

## Tupper 4pm seminar

Tuesday, August 21, 4pm seminar speaker will be George Angehr, STRI Exhibitions of the Panama Museum of Biodiversity

## Paleo-Talk

Wednesday, August 22 at 4pm Paleo-talk speaker will be Amalia Herrera, STRI

**Ongoing results on the phylogeny of recent Cupuladriidae from Panama**

## Bambi seminar

For information on the next Bambi, please consult your e-mails. Remember to read the STRI announcements!

## Arriving next week

Steve Vollmer, Northeastern University, to study hybridization, introgression and genetic view of coral species, in Gamboa and Bocas.

Alejandra Jaramillo, University of Missouri, to carry out phylogenetic studies of the "giant" genus *Piper*, a model to understand plant diversification in the Neotropics, at Tupper.

Megan Eckles and Michelle Renner, University of California in San Diego, to study the

## Departures

Eldredge Bermingham to Argentina to attend the Patagonia Biodiversity Project Annual Meeting and present a talk "Update on analytical approaches in comparative Phylogeography.

Tania Quiel, to Washington DC, on training at SI.



Smithsonian Tropical Research Institute, Panamá

[www.stri.org](http://www.stri.org)

August 17, 2007

## STRI signs with ICGES

Cardiologist Jorge Motta Borrell (left), director of the Instituto Conmemorativo Gorgas de Estudios de la Salud [Gorgas Commemorative Institute for Health Studies] (ICGES) and STRI director Ira Rubinoff (SI acting undersecretary for Science), signed a memorandum of understanding to promote the collaboration between both institutes to identify and further efforts in their respective areas of expertise.

“For the development of joint efforts, both parties will prepare specific agreements aimed at, among other things, the study of tropical disease and its evolution, as well as the behavior and ecology of organisms carrying and transmitting disease to human beings.”

The memorandum includes details about intellectual rights, the use of their names and logos, and proper publicity of their achievements.

The agreement was signed on Thursday, August 16, 2007 for an indefinite period.

STRI and the Gorgas Institute have shared a long history of collaboration.



El cardiólogo Jorge Motta Borrell (izquierda), director del Instituto Conmemorativo Gorgas para Estudios de la Salud (ICGES) y el director de STRI Ira Rubinoff (subsecretario encargado para Ciencias del Smithsonian), firmaron un convenio para promover la colaboración entre ambos institutos, para identificar y adelantar esfuerzos en sus respectivas áreas de competencia.

“Para el desarrollo de estos esfuerzos conjuntos las partes celebrarán acuerdos específicos destinados, entre otros, al estudio de las enfermedades tropicales y su evolución, así como el comportamiento y la ecología de los organismos que portan y transmiten enfermedades a los seres humanos.

El convenio también incluye detalles sobre los derechos intelectuales, el uso de sus nombres y logos y la publicidad apropiada sobre sus logros.

El convenio se firmó el jueves 16 de agosto, de 2007 y estará vigente durante un tiempo indefinido.

STRI y el Instituto Gorgas han compartido una larga historia de colaboración.

### Another thought about Adela Gómez (1918-2007)

“When those guys (the bosses and scientists) would mess up you could go to her and she would figure out what to do about it.”

*Mary Jane West-Eberhard*

## Congratulations!

To STR intern Mauricio Gutierrez, CTPA, who won the "Ricardo Lleras Codazzi Award" to the best Colombian thesis given by the Colombian Society of Geology. It was submitted to the Geological Engineering Department of UPTC. First prize for excellency!

## New publications

Dyer, L.A., Singer, M.S., Lill, J.T., Stireman, J.O., Gentry, G.L., Marquis, R.J., Ricklefs, Robert E., Greeney, H.F., Wagner, D.L., Morais, H.C., Diniz, I.R., Kursar, Thomas A., and Coley, Phyllis D. 2007. "Host specificity of Lepidoptera in tropical and temperate forests." *Nature* 448(7154): 696-699.

Ferrer, Astrid, Sivichai, Somsak, and Shearer, Carol A. 2007. "*Megalohypha*, a new genus in the Jahnulales from aquatic habitats in the tropics." *Mycologia* 99(3): 456-460.

Turner, Benjamin L., Newman, Susan, Cheesman, Alexander W., and Ramesh, Reddy, K. 2007. "Sample pretreatment and phosphorus speciation in wetland soils." *Soil and Water Management Conservation* 71(5): 1538-1546.

Wulff, Janie L. 2007. "Mutualismos entre especies de esponjas de los arrecifes de coral del Caribe." In Leigh, Jr., Egbert Giles, Herre, Edward Allen, Jackson, Jeremy B.C., and Santos-Granero, Fernando (Eds.) *Ecología y evolución en los trópicos*: 238-253. Panama: Editora Nova Art.

**Safety number  
212-8211**

## 11th Meeting of International Society of Invertebrate Reproduction and Development

The International Society of Invertebrate Reproduction and Development (ISIRD) held its 11<sup>th</sup> Meeting in Panama, at the Tupper Center, from August 6 through August 9. The organizer was STRI staff scientist Rachel Collin. The meeting gathered about a hundred specialists from 25 countries.

Panama's SENACYT and the NSF provided the necessary funds to make this meeting possible. The low cost of attendance and supplementary support for many symposium speakers would not have been possible without the support of STRI.

Stanley Heckadon-Moreno, director of the Office of Communications and Public Programs offered the welcoming words to the participants. This year's meeting was centered around three symposia with cutting edge talks: The Environmental Signals Controlling Invertebrate Reproduction and the Impacts of Pollution, organized and chaired by Gordon Watson, Gary Caldwell, and Matt Bentley (in the photo), who presided at the meeting; Mechanisms of Sexual Selection in Invertebrates, chaired by Chris Tudge; and Parasite Manipulation of Invertebrate

Reproduction and Development, organized and chaired by Janet Leonard and John Christy.

The participants had the opportunity to enjoy field trips to BCI, PNM, Panama Canal Visitor's Center at Miraflores, Embera Drua and Punta Culebra Nature Center.

La Asociación Internacional de Desarrollo y Reproducción de Invertebrados (ISIRD, por sus siglas en inglés) celebraron su undécimo congreso en Panamá, en el Centro Tupper, del 6 al 9 de agosto. Fue organizado por la investigadora de STRI, Rachel Collin. El congreso reunió cerca de 100 especialistas de 25 países.

SENACYT de Panamá y la NSF suministraron los fondos necesarios para llevar a cabo esta reunión. El apoyo suplementario de STRI y los bajos precios de participación hicieron posible que muchos conferencistas pudieran participar.

Stanley Heckadon-Moreno, director de la Oficina de Comunicaciones y Programas Públicos ofreció palabras de



bienvenida a los participantes. La reunión de este año se centró alrededor de tres simposios con conferencias con tecnología de punta: Impactos de la Contaminación y Señales Ambientales que Controlan la Reproducción de los Invertebrados, organizada y dirigida por Gordon Watson, Gary Caldwell y Matt Bentley (en la foto), quien presidió el congreso; Mecanismos de Selección Sexual en Invertebrados, dirigida por Chris Tudge; y Manipulación por parte de Parásitos en Reproducción y Desarrollo de Invertebrados, dirigida por Janet Leonard y John Christy.

Los participantes tuvieron la oportunidad de disfrutar viajes al campo a BCI, PNM, el Centro de Visitantes de Miraflores del Canal de Panamá, Embera Drua y el Centro Natural de Punta Culebra.

## Nature: "Insects everywhere"

"Insects are a major force in most ecosystems, yet in studies of biodiversity they often receive less attention than birds, mammals and plants. Two papers this week redress the balance. Novotny et al[1]. studied some 500 species of

lepidopteran caterpillars, beetles and fruit flies across 75,000 km<sup>2</sup> of rain forest in Papua New Guinea. They found that most species of herbivorous insects were widely distributed. Species richness was high, as expected in the tropics, but the

species found did not alter much even over hundreds of kilometers. Dyer *et al.* reached rather different conclusions from their work on hundreds of thousands of host-specificity feeding records for butterfly and moth caterpillars from



## More publications

Wulff, Janie L. 2007. "Desarrollo y renovación de los arrecifes de coral mediante la intervención de las esponjas." In Leigh, Jr., Egbert Giles, Herre, Edward Allen, Jackson, Jeremy B.C., and Santos-Granero, Fernando (Eds.) *Ecología y evolución en los trópicos*: 318-327. Panama: Editora Nova Art.

Zotz, Gerhard, Tyree, Melvin T., and Cochard, Herve. 2007. "Arquitectura hidráulica, relaciones hídricas y vulnerabilidad a la cavitación." In Leigh, Jr., Egbert Giles, Herre, Edward Allen, Jackson, Jeremy B.C., and Santos-Granero, Fernando (Eds.) *Ecología y evolución en los trópicos*: 67-76. Panama: Editora Nova Art.

Zamzow, Jill P. 2007. "Ultraviolet-absorbing compounds in the mucus of shallow-dwelling tropical reef fishes correlate with environmental water clarity." *Marine Ecology Progress Series* 343: 263-271.

## STRI in the news

"In spiders, at least, brain size doesn't appear to affect behavior" by Henry Fountain. 2007. *New York Times* July 24. Section F, page 3.

"Amazon deforestation rate falls to lowest on record" by Rhett A. Butler. 2007. *Mongabay.com*. August 10.

"HSBC volunteers on Earthwatch trip". 2007. The Peninsula: August 2.

"Audrey Smith keeps her cool in the tropics", by Amy Rogers Nazarov 2007. *The Torch*. July.

areas ranging from Canada to Brazil. They found that the average number of tree species on which an insect species feeds was fewer in the tropics than in temperate parts of the New World, a confirmation of the latitudinal gradient in ecological specialization much discussed by biologists since the time of Darwin and Wallace. With apparently contradictory results such as these two reports, though, the discussion may run and run."

Editor's Summary, *Nature*, 9 August 2007

The article by Novotny and collaborators produced two more articles in the same issue

of *Nature*: "Host specificity of Lepidoptera in tropical and temperate forests" by L.A. Dyer from Tulane University and collaborators including STRI research

associates Robert E. Ricklefs, Tom Kursar and Lissie Coley, and "Biodiversity: World of insects" by Nigel E. Stork. *Nature's* editor in his summary of Stork's article in the "News and Views" section of this



journal writes: "When it comes to understanding patterns of biodiversity, ours is a little-known planet. Large-scale sampling projects, as carried out in two investigations of insect diversity, show a way forward."

[1] Novotny, Vojtech, Miller, Scott E., Hulcr, Jiri, Drew, Richard A. I., Basset, Yves, Janda, Milan, Setliff, Gregory P., Darrow, Karolyn, Stewart, Alan J. A., Auga, John, Isua, Brus, Molem, Kenneth, Manumbor, Markus, Tamtia, Elvis, Mogia, Martin, and Weiblen, George D. 2007. "Low beta diversity of herbivorous insects in tropical forests." *Nature* 448(7154): 692-695.

## Training in Protocol

STRI's Audrey Marie Smith, STRI's Special Events coordinator, received a certificate as a graduate of Protocol Officer Training at the Ritz-Carlton, in McLean, Virginia by The Protocol School of Washington. This is the leader in protocol and etiquette services and is the first company to provide professional training and certification in protocol and etiquette. This is a "comprehensive training designed to broaden participants' understanding of functional business, government, and international protocol, as well as the expertise to confidently and appropriately apply protocol formulas in the most complex or critical situations.

Graduates obtain the skills to facilitate events for people of different cultures to find common purpose, engage strategic and sensitive issues, and create relationships and memories for a lifetime."



Audrey Marie Smith, coordinadora de Eventos Especiales de STRI, recibió un certificado al graduarse de un curso de entrenamiento como directora de Protocolo en el Ritz-Carlton, en McLean Virginia, por la Escuela de Protocolo de Washington. Esta escuela es la líder en protocolo y servicios de etiqueta y es la primera compañía que ofrece entrenamiento profesional y una certificación en protocolo y etiqueta. Este es un "entrenamiento comprensivo diseñado para ampliar los conocimientos de los

participantes en negocios funcionales, gobierno y protocolo internacional, así como una especialización en fórmulas para aplicar el protocolo de forma confidencial y apropiada en situaciones complejas y críticas.

Los graduados obtienen las habilidades de facilitar eventos para personas de diferentes culturas para encontrar un propósito en común, asumir asuntos estratégicos y sensitivos, y crear relaciones y experiencias para toda una vida."



# Hydrologic variation in the Panamanian Pacific

Story: Luis D' Croz

Edited by M Alvarado

ML Calderón & B King

Photo by MA Guerra

Strong winds from the Caribbean cross the isthmus through low mountains in central Panama during the dry season pushing offshore the warm surface water in the Gulf of Panama. Sea level drops and deep, cold and nutrient rich waters rise to the surface. This is known as "upwelling."

This phenomenon re-fertilizes the Gulf, and phytoplankton grows. Coastal areas with upwelling produce 20% of all fisheries in the world, even though they represent only 1% of the oceans' surface.

In the Gulf of Chiriquí, the high mountains block the winds, and the ocean surface stays warm all year.

STRI staff scientist Luis D' Croz, also professor at the University of Panama along with postdoctoral fellow Aaron O'Dea, studied the dynamics of nutrients and phytoplankton in both regions.

The found that the variability of nutrients is principally related to the depth of the thermocline, a temperature transition zone between deep cold waters and warm surface waters.

During the upwelling in the Gulf of Panama, the thermocline is near the surface. In the Gulf of Chiriquí, the

thermocline is deeper, although it may occasionally rise, allowing nutrients to come closer to the surface.

Los fuertes vientos del Mar Caribe en la estación seca cruzan las montañas bajas del centro del istmo y siguen hacia las cálidas aguas del Golfo de Panamá. El nivel del mar disminuye y ascienden aguas profundas, frías y ricas en nutrientes. Esto es conocido como "afloramiento".

Este fenómeno re-fertiliza al Golfo, y el fitoplancton puede crecer. Las áreas costeras con afloramiento producen el 20% de la pesca mundial, aunque representan sólo el 1% de la superficie de todos los océanos.

En el Golfo de Chiriquí las montañas altas bloquean el paso de los vientos y la superficie del mar se mantiene cálida todo el año.

Luis D' Croz, científico de STRI y profesor de la Universidad de Panamá y el becario post-doctoral Aaron O'Dea, estudiaron la dinámica de los nutrientes y el fitoplancton en ambas regiones.

Encontraron que la variabilidad de los nutrientes está principalmente relacionada a la profundidad de la termoclina, una zona de transición de temperatura entre aguas profundas frías y aguas superficiales

cálidas.

Durante el afloramiento en el Golfo de Panamá, la termoclina está cerca de la superficie. En el Golfo de Chiriquí la termoclina es más profunda, aunque ocasionalmente puede ascender permitiendo a los nutrientes llegar cerca de la superficie.

