Tentacle-Clubs

Richard Young and Michael Vecchione

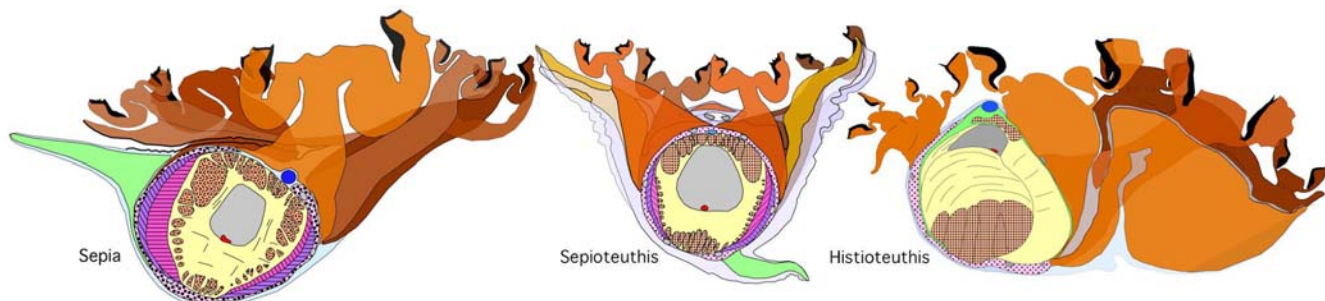
The single feature that unites species of the Decapodiformes (squids, cuttlefishes and relatives) is the presence of tentacles. The tentacle-clubs, with varying arrangements and structures of suckers and/or hooks, possess many primary features used to distinguish families, genera and species in the group. We formerly considered the club to be the expanded end of a modified arm in which all the useful systematics features were clearly visible on its surface, and we were surprised when thick cross-sections with a razor-blade through the clubs of several species revealed major differences. As a result, we began a project to examine the histology of club cross-sections made possible by the

volunteered expertise of **Barbara Littman** using paraffin embedding, sectioning and staining of these tissues. Our hope is that this study will clarify evolutionary relationships among the three major groups of the Decapodiformes and the families of one group (the oceanic squids). Familial relationships within the latter group are particularly murky and standard characters have failed to provide much resolution.

Making serial sections through the clubs is difficult due to the combination of hard sucker rings and/or hooks and the softer skin, muscle and associated tissues. This was compounded by the use of

museum specimens that were not fixed and preserved with histology in mind. Analysis of the sections is also difficult as it involves transferring many detailed tracings of the sections to the computer then building up 3-D views of the club. We are encouraged by the results so far. The illustration below representing the three major decapodiform groups give an indication of how different the structure of the clubs can be.

Additionally, we hope to determine pleisiomorphic characters by examining arm cross-sections since there is no outgroup of the Decapodiformes that have tentacles.



Reconstructions from paraffin cross-sections of the clubs of *Histioteuthis reversa* (an oegopsid), *Sepioteuthis* sp. (a loliginid) and *Sepia officinalis* (an asepioid). Reconstructions were made with Canvas 9.0 software on a Macintosh computer. (made by Richard Young)

Nemertean Ectosymbionts on Decapod Crustaceans

Jon Norenburg is sponsoring Cynthia Santos of the University of São Paulo, Brazil as a three-month Link Fellow at the Smithsonian Marine Station at Fort Pierce, Florida. Jon is the research adviser for her Ph.D dissertation work on the nemertean genus *Carcinonemertes*, whose members live exclusively as ectosymbionts

on decapod crustaceans, including most commercial crab species. The nemerteans eat only the developing eggs carried by the female crabs, having a significant impact on population recruitment. Cynthia's work is part of a large collaborative effort with Jon to document as many host relationships as possible and use

that as a basis for a genetic study to assess their host specificity.

Jon and Cynthia took their study to Bocas del Toro, Panama, 1-13 August, participating in a workshop and taking advantage of the expertise of participating crustacean researchers.

T R A V E L

Sixth International Conference on Nemertean Biology, Ogden, Utah

Megan Schwartz and Rebecca Ritger

The Sixth International Conference on Nemertean Biology met 21-24 June 2004 on the campus of Weber State University in Ogden, Utah. This year a number of countries were represented, including Brazil, Chile, Japan and Austria. We were pleased to meet some new faces eager to begin and continue life as nemertean biologists. The Smithsonian Institution was represented by **Jon Norenburg**, **Frank Crandall**, **Megan Schwartz**, **Rebecca Ritger**, **James Andreassi** and **Tristan Carland**.

Norenburg chaired a workshop discussion of the nemertean website, <http://nemertes.si.edu> a resource hosted on Smithsonian servers and one of the products from the nemertean PEET grant. 'Nemertes', as it has been designated, is designed as a comprehensive resource of nemertean information for the amateur naturalist as well as the seasoned researcher. By the end of summer, researchers with a login can make data contributions by uploading images and text, participate in an on-going discussion forum and help edit several extensive databases. Interns Andreassi and Carland, programmers of the new data pages, demonstrated it to the group. They included tutorials on creating species data pages, complete with descriptions of field-types, uploading images to the image database, editing the literature databases and an overview of the GIS mapping function of the site. The web workshop was highly productive, generated team spirit and will greatly enhance the knowledge-base for nemertean biology. These pages will help

enormously in bringing together our small and widely spread nemertean research community.

'Nemertes' will also serve a key outreach function, providing the only on-line source for non-specialists to nemertean biology and an associated glossary of anatomical and biological terms, an interactive 3D nemertean anatomy model and other specialized modules.

Formal paper contributions from the Smithsonian group addressed modern techniques like molecular sequencing from multiple genes, confocal microscopy and advanced phylogenetic methodologies and theory, and more traditional and valuable histological preparations to reveal new, important insights into nemertean biology

and evolution. Papers from our group also included molecular and morphological phylogenies for the Nemertea and Heteronemertea, new species descriptions from the Smithsonian Marine Station in Fort Pierce, Florida and Carrie Bow Cay, Belize, morphological adaptations to adult pelagic life-style and a report on the discovery of three new larval types within the Heteronemertea and comparative larval morphology.

Other papers reflected the diverse interests of the nemertean research community and included a study of heat shock protein expression, sequencing the total mitochondrial genome of several nemerteans, comparative ultrastructure of proboscides, surveys of parasites of nemerteans and nemertean sexual behavior,

continued on pg 5



Participants (left to right): 1st row - Alexander Seitz, Clint Tuberville; 2nd row - Patricia Sadeghian, Megan Schwartz, Cynthia Santos, Rebecca Ritger, Bob Okazaki, Pam Roe, Jon Norenburg; 3rd row - Martin Theil, Tristan Carland, Frank Crandall, John McDermott, Fumio Iwata. Not pictured - James Andreassi

T R A V E L CONT.

experiments in nemertean predation on amphipods in Chile, surveys of crab egg-eating nemertean infestation of the Pacific coasts of North American crabs and even the potential use of a nemertean model for human spinal chord regeneration. There were new species descriptions of benthic nemerteans from Zhangjiang, China, Friday Harbor, Washington, pelagic nemerteans from California and Hawaii and a crab egg-eating group, *Carcinonemertes*, from the

southeastern coast of Brazil. A special conference proceeding in *Hydrobiologia* will include most papers.

As we only meet every four years, there was also a lot of just talking and catching up. We look forward to the Seventh International Conference, which will be held in 2008, and hosted by 'the next generation' of nemertean researchers in São Paulo, Brazil.

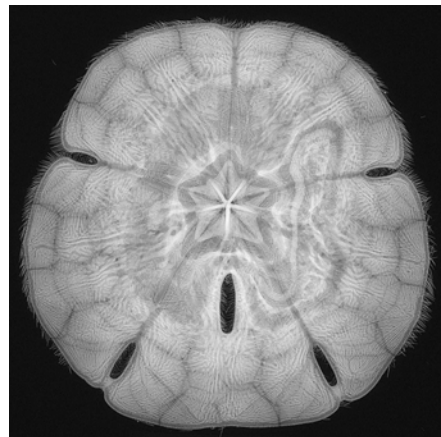
O U T R E A C H

Summer Student Successfully Studies Strange Sand Dollars

Dave Pawson

For ten weeks this summer, my Research Training Program student Arden Ashley studied some sand dollars that we thought might be hybrids between two genera, *Mellita* and *Encope*. These animals were collected in Florida 30 years ago, near the Smithsonian Marine Station at Link Port, Fort Pierce, Florida. Arden used scanning electron microscopy and X-radiography, along with traditional morphometric analyses, and she concluded that indeed these animals are intergeneric hybrids – rarely found in the wild! Her results were supported by our laboratory studies at Fort Pierce, where we have been successful in fertilizing *Mellita* eggs with *Encope* sperm. We plan to rear these hybrids in the laboratory in the near future.

Arden is a senior at Macalester College in St. Paul, Minnesota. She will spend the last part of summer in Cork, Ireland,



An X-ray picture of a hybrid sand dollar, showing internal structures. Length, 65mm. (photo by Arden Ashley)

attending a paleontology course. She plans to become a secondary school science teacher. We have greatly enjoyed Arden's cheerful company this summer, and wish her well in her future endeavors.

L I B R A R Y

Cretaceous and Eocene Decapod Crustaceans from Southern Vancouver Island. Ottawa: NRC Research Press, 2003.

Proceedings of the First International Symposium on Deep-Sea Corals (Dalhousie University, Halifax, N.S., July 30-Aug. 3, 2000). Halifax, Nova Scotia: Ecology Action Centre/Nova Scotia Museum, 2001.

Zebra mussels and the Mid-Atlantic: reports from the Sea Grant Programs of New Jersey, Delaware, Maryland, Virginia, and North Carolina. College Park, MD: Maryland Sea Grant College, ca. 1993.

Abbott, Donald P. et al. **Reef and Shore Fauna of Hawaii, Section 6B: Ascidians (Urochordata).** Bishop Museum Special Publication 64, Honolulu: Bishop Museum Press, 1997.

Adrianov, A. V. and Malakhov, V. V. **Golovokhobotnye chervi (Cephalorhyncha) mirovogo okeana: opredelitel morskogo fauny (Cephalorhyncha of the World Ocean).** Moskva: KMK Scientific Press, 1999.

Aescht, Erna. **Catalogue of the Generic Names of Ciliates (Protozoa, Ciliophora).** Denisia 1, Linz: Oberösterreichs Landes Museum, 2001.

Bauer, Raymond T. **Remarkable Shrimps: Adaptations and Natural History of the Carideans.** Animal Natural History Series, vol. 7, Norman: University of Oklahoma Press, 2004.

Blakemore, Rob J. **Tasmanian Earthworms.** [CD] Kippax, Australia, 2000.

Dussart, B. and Defaye, D. **World Directory of Crustacea Copepoda of Inland Waters, 1: Calanifomes.** Leiden: Backhuys Publishers, 2002.

continued on pg 6

V I S I T O R S

Todd Haney, Los Angeles County Museum, Los Angeles, California (05/04-05/05) used resources in the Crustacea Library. **Sponsor: Marilyn Schotte.**

Lena Markhaseva, Russian Academy of Sciences, St. Petersburg, Russia (05/14- 07/09) worked with Dr. Ferrari on a cooperative study of deep-sea, benthopelagic calanoid copepods. **Sponsor: Frank Ferrari.**

Marjorie Reaka-Kudla, University of Maryland (05/17/04-05/17/05) consulted the stomatopod library and examined the stomatopod collections. **Sponsor: Rafael Lemaitre.**

Chris Meyer, University of Florida, Gainesville, Florida (05/26-05/26) verified localities for field work on limpets and turbinids. **Sponsor: Jerry Harasewych.**

Ken-Ichi Hayashi, National Fisheries University, Shimonoseki, Japan (05/24-05/30) studied pasiphaeid shrimp. **Sponsor: Rafael Lemaitre.**

Robert Stone, Auke Bay Lab, NMFS, Juneau, Alaska (05/25-05/26) consulted with Dr. Cairns on identification of octocorals. **Sponsor: Steve Cairns.**

Bruce Wing, Auke Bay Lab, NMFS, Juneau, Alaska (05/25- 05/26) consulted with Drs. Bayer and Cairns on the identification of North Pacific octocorals, stylasterids, and scleractinia. **Sponsor: Steve Cairns.**

Andreas Broesing, Technische Universität, Ilmenau, Germany (06/07 - 06/12) studied foregut ossicles of brachyuran crabs. **Sponsor: Rafael Lemaitre.**

Clark Beasley, McMurry University, Abilene, Texas (06/17-06/18) reviewed the tardigrade collection and scanned Tardigrade reprints. **Sponsor: Cheryl Bright.**

William Miller, Chestnut Hill College, Philadelphia, Pennsylvania (06/17-06/18) reviewed the tardigrade collection and scanned Tardigrade reprints. **Sponsor: Cheryl Bright.**

Edith Chave, NOAA, Honolulu, Hawaii (06/22-06/23) consulted with Dr. Cairns identified photographs of deep-sea corals from Hawaii. **Sponsor: Steve Cairns.**

Daniel Kluza, U.S. Environmental Protection Agency, District of Columbia (06/21) consulted collections and associated information for invasive species research. **Sponsor: Rafael Lemaitre.**

Daniel Kluza, U.S. Environmental Protection Agency, District of Columbia (06/23) studied *Limnoperna fortunei*. **Sponsor: Jerry Harasewych.**

Ana Maria Millan Marquez, Instituto de Investigaciones Marina y Costeras, Columbia (06/29-07/14) conducted library research and revised two morphotypes of Marginellidae and Hydrobiidae. **Sponsor: Jerry Harasewych, Yolanda Villacampa.**

Alexey Kotov, A.N. Severtsov Institute of Ecology and Evolution, Moscow, Russia (06/30-07/01) studied Cladocera collection. **Sponsor: Frank Ferrari.**

Derek Taylor, Buffalo University, Buffalo, New York (06/30-07/01) studied Cladocera collection. **Sponsor: Frank Ferrari.**

continued on pg 8

L I B R A R Y C O N T.

Jass, Joan and Klausmeier, Barbara. **Minnesota and Wisconsin Fairy Shrimps (Crustacea: Branchiopoda: Anostraca) including information on other species of the Midwest.** Milwaukee Public Museum Contributions in Biology and Geology, no. 97, Milwaukee: Milwaukee Public Museum, 2002.

Kensley, Brian and Brusca, Richard, eds. **Isopod Systematics and Evolution.** Crustacean Issues 13, Rotterdam: A. A. Balkema, 2001.

Korn, Dieter and Klug, Christian. **Ammoniae Devonicae.** Fossilium Catalogus 1: Animalia pars 138. Leiden: Backhuys, 2002.

Portell, Roger W. and Agnew, Jeffrey G. **Pliocene and Pleistocene Decapod Crustaceans.** Florida Fossil Invertebrates, Pt. 4, Gainesville: Florida Paleontological Society, 2004.

Schütt, Hartwig. **Türkischen Landschnecken 1758-2000. 3: vollständig revidierte und erweiterte Auflage.** Acta Biologica Benrodis, Supplementband 4, Solingen; Verlag Natur & Wissenschaft Harro Hieronimus & Dr. Jürgen Schmidt, 2001.

P U B L I C A T I O N S

Cairns, S.D. & F.M. Bayer. 2004. Studies on western Atlantic Octocorallia (Coelenterata: Anthozoa). Part 4. The genus *Paracalyptophora* Kinoshita, 1908. Proceedings of the Biological Society of Washington 117 (1):114-139.

Cairns, S.D. 2004. A new shallow-water species of *Javania* (Scleractinia: Flabellidae) from Indonesia. The Raffles Bulletin of Zoology 52(1):7-10.

continued on pg 8

T R A V E L CONT.

Eight International Polychaete Conference & Third International Course on Cladistics and Polychaetes

Linda Ward

Kristian Fauchald and **Linda Ward** attended the Eighth International Polychaete Conference, which was held 5-9 July on the campus of the Universidad Autónoma de Madrid in Canto Blanco just outside of Madrid, Spain. There were approximately 180 polychaetologists from around the

world attending the conference this year with more than 128 posters and 50 papers presented, including Kristian's talk: "Scales, bristles and missing antennae: the joys of polynoid systematics". Linda prepared for distribution a mini-CD that contained the latest

version of the Ward, Fauchald & Keel polychaete bibliography along with searchable and plain pdf versions of some of Marian Pettibone's papers as well as Kristian's massive review paper on the genus *Eunice* that had been published in the *Smithsonian Contributions to Zoology* series.



End of the Conference (left to right): Andie Mackie (Wales), Greg Rouse (Australia, former SI postdoc), Fredrik Pleijel (France), Kristian Fauchald (USA), Damhait McHugh (USA., former SI predoc). (Photo by Linda Ward)

The conference was preceded by the Third International Course on Cladistics and Polychaetes 21 June-4 July which was taught by Fredrik Pleijel (Muséum national d'Histoire naturelle), Greg Rouse (South Australian Museum) and Arne Nygren (a Swedish polychaetologist). Fauchald gave two lectures to the students, one on the history of polychaetology, people and concepts, and another on the variability and systematics of polychaetes.

Other Travel

Kristian Fauchald and **Geoff Keel** spent two weeks, 14-28 July at the Smithsonian Carrie Bow Cay Research Station, Belize collecting and preserving scale-worms. The trip was very successful. Some of the best fixed worms to date were collected with material for detailed studies of several genera.

During the week of 17-24 July, **Clyde Roper** attended the annual conference of the National Marine Educators Association at Eckerd College (St. Petersburg, Florida). He also visited Mote Marine Laboratory in Sarasota, Florida where he is an Adjunct Scientist, and with a colleague helped to prepare specimens for display in the SITES traveling exhibit on the Giant Squid.

Clyde Roper participated in the virtual "Meet the Scientist" project of the summer camp for middle and high school students conducted by the Shedd Aquarium (Chicago, Illinois) on 29 July. The presentation and Q&A were conducted via a live video connection from the education studio of Natural Partners through the good efforts of Jim Wehmeyer, NMNH.

Rafael Lemaitre traveled to Smithsonian Tropical Research Institute (Panama) to collect hermit crabs with Darryl Felder (University of Louisiana-Lafayette) 1-15 August.

Clyde Roper will participate in site evaluations, advisory meetings and fund raising conversation for the Citizens for a Seacoast Aquarium in Portsmouth, New Hampshire during the week 26 August - 2 September.

O U T R E A C H CONT.

Jessica Rawlins - Summer Intern

Jessica is a sophomore from Dartmouth College in Hanover, New Hampshire where she is studying anthropology and religion.

As an intern Jessica has scanned and enhanced many plates of ostracod figures. In addition she has begun to create a listing of uncataloged non-type gammaridean amphipod specimens to determine how many genera and species are not counted in EMu.

Jessica is a native of the Washington, D.C. area, but has traveled to France and Switzerland and toured the United States.

Music is her main hobby, and the violin her principal instrument but she's set that aside to pursue her vocal interests, including gospel and jazz vocal stylings.

V I S I T O R S CONT.

Elise Maldonado, Smithsonian Institution (ARC), District of Columbia (07/02 & 7/09) facilitated an echinoderm presentation. **Sponsor: Cindy Ahearn.**

John Clamp, N.C. Central University, Durham, North Carolina (07/06-07/07) studied ciliates on amphipods. **Sponsor: Rafael Lemaitre.**

Karen Haberman, Western Oregon University, Monmouth, Oregon (07/07-07/16) analyzed the gut contents of Palmer LTER krill. **Sponsor: Bill Moser, Cheryl Bright.**

Karin Marasko, 'Chemical Engineering News', District of Columbia (07/09) researched Mollusks as pearl makers. **Sponsor: Paul Greenhall.**

Amy Bower, Goddard Space Center & NMNH Office of Exhibits (07/21) obtained preservative for a viscosity study in outerspace. **Sponsor: Paul Greenhall.**

Yuri Kantor, Severtzov Institute, Russian Academy of Science, Moscow, Russia, 07/26-09/30) collaborated with Jerry on the neogastropod evolution with emphasis on the neogastropod fauna of Patagonia and Antarctica. **Sponsor: Jerry Harasewych.**

Luz Eneida Quiñones, Inter-American University of Puerto Rico, San Germán Puerto Rico (07/27) study copepod holdings and types. **Sponsor: Rafael Lemaitre.**

Lisa Torres, California State University, Los Angeles, California (07/27-07/28) discussed ostracod systematics, visited the collection and presented a seminar in Latino Lecture Series. **Sponsor: Lou Kornicker.**

Jack Burch, University of Michigan, Ann Arbor, Michigan, (08/05-08/06) photographed freshwater snail types. **Sponsor: Bob Hershler.**

Robert Keddell, Educators for Connecting Research to the K-16 Classroom with the Smithsonian Associates (08/12) gave a tour of the mollusk collections for the summer camp students. **Sponsor: Yolanda Villacampa.**

P U B L I C A T I O N S CONT.

Cairns, S.D. & F.M. Bayer. 2004. *Narella* Gray, 1870 (Coelenterata, Octocorallia): proposed conservation of usage by designation of a neotype for its type species *Primnoa regularis* Duchassaing & Michelotti, 1860. *Bulletin of Zoological Nomenclature* 61(1):7-10.

Felder, D.L. & B. Kensley. 2004. A new species of axiid shrimp from chemosynthetic communities of the Louisiana continental slope, Gulf of Mexico (Crustacea: Decapoda: Thalassinidea). *Proceedings of the Biological Society of Washington* 117(1):68-75.

Kensley, B. 2004. Redescription and distribution of two species of *Syscenus* (Crustacea, Isopoda, Aegidae) in the North Atlantic. *Proceedings of the Biological Society of Washington* 117(2):15.

Pawson, D.L. 2004. Brittle star optics. *McGraw-Hill Yearbook of Science and Technology.*

Pawson, D.L. 2004. *Ovalidota milleri*, a new genus and species of bathyal sea cucumber from the Caribbean Sea (Echinodermata: Holothuroidea: Apodida). *Zootaxa* 561:1-6.

Pawson, D.L. & D.J. Vance. 2004. *Chiridota heheva*, new species, from Western Atlantic deep-sea cold seeps and anthropogenic habitats (Echinodermata: Holothuroidea: Apodida). *Zootaxa* 534:1-12.

Schotte, M. & R.W. Heard. 2004. A new species of *Synidotea* (Crustacea: Isopoda: Valvifera) from the northern Gulf of Mexico. *Proceedings of the Biological Society of Washington* 117(1):88-94.

Next Issue:
**Interviews with the new
IZ, Ellen Strong
and NMFS, Allen Collins
staff**