



NO BONES NEWSLETTER

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

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Using Snails as a Tool for Elucidating Paleodrainage

Bob Hershler, Research Zoologist

Ever since I began studying the systematics of aquatic snails in northern Mexico in 1978, my long term goal has been to utilize these animals as a tool for investigating the aquatic biogeography of western North America, thus providing a complement to the more intensively studied fishes of the region. This subject is of obvious interest given the spectacular landscape of western North America, replete with desert basins and imposing mountain ranges. However regional biogeographic studies also can be of value in providing clues to early drainage

patterns that are still poorly understood from the geological perspective. There is, for instance, no current consensus as to the lower course of the Colorado River prior to the incision of Grand Canyon.

Snails of the family Hydrobiidae are especially suitable for such inquiries as they have been present in the region since the mid-Tertiary, they have speciated extensively, and they disperse but slowly. Unfortunately, this fauna was poorly known previously owing to the absence of thorough field surveys in



Bob Hershler collecting in Death Valley National Park (photo by Peter Rowlands)

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COVER STORY CONT.

many areas of the West, and the diminutive nature of these snails (generally only 2-4 mm in shell length), which renders their taxonomic study challenging. Thus, as a pre-requisite to biogeographic analysis I have conducted a field survey and taxonomic study of this fauna (together with several collaborators) over a period of many years. A series of papers that provide a taxonomic review of the major western groups was completed in 1999, although additional new species still await description.

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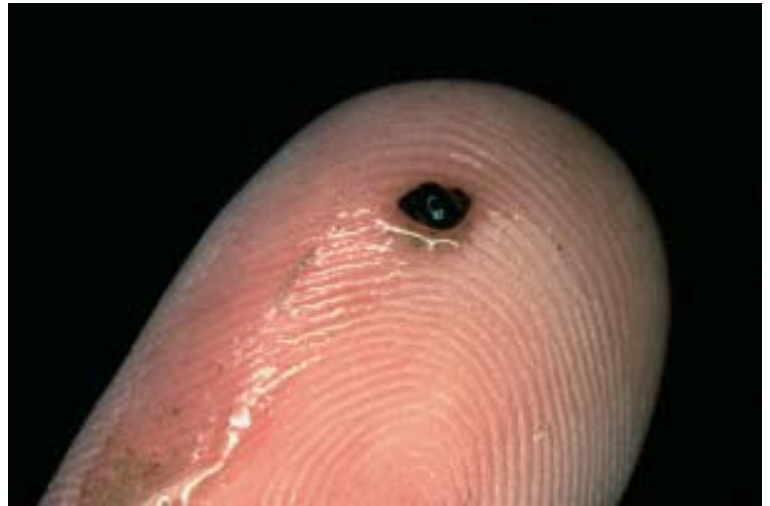
Please submit news or articles via email or disk by the 15th of the month prior to publication.

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

Biogeographic analysis was still frustrated by an inability to prepare robust phylogenetic hypotheses using morphological criteria - these tiny snails do not provide sufficient informative characters for

this purpose. In order to get around this roadblock I enlisted the collaboration of geneticists Peg Mulvey and Hsiu-Ping Liu (then at the Savannah River Ecology Laboratory) who could provide additional potentially useful data in the form of mitochondrial DNA sequences. In our first project we focused on the genus *Tryonia*, which lives in warm springs in the Southwest. We generated a robust phylogenetic hypothesis for members of the genus, and showed that snail biogeography was congruent with a new hypothesis for the early history of the of the lower Colorado River region based on sediment provenance, and with a composite nature of the Amargosa River basin in the Death Valley region based on tectonic models.

Based on these encouraging results Hsiu-Ping Liu (now at Southwest Missouri State University) and I were awarded funds from the Scholarly Studies Program for a similar study of the genus *Pyrgulopsis*, which is the most diverse member of the western aquatic fauna (>130 species). We will use resulting data to resolve the phylogeny of this large group and



Relative scale of Hydrobiid.

to assess congruence between mtDNA sequence data and morphological characters. We will also use our data to assess the role played by key geologic events in the Southwest (e.g., uplift of the Sierra Nevada, post-Miocene slip of western California along the San Andreas Fault Zone). We will also evaluate, more generally, whether snail biogeography shows a layering pattern congruent with the complex geology of the region, in which given areas have had different histories depending on the time slice considered.

Funding is also being sought to analyze, in a similar fashion, the mtDNA variation within a third large western genus, *Fluminicola*. Members of this genus live in large streams and rivers and thus can provide a view of drainage history distinct from the spring-dwelling taxa that we have studied so far. This work may be conducted in collaboration with geologists from Idaho State University who are studying the development of regional drainage by analysis of sediment zircon signatures.

CHAIRMAN'S OFFICE

Thoughts at the end of a year

Brian Kensley and I recently participated in a meeting in Crete (Brian has written about that elsewhere in this issue). In addition to the formal proceedings we got to see Knossos. I had no idea how large and technically advanced the palace was and how much was lost when the Minoan culture deteriorated. The place looked to me like a crossroads of ideas from all over the inner Mediterranean fused into a harmonious whole.

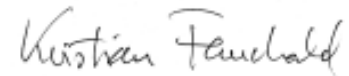
Which brings me to my second thought. I have come to the conclusion that innovation in science does not depend on hard work and diligence, but on becoming exposed to new ideas, preferably ideas devel-

oped for a very different purpose. We are certainly doing well, as a Department, considering the circumstances, but I am sure we could do better. We must be able to bring in new people, people coming to us with new and different ideas. We must invest in future research, spending for example more on competitive fellowships. We must also be able to add new and brilliant people to our permanent staff once we find them.

New ideas develop at crossroads in our science culture, not when we limit our reading only to narrowly focused journals. This kind of investment in the future is both institutional and personal and both aspects have to be pursued simultaneously. With-

out institutional encouragement most people will find little reason to risk their limited time and energy; and without that investment we court stagnation.

I hope the New Year will allow us to spend enough time and energy to renew our interest in our studies. If this happens, we will expand the high reputation of the Department as a world-class cite for the study of invertebrates.



COLLECTIONS

Manning Collection Proves Vital

Dr. Shane Ah Yong's¹ research with the Division of Crustacea will contribute significantly to our understanding of the phylogeny, biodiversity and distribution patterns of the stomatopods, the specialty of the late Raymond B. Manning. The research, supported by a Collection Improvement Fund Award, was only made possible through the large collections held and managed here. It is also noteworthy that most unidentified specimens studied were collected by Smithsonian expeditions and represent the only significant collections of Stomatopoda from these regions in any Museum worldwide.

For the five weeks from 3 September through 7 October 2000, Ah Yong, visiting researcher from the

Australian Museum in Sydney, studied NMNH collections of Stomatopod Crustacea. Working with Ray Manning's holding collection, and with the unidentified stomatopod collections, more than 2000 specimens were identified and curated. About a dozen undescribed Indo-West Pacific stomatopods (new species) were discovered, along with numerous range extensions and several rediscoveries of species not reported since their first description. Special emphasis was placed on unidentified collections from Guam, Samoa, Tonga, Fiji, Rotuma, and South Africa, the results of which will be published as major regional studies. Unidentified collections from Japan, Papua New Guinea, New Zealand, and French Polynesia were also studied, the results of which

will also be incorporated into major regional works. Each of these studies will ultimately provide baseline data for a larger scale analysis of the distribution patterns of the Indo-West Pacific Stomatopods. Additionally, the diversity of the species represented as well as the presence of rare species in the Smithsonian collections has provided important primary data for ongoing phylogenetic studies.

¹Dr. Shane Ah Yong is currently working at the Australian Museum with a 3 year postdoctoral fellowship awarded by the Australian Research Council. He received his Ph.D in 1999 from the University of New South Wales and has published over 20 papers on Stomatopods.

O U T R E A C H

Brazilian Congress on Crustaceans

The First Brazilian Congress on Crustaceans attended by Dr. Jan Reid (Also see Inside the Department) was a success with more than 300 scientists and postgraduate and undergraduate students participating. The program of the Congress included seminars by eminent Brazilian and foreign carcinologists and 263 projects, presented either as posters (250) or orally (13).

The Congress was sponsored by the Brazilian Society of Carcinology (Sociedade Brasileira de Carcinologia, SBC) which is an exclusively cultural-scientific non-profit non-governmental organization founded on 10 February 1982 during the IX Brazilian Congress of Zoology, held at the Institute of Biosciences of the Federal University of Rio Grande do Sul (UFRGS) in Porto Alegre, state of Rio Grande do Sul, Brazil.

The SBC aims to: a) unite all persons interested in the development of research on crustaceans; b) stimulate scientific investigation in the field of carcinology; c) promote studies of the crustacean fauna of Brazil; d) represent the Brazilian carcinological community in national and interna-

tional spheres; e) foster exchange of information on the progress of carcinological research in Brazil; and f) promote and carry out regional and national meetings.

In recent years, the SBC has begun to assume an international role. Since 1998 the Society has been a member of the International Crustacean Council, which unites other active carcinological societies of different countries and functions as the organizing agency for the International Crustacean Congresses. Brazil is a strong contender to host the VI International Crustacean Congress in 2005, in Rio de Janeiro. The next Congress is tentatively planned for the second half of 2002, and will again be held in the city of São Pedro

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L I B R A R Y

**INVERTEBRATE ZOOLOGY
LIBRARIES
NEW TITLES**

Dorresteijn, Adriaan W. C. and Wilfred Westheide, eds.

Reproductive Strategies and Developmental Patterns in Annelids. Developments in Hydrobiology 142. Dordrecht, The Netherlands: Kluwer Academic Publishers, 1999. QL391.A6R45 1999x Invz

Kennedy, W. J. et al. **Late Campanian (Cretaceous) Heteromorph Ammonites From the Western Interior of the United States.** Bulletin Number 251. New York: American Museum of Natural History, 2000. QH807.A5L38 2000 Moll

Nelson, Diane R., ed. **Proceedings of the Third International Symposium on the Tardigrada (August 3-6, 1980, Johnson City, Tennessee, USA).** Johnson City, TN: East Tennessee State University Press, 1982. QL447.5.I571980x Invz

NEW ONLINE SUBSCRIPTION

Molecular Biology and Evolution is now available via the web at www.molbioevol.org/

Innovative Partnership in Education

Mike Vecchione, Director of NMFS Systematics Lab and Research Associate in the Department, is part of a new initiative under the Cooperative Marine Education and Research (CMER) Program that will bring VIMS and Hampton University en-

hanced education in deep-sea biology and access to NOAA vessels for teaching and field work. A full-time CMER professor will teach classes at both institutions, mentor students and serve as liaison with NMFS and other Federal programs. Until the professorial

position is filled Vecchione is shuttling between Gloucester and Washington to initiate the program. CMER also provides annual funds for research in areas of specific interest to NMFS for three to four students each year.

O U T R E A C H

Integrating Systematics and Ecology in Support of Marine Biodiversity

Kristian Fauchald and Brian Kensley attended a workshop in Heraklion, at the Institute of Marine Biology of Crete (Greece), on 16-17 November. The workshop title "Integrating Systematics and Ecology in Support of Marine Biodiversity" was organized under the aegis of the Census of Marine Life (CoML), based in Washington, D.C., and partially funded by the Sloan Foundation. About 30 participants from Australia, The Azores, Brazil, Canada, Denmark, Germany, Greece, Japan, The Netherlands, New Zealand, South Africa, Sweden, U.K., and USA took part in two days of discussions. Ross Simons (NMNH) and Annelies Pierrot-Bults (University of Amsterdam), assisted by Wendy Wiswall and Carol Butler (NMNH) and staff of the CoML Secretariat organized the workshop in Crete.

The participants were charged with coming up with a proposal(s) for a major project that integrated scien-

tific questions asked by both ecologists and systematists, that would add to our knowledge of the biodiversity of the oceans. The proposal also had to have an element of exploration in it,



(L to R) Brian Kensley, Wendy Wiswall, Carol Butler, Kristian Fauchald, Ross Simons (Not shown) (photo by Anson Hines)

a strong database component, and had to take a regional approach. On the second day, the participants split into three groups, each coming up with a proposal for a project. The three proposals had several components in common, especially that of the geo-

graphic region chosen to be the center of investigation, namely the Indo-West Pacific region including South-East Asia and the Indonesian and Philippines archipelagoes. Another area of agreement addressed the question of whether the deep-sea fauna of the Indo-Malaysian region is, like the shallow-water fauna, a major center of high biodiversity. All were in agreement that the deep sea constitutes a major unexplored and vastly rich portion of the globe, deserving of greater investigative effort. A final proposal is being crafted, for submission to funding agencies.

While the rest of Europe seemed to be awash with rain and floods, a high pressure system over the Balkans gave us clear blue skies and warm days for the meeting. Dinner outdoors at night under fruiting lemon trees merely served to emphasize the insult of the cold weather when we stepped off the plane in New York.

Marine Station Announces Fellowship Competition

The Smithsonian Marine Station (SMS) in Fort Pierce announced its annual call for applications for Postdoctoral and Senior Postdoctoral Fellowships. Postdoctoral fellowships are offered to investigators who have

completed the doctoral degree fewer than seven years before the application deadline, and Senior fellowships are for persons more than seven years beyond the doctoral degree. SMS also offers twelve-week fellowships in ma-

rine sciences through its Link Foundation Graduate Fellowship program. Deadline for all three competitions is February 15, 2001. Visit SMS at www.sms.si.edu for more information.

O U T R E A C H

Sponges from Around the World and New Species from Belize Featured in ETI CD-ROMs

The Expert Center for Taxonomic Identification (ETI) in The Netherlands is working closely with two groups close to home. This non-governmental organization (NGO) is dedicated to developing and producing scientific and educational computer-aided information systems, to improving the general access to them, and to promoting the broad use of taxonomic and biodiversity knowledge worldwide. Among its network of 1,000 specialists worldwide are several in the Department and NMNH.

One of two centers of sponge biodiversity data accumulation is run by Dr. Klaus Ruetzler and Kate Smith (also see Department Highlights) with the other at the Zoological Museum of the University of Amsterdam, Directed by Dr. Rob van Soest. Contributing specialists send in and retrieve Por-Linnaeus data from these centers using File Transfer Protocol (FTP), that allows unlimited transfer of both texts and pictures. Por-Linnaeus refers to the use of Linnaeus II software developed by ETI and is a unique program for processing information on sponges and can be used by the educated non-specialist to become familiar with local sponge faunas or certain sponge groups.

The first result of the ETI sponge project is a CD-ROM authored by Rob van Soest and others which contains the descriptions, illustrations, synonyms, and literature references for all 337 shallow-water (down to 200m) sponges of the west coasts of Europe from the Arctic to the Portuguese coast. Two separate identification tools (traditional key and matrix key), distribution maps of all species, and introductory, glossary and literature modules make the CD a complete guide. Future CD-ROMs, sponsored by CCRE, will cover the mangrove sponges of Belize and ultimately the sponges of the Caribbean.

ETI will soon publish *Harmful Marine Dinoflagellates* by Maria A. Faust and Rose A. Gulledge. This monograph will be part of the World Biodiversity Database a CD-ROM series, an interactive, multimedia taxonomic reference guide developed containing species information and identification keys in the form of text, photographs and illustrations. This treatise represents a comprehensive, up-to-date multimedia dinoflagellate identification database featuring information on 68 species of harmful marine and associated species present in the world's oceans.

The database includes 42 toxin-producing species, (producing brevetoxins, saxitoxins and ciguatoxins), and seven nuisance species that produce 'red tides' often resulting in massive sea life mortalities. In addition, information is available on the morphology, reproduction, ecology, toxicity, and habitat and locality for each species. A comprehensive glossary of >120 related scientific terms, and an extensive literature reference collection containing about 500 citation is included. There are nearly 600 figures illustrating every species via SEM micrographs (60%), light and colored micrographs (20%) and line drawings (20%). The matrix-based identification key allows for multiple entry of characters to facilitate fast and effective diagnosis of a given species.

Faust did much of the field work for her part of the database at the Carrie Bow Cay Field Station supported by the CCRE awards program. Several new species from Belize are featured in the CD-ROM.

Roper Advises on Mote Marine Laboratory Exhibit

Clyde Roper took a break in his busy lecture schedule for October to consult on a new exhibit "Mollusk Hall" at the Mote Marine Lab in Sarasota, Florida. A giant squid specimen from New Zealand will be the centerpiece of the comprehensive ex-

hibit. Giant squids are hot topics for public audiences, and Roper's talks also now earn extended learning credits for students in Montgomery County, Kentucky. Roper uses the opportunity to address students—almost 1300 in the last month in Bermuda and

Kentucky—to impart knowledge on survival strategies used by marine organisms and to contrast coloration used by shallow-water animals with bioluminescence in deep-sea species.

R E S E A R C H

*Are You Still Here?**Chris Tudge, Research Associate*

My five-year anniversary in the Department of Invertebrate Zoology made me reflect on the events that led to my being a more “permanent” fixture here.

It all began with a yearlong SI Postdoctoral Fellowship beginning in 1995 researching the reproductive biology of hermit crabs and their relatives in Crustacea. The novelty of having a “spermatologist” in one corner of the visitor’s lab wore off though, and I became a familiar face around the corridors.

I remember how humble I felt when introduced to famous carcinologists such as Fenner Chace, Austin Williams, and Ray Manning, and how I relaxed into their friendly hospitality and benefitted daily from their accumulated knowledge and wisdom. That, combined with the incomparable collections, convenient transmission and scanning electron microscope facilities, darkroom, and IZ illustration lab, facilitated my meeting my major research goals and publishing some significant papers

I then undertook a three-year postdoc at the state museum of Victoria, Melbourne working with

Gary Poore, but I kept up the connections to SI in science and to romance —Karen, whom I met at POETS. After one intermediate trip back, I returned in 1998 to join Karen as her husband. Rafael Lemaitre



TEM micrograph of sperm cell of *Pylocheles (Bathychelès) sp.*

and Kristian Fauchald supported my receiving a Research Associates position, and American University accepted me as a temporary Assistant Professor in the Biology Department. It has been an easy transition to continue my research collaboration with the scientists in IZ and as before, the world-renowned Crustacea collection is providing a constant source of material for research

My research has expanded to some more socially acceptable research topics:

1. Sperm & spermatophore structure in the Anomura (Decapoda, Crustacea) - Prof. Barrie Jamieson and David Scheltinga (Department of Zoology and Entomology, University of Queensland, Australia).

2. Phylogenetic analysis of the mud shrimps, *Infraorder Thalassinidea*, using morphological and molecular characters - Rafael Lemaitre (NMNH), Gary Poore (Museum Victoria, Melbourne, Australia), and Cliff Cunningham (Zoology Department, Duke University, NC).

3. Structure and function of the male sexual tube in pagurid hermit crabs - Rafael Lemaitre and Pat

McLaughlin (Western Washington University, WA).

4. Aspects of snow crab (*Chionoecetes*) reproductive biology - Bernard Sainte-Marie (Fisheries and Oceans Canada, Quebec, Canada), Prof. Barrie Jamieson, and David Scheltinga.

5. Review of the reproductive biology of the South American endemic freshwater anomuran, *Aegla*.

continued on page 8

R E S E A R C H CONT.

Publications generated from my various periods of research here at SI

Tudge, C.C. 1997. Phylogeny of the Anomura (Decapoda, Crustacea): spermatozoa and spermatozoon morphological evidence. *Contributions to Zoology* 67(2): 125-141.

Tudge, C.C., Jamieson, B.G.M., Sandberg, L. and Erseus, C. 1998. Ultrastructure of the mature spermatozoon of the king crab *Lithodes maja* (Lithodidae, Anomura, Decapoda): further confirmation of a lithodid-pagurid relationship. *Invertebrate Biology* 117(1): 57-66.

Tudge, C.C. 1999. Ultrastructure of the spermatophore lateral ridge in hermit crabs (Decapoda, Anomura, Paguroidea). *Crustaceana* 72(1): 77-84.

Tudge, C.C. 1999. Spermatozoon morphology in the hermit crab families Paguridae and Parapaguridae (Paguroidea, Anomura, Decapoda). *Invertebrate Reproduction and Development* 35(3): 203-214.

Tudge, C.C., Scheltinga, D.M. and Jamieson, B.G.M. 1999. Spermatozoon ultrastructure in the Hippoidea (Anomura, Decapoda). *Journal of Submicroscopic Cytology and Pathology* 31(1): 1-13.

Jamieson, B.G.M. and Tudge, C.C. 2000. 1. Crustacea-Decapoda. In: B.G.M. Jamieson (ed.) *Progress in Male Gamete Ultrastructure and Phylogeny*, vol. 9, part c of K.G. & R.G. Adiyodi

(eds.) *Reproductive Biology of Invertebrates*. John Wiley & Sons, Chichester.

Tudge, C.C., Poore, G.C.B. and Lemaitre, R. 2000. Preliminary phylogenetic analysis of generic relationships within the Callianassidae and Ctenochelidae (Decapoda: Thalassinidea: Callianassoidea). *Journal of Crustacean Biology* 20(special number 2): 129-149.

Tudge, C.C., Scheltinga, D.M. and Jamieson, B.G.M. 2001. Spermatozoon morphology in the "symmetrical" hermit crab, *Pylocheles (Bathycheles)* sp. (Pylochelidae, Paguroidea, Anomura, Decapoda). *Zoosystema* 23(1) (in press).

V I S I T O R S

Alberto Linder and Maria Pia Miglietti, Duke University (10/16) Sponsor: **Steve Cairns**

Bella Galil, Israel Oceanographic & Limnological Research, Haifa, Israel

Lois Carrera-Parra, Ecosur, Chetumal, Mexico (10/23-10/27) Sponsor: **Kristian Fauchald**

Nikolai Korovchinsky Sveretson Institute of Animal Ecology and Evolution (11/01-11/30) Sponsor: **Frank Ferrari**

Yuri Kantor, Russian Academy of Sciences, Moscow (11/23-12/22) Sponsor: **Jerry**

Harasewych

Eugene Coan, Sierra Club, California (12/4-12-5) Sponsor: **Tyjuana Nickens**

Neil Cumberlidge, Northern Michigan University (12/9-12/16) Sponsor: **Richard von Sternberg**

Charles Messing, Nova Southeastern University Oceanographic Center, Dania, Florida (12/18-12/23) Sponsor: **Dave Pawson**

Chris Taylor, Illinois Natural History Survey (1/1-2/2) Sponsors: **Rafael Lemaitre and Karen Reed**

Alfredo Laguarda-Figueras (1/7-1/21) Sponsor: **Cynthia Ahearn**

Francisco Solis-Marin, Instituto Ciencias del Mar y Limnologia, UNAM, Lab de Ecologia de Equinodermos, Mexico City. (1/7-1/21) Sponsor: **Cynthia Ahearn**

Martin Collins, University of Aberdeen, Scotland (1/10-1/20) Sponsor: **Clyde Roper**

Patricia Jereb, Rome (1/?-1/?) 2 weeks

INSIDE THE DEPARTMENT

Highlights

Dennis O'Connor at Carrie Bow Cay

Under Secretary Dennis O'Connor visited our Carrie Bow marine field station on the barrier reef of Belize to get a first-hand impression of the newly re-built laboratory



Dennis O'Connor (3rd from left) at the Carrie Bow Marine Field Station, Belize. Others pictured (L to R): Dan Miller, Michael Lang, Dr. O'Connor, and Claudette Miller. (Photo K. Ruetzler)

facility, the rich habitat diversity of the barrier reef complex and the wide spectrum of research conducted by the Caribbean Coral Reef Ecosystems program.

Dr. O'Connor was accompanied by Michael Lang, the Scientific Diving Officer, and Jennifer Thorton, the new NMNH Diving Officer.

The NMNH Staff Day Program on November 14, 2000 featured three Department Staff. **Marsha Sitnik**, Senior Scientific Programs Coordinator, was recognized for 30 years of service, **Marilyn Schotte**, Museum Specialist, for 20 years, and **Rose Gulledege**, Museum Specialist, for 10 years.

Dr. **Clyde Roper** was made a Fellow National of the Explorers Club. The Club is a multidisciplinary society that links scientists and explorers. According to the Club literature, each member is an accomplished individual with at least one fascinating story to tell.

Klaus Ruetzler and Mike Carpenter hosted the visit and arranged field trips to important research sites such as the Carrie Bow Cay forereef and the Twin Cays mangrove community. Luckily, the weather cooperated during the brief visit and local fishermen provided a fresh sashimi-quality hog fish.

EPA visit to IZ

Twenty staff from EPA's National Center for Environmental Research visited in October. The visit, organized by Marsha Sitnik, was geared to spotlight research and collections. Greeted by **Kristian Fauchald**, the group was briefed on declining amphibians by W. Ronald Heyer, on squid research and exhibition by **Clyde Roper**, and then taken on a tour of the Worm Collection by Dr. Fauchald. The National Center manages the STAR Program (Science to Achieve Results) which funds competitive research grants and fellowships in environmental science and engineering.

Honors and Awards

Dr. **Mary Mickevich**, IZ Affiliated Scientist and head of MARBID, National Systematics Laboratory (NOAA/ NMFS), was chosen as the American Association for the Advancement of Science's Section Secretary for a four-year term. As Section Secretary, Dr. Mickevich will have responsibility for the AAAS Fellow nomination and review process carried out by the Steering Group of the Section Committee; coordination of the Section Committee review of session proposals and sponsored symposia for the Annual Meeting; and arrangements for the business meeting during that meeting.

IZ at Conference on Partnership Opportunities for Federally Associated Collections

Cheryl Bright, Bill Moser and Karen Reed participated in the Third Conference on Partnership Opportunities for Federally Associated Collections on November 14, 2000. The conference, held in Austin, Texas, discussed collection profiling at the National Museum of Natural History in a special afternoon session "Profiling Collections: Leveraging Real Collection Data." In a Powerpoint-presentation, "Practical Aspects of Collection Profiling in the Department of Invertebrate Zoology, NMNH", Cheryl Bright discussed profiling activities at IZ. Sally Shelton, NMNH Collections Officer, then described profiling activities throughout the entire museum. In the afternoon session, two posters: "Collection Profiling- The Process" and "Collection Profiling- The Results" were presented by Bill Moser and Karen Reed, who also demonstrated the Access and Excel IZ profiling databases.

At the First Brazilian Congress on Crustaceans sponsored by the Brazilian Society of Carcinology (Sociedade Brasileira de Carcinologia, SBC and held at Sao Pedro, Brazil, 16-20 October 2000, **Jan Reid** was honored ("homenageada") for her accomplishments and service to carcinological research in Brazil. For more information on the SBC see article this issue.

ANNOUNCEMENTS

Departures and Arrivals

Kate Smith has moved to Champagne-Urbana, Illinois after 15 years as Research Assistant in Klaus Ruetzler's laboratory aiding sponge research and providing support for the CCRE program. Kate enjoyed her experience in Ruetzler's lab where she was trained and certified as a SCUBA diver and participated in many research projects and international meetings.

Kate joined the Natural History Museum Mammals Division Inventory Staff in 1980, worked in Paleobiology, and in 1982 moved to IZ as part of the Bureau of Land Management (BLM) project, now Minerals Management Service, under Cheryl Bright.

Kate's special love of animals will be well-matched to her and husband Ron McGinley's (Department of Entomology) new 5-acre rural farm.

Michelle Nestlerode is working with Klaus Ruetzler assisting with sponge research and CCRE. She started at NMNH in the summer of 1998 with the Research Training Program (RTP) and a project with the BLM. A recent graduate of St. Mary's College, Maryland, she has worked summers and winter break ever since and hopes to make a career in biology. She is especially interested in corals.

Steve Cairns
Mike Carpenter
Frank Ferrari
Rafael Lemaitre
Karen Reed
Juel Rembert
Marsha Sitnik
Yolanda Villacampa

November, December
&
January
Happy Birthday!

PUBLICATIONS

Jamieson, B.G.M. and **Tudge, C.C.** 2000. 1. Crustacea-Decapoda. In: B.G.M. Jamieson (ed.) Progress in Male Gamete Ultrastructure and Phylogeny, vol. 9, part c of K.G. & R.G. Adiyodi (eds.) Reproductive Biology of Invertebrates. John Wiley & Sons, Chichester.

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Kensley, Brian and **Marilyn Schotte.** 2000. New species and records of anthuridean isopod crustaceans from the Indian Ocean. Journal of Natural History 34: 2057-2121.

Reid, J.W. & I.M. Mirabdullayev. 2000. First record from Panama of the freshwater copepod *Yansacyclops ferrarii* (Cyclopoida: Cyclopidae). Nauplius 7: 187-189.

Reid, J.W. 2000. Copepods and bathynellaceans or, "You study what?" ATBI Quarterly, Great Smoky Mountains National Park, Autumn Newsletter 2000: 4-5.



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