

## Tupper 4pm seminar

Tuesday, February 20 is Carnival Day, and a holiday for STRI. No 4pm seminar is scheduled for this week.

## Bambi seminar

Please consult your GroupWise for information on the next Bambi.

## Arriving next week

Inga Geipel and Kristin Uebernickel, University of Ulm, to study echolocation and foraging behavior of neotropical bats with Elisabeth Kalko, on BCI.

Christoph Meyer, University of Florida, to continue comparative community studies of bats with Elisabeth Kalko, on BCI.

James Wheeler, Harvard University and Steven Voelker, Oregon State University, to study comparative hydraulic architecture; an analysis of transport efficiency and mechanical constraints, on BCI.

Robert Prezant and Harry Lagerman, Montclair State University, to join Jackie Willis in The Rainforest Connection project, on BCI.

Alexander Eaton-Mordas, University of Arizona, to study odor recognition, badge awareness, and male display behavior in orchid bees: Untangling the information content in a complex signal, in Gamboa.

Tobias Pieper, University of Oldenburg, Germany, to join "Proyecto Gavilán" (Inventory of flora and fauna of areas affected by hydroelectric projects), at Tupper.



Smithsonian Tropical Research Institute, Panamá

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

February 16, 2007

## HSBC grants STRI's CTFS \$8 million for research on climate change

STRI received an \$8 million grant from HSBC to fund the world's largest field experiment on the long-term effects of global change on forest dynamics. A new Global Earth Observatory system will compare climate change and forest carbon data from 17 countries around the world.

The HSBC grant will enable STRI to expand dramatically the research capability of its Center for Tropical Forest Science—the largest and longest-running tropical forest research network in the world.

"With this generous grant from HSBC, Smithsonian scientists will put key scientific data in the hands of decision makers responsible for global carbon policy and the water management of the Panama Canal," said Ira Rubinoff, director of STRI (left, in the photo above).

HSBC Group chairman, Stephen Green (at right in the photo), announced the grant—the largest ever corporate donation to STRI—during his first visit to



Photo: Christian Ziegler

Panama. "We know the success of our business in the long term depends on a stable environment. We believe that by supporting this research we will more fully understand the risks and business opportunities presented by climate change, and the Smithsonian Institution is the best-equipped and experienced organization of this kind to help us understand how our global environment is changing."

"This project with the Center for Tropical Forest Science is critical to Panama," said Joseph Salterio, chief executive officer of HSBC Bank (Panama). "The Canal is the lifeblood of the country and we know this economic engine could be threatened by changing rainfall patterns. The Canal supports a large amount of international trade and therefore is vital to international commerce."

STRI recibió \$8 millones del HSBC para financiar el experimento de campo más grande del mundo sobre los efectos a largo plazo del cambio global sobre dinámica de bosques. Un nuevo sistema de Observatorios Globales de la Tierra comparará el cambio climático y datos sobre carbono en bosques en 17 países alrededor del mundo.

El fondo del HSBC permitirá a STRI expandir dramáticamente la capacidad de investigación de su Centro de Ciencias Forestales del Trópico —la red de investigaciones de bosques tropicales más extenso y de mayor duración del mundo.

"Con esta generosa donación del HSBC, los científicos del Smithsonian pondrán información científica clave en manos de los tomadores de decisiones responsables por las

## Departures

Stuart Davies to London, Cameroon Congo, to meet with HSBC officials and CTFPS personnel.

Eldredge Bermingham to Washington DC, on official business at SI.

## New publications

Avalos, Gerardo, Mulkey, Stephen S., Kitajima, Kaoru, and Wright, S. Joseph. 2007. "Colonization strategies of two liana species in a tropical dry forest canopy." *Biotropica* Online.

Bernal, Ximena E., Page, Rachel A., Rand, A. Stanley, and Ryan, Michael J. 2007. "Cues for eavesdroppers: Do frog calls indicate prey density and quality?" *American Naturalist* 169(3): 409-415.

Bush, Mark B., and Weng, Chengyu. 2007. "Introducing a new (freeware) tool for palynology." *Journal of Biogeography* 34(3): 377-380.

Eberhard, William G. 2007. "Stabilimenta of *Philoponella vicina* (Araneae: Uloboridae) and *Gasteracantha cancriformis* (Araneae: Araneidae): Evidence against a prey attractant function." *Biotropica* 39(2): 216-220.

Griscom, Heather P., Kalko, Elisabeth K.V., and Ashton, Mark S. 2007. "Frugivory by small vertebrates within a deforested, dry tropical region of Central America." *Biotropica* 39(2): 278-282.

Lapolla, John S., Sulman, Ted Sosa-Calvo, Jeffrey and Schultz, Ted R. 2007. "Leaf litter ant diversity in Guyana." *Biodiversity and Conservation* 16(2): 491-510.

políticas de carbono global y el manejo de agua del Canal de Panamá" dijo Ira Rubínoff, director de STRI (izquierda en la foto de la primera página). Stephen Green (derecha), director del Grupo HSBC, anunció la donación—la mayor donación corporativa que ha recibido STRI— durante su primera visita a Panamá. "Sabemos que el éxito de nuestro negocio a largo plazo

depende de un ambiente estable. Creemos que al apoyar esta investigación comprenderemos mejor los riesgos y las oportunidades de negocios que presentan el cambio climático, y el Smithsonian es la organización mejor equipada y experimentada para ayudarnos a comprender cómo nuestro ambiente global está cambiando." "Este proyecto con el Centro de Ciencias Forestales

del Trópico es crítico para Panamá" comentó Joseph Salterio, director ejecutivo del Banco HSBC de Panamá. "El Canal es la vida de este país y sabemos que esta maquinaria económica puede ser amenazada por los cambios en los patrones de lluvia. El Canal apoya una gran cantidad de carga internacional, por lo que es vital para el comercio internacional."

## Chili peppers: cultivated and traded 6000 years ago

When Europeans arrived in the Americas, chili peppers were among the most widespread of the plants domesticated in the New World. However, the chronology and precise geography of their origins and early dispersals had been very poorly understood. Tropical environments, where many chili varieties were first domesticated and then incorporated into prehistoric farming systems, degrade most organic archaeological remains, washing away and decomposing all but the most durable evidence of ancient human activities.

A group of Smithsonian researchers led by Linda Perry from the National Museum of Natural History and colleagues that includes STRI's Irene Holst, Dolores Piperno and Richard Cooke (see the complete citation in page 2 under "More publications") report that across the Americas, chili peppers (*Capsicum* species) were cultivated and traded as early as 6000 years ago—predating the invention of pottery in some areas of the Americas. The researchers analyzed starch grains to trace the history of chili peppers in the Americas. Their findings contribute significantly to the



Photo: Linda Perry

current understanding of ancient agricultural practices in the Americas.

The report is published in today's issue of the journal *Science* 315: 986-988. The article was distributed by Neal Smith. It can also be obtained from: [calderom@si.edu](mailto:calderom@si.edu)

Quando los europeos llegaron a las Américas, los ajíes se encontraban entre las plantas domésticas más distribuidas del Nuevo Mundo. Sin embargo, la cronología y geografía precisa de sus orígenes y primera dispersión no se conocían bien. Los ambientes tropicales, donde las variaciones de ajíes se domesticaron primero y luego se incorporaron a sistemas prehistóricos de agricultura, degradan la mayoría de los residuos arqueológicos, lavando y descomponiendo casi todas las evidencias de las primeras actividades humanas, con excepción de la más duradera.

Un grupo de investigadores del Smithsonian liderados por Linda Perry del Museo Nacional de Historia Natural y colegas que incluyen a Irene Holst, Dolores Piperno y Richard Cooke, de STRI, informan que los ajíes (especies de *Capsicum*) se cultivaron e intercambiaron a través de las Américas desde hace cerca de 6000 años atrás—antes de que se inventara la cerámica en ciertas áreas del continente. Sus descubrimientos contribuyen de manera significativa al conocimiento actual de las prácticas de agricultura antigua en las Américas.

El informe ha sido publicado en la copia de hoy de la revista *Science* (315: 986-988). El artículo fue distribuido por Neal Smith. Puede pedirlo a: [calderom@si.edu](mailto:calderom@si.edu)

## More publications

Perry, L, Dickau, R., Zarrillo, S., Holst, I., Pearsall, D.M., Piperno, D.R., Berman, M.J., Cooke, R.G., Rademaker, K., Ranere, A.J., Raymond, J.S., Sandweiss, D.H., Scaramelli, F., Tarble, K., and Zeidler, J.A. 2007. "Starch fossils and the domestication and dispersal of chili peppers (*Capsicum* spp. L.) in the Americas." *Science* 315(5814): 986-988.

Tepe, Eric J., Vincent, Michael a., and Watson, Linda E. 2007. "The importance of petiole structure on inhabitability by ants in *Piper* sect. *Macrostachys* (Piperaceae)." *Botanical Journal of the Linnean Society* 153(2): 181-191.

## STRI in the news

"Amor por la ciencia" by Aleida Samaneigo C. 2007. *Panamá América* Jan 29: A12.

"Charla sobre crecimiento poblacional." *La Prensa* Feb 9: 9B.

"La mosca gigantesca de la madera" by Tamara Del Moral. 2007. *La Prensa* Feb 10: 11A.

"HSBC dona 8 millones al Smithsonian" by Víctor D. Torres. *La Prensa* Feb 13: 29A.

"La meca de la biología" by Rolando de la Guardia. 2007. *La Prensa* Feb 13: 2A.

"Smithsonian grant to expand climate change research." 2007. *Associated Press*: Feb 12.

"HSBC gives Smithsonian \$8 million to study global warming impact on forests" by Rhett A. Butler. 2007. *Mongabay.com*: February 12.

"Taking stock of trees, by Elizabeth Pennisi. 2007. *ScienceNOW Daily News*: Feb 12.

## Ehrlich gives seminar at STRI

Paul R. Ehrlich, Bing Professor of Population Studies in the Department of Biological Sciences at Stanford University and co-founder of the field of coevolution, offered the seminar "One with Nineveh: The Human Prospect in 2007" on Tuesday, February 13, at the Tupper Center Auditorium. Paul and Anne Ehrlich authored *One with Nineveh: Politics, consumption, and the human future* (2004). His best known book so far is *The Population Bomb*, published in 1968.

Ehrlich is a renowned entomologist specializing in Lepidoptera (butterflies). He has also been a pioneer in alerting the public to the problems of overpopulation, and in raising issues of population, resources, and the environment as matters of public policy. He is a fellow of the AAAS, the American Academy of Arts and Sciences, and the American Philosophical Society, and a member of the National Academy of Sciences. Ehrlich has several honorary degrees and many international prizes including the Crafoord Prize of the Royal Swedish Academy of Sciences (given in lieu of a Nobel Prize in areas where the Nobel is not given).

Ehrlich summarized the causes of the environmental disasters we are facing these days and promoted the creation of an international panel to assess human behavior.

Questioned on effective ways to convey scientific information to the public,

Ehrlich commented that in the past, scientists were not considered successful before they published their findings. Today, he added, "scientists can be considered a success once they publish their findings and translate them to the general public."

The seminar was attended by a packed audience from the STRI community, members of the media, and the general public.

Paul R. Ehrlich, profesor Bing en Estudios de Poblaciones del Departamento de Ciencias Biológicas en la Universidad de Stanford y co-fundador del campo de la coevolución, ofreció el seminario "One with Nineveh: The Human Prospect in 2007" el martes, 13 de febrero, en el Centro Tupper. Ehrlich y su esposa Anne son los autores de *One with Nineveh: Politics, consumption, and the human future* (2004). Su libro más conocido hasta el momento es *The Population Bomb*, publicado en 1968.

Ehrlich es un reconocido entomólogo especializado en Lepidoptera (mariposas). Ha sido pionero al alertar al público sobre los problemas de la sobre-población, y en argumentar asuntos de población, recursos y el ambiente referentes a políticas públicas. Es "fellow" de la AAAS, la Academia de los EU de Artes y Ciencias, la Sociedad Filosófica de los EU, y miembro de la Academia de Ciencias de los EU. Ehrlich tiene varios doctorados



honorarios y muchos premios internacionales incluyendo el Premio Crafoord de la Academia Real Sueca para las Ciencias (que se otorga en vez del Premio Nobel en especialidades para las cuales no se otorga el Nobel).

Ehrlich resumió las causas de los desastres ambientales que enfrentamos hoy día y promovió la creación de un panel internacional para evaluar el comportamiento humano.

Cuestionado sobre cómo transmitir efectivamente información científica al público, Ehrlich comentó que en el pasado, los científicos no eran considerados exitosos antes de que publicaran sus descubrimientos. Hoy día, agregó "los científicos se consideran exitosos una vez publiquen sus resultados y los hagan llegar al público.

Al seminario asistieron miembros de la comunidad de STRI, los medios y público en general.

## Butterfly research intern position

The *Heliconius* research project seeks intern to work as assistant for one year effective immediately. \$800 per month. More about the project at: [www.heliconius.org](http://www.heliconius.org).

Responsibilities: maintain host plants and butterfly stocks,

dissect tissue for genetic studies, collect local butterflies and assist visiting researchers. Intern should be interested in butterfly biology. Experience rearing butterflies would be an advantage. This position may be suitable for a Masters student whose research project

could be carried out parallel with main responsibilities.

Interested please contact Chris Jiggins ([cj107@cam.ac.uk](mailto:cj107@cam.ac.uk)) or Owen McMillan ([womcmill@ncsu.edu](mailto:womcmill@ncsu.edu)). Applications in English or Spanish.

# Eternal, ethereal jellyfish: Some may be more theatrical than threatening

Story:

Maria Pia Miglietta

Edited by: M Alvarado  
& ML Calderon

Photo: MA Guerra

Like corals and sea anemones, medusae (jellyfish) belong to the phylum Cnidaria.

Their diversity of forms and sizes is amazing and the delicacy of their appearance contrasts with the potential danger some of them represent.

Not all medusae sting. Some of them, like *Aurelia* in the photo, can be touched without problem. On the other hand, box-jellies can seriously harm those who enter in contact with their tentacles.

Maria Pia Miglietta, Marine Science Network postdoctoral fellow at Naos—studies Hydrozoa (a class of the phylum Cnidaria), small, inconspicuous medusae, but very abundant. They are seasonally released by polyp colonies.

With the aid of extensive fieldwork, molecular tools and laboratory rearing, Miglietta investigates different aspects of tropical hydrozoan biology, ranging from the environmental cues that trigger medusae production to how their life cycle changes under different ocean productivity regimes across the Isthmus of Panama.

The amazing variety of their life cycles represents an infinite source of questions and can help understand underlying themes and shed some light on trends in invertebrate evolution.

Al igual que corales y anémonas, las medusas (aguamalas) pertenecen al fílum Cnidaria.

Su diversidad de formas y tamaños es sorprendente y la delicadeza de su apariencia contrasta con el peligro que algunas de ellas representan.

No todas las medusas queman. Algunas, como *Aurelia* en la foto, se pueden tocar sin problemas. Por otro lado, las aguamalas bolsa causan daños severos a quienes entran en contacto con sus tentáculos.

Maria Pia Miglietta, becaria postdoctoral de la Red de Ciencias Marinas en Naos—estudia las hidrozooas, (una clase de Cnidaria) medusas pequeñas, poco conspicuas pero muy abundantes. Estas son liberadas estacionalmente por colonias de pólipos.

Con la ayuda de extenso trabajo de campo, herramientas moleculares y crianza en el laboratorio, Miglietta investiga diferentes aspectos de la biología tropical de hidrozooas, desde las razones que disparan su producción hasta cómo su ciclo de vida cambia bajo regímenes de productividad oceánica diferente, a través del Istmo de Panamá.

La sorprendente variedad de sus ciclos de vida es una fuente infinita de preguntas y pueden ayudar a entender asuntos básicos y arrojar luz sobre tendencias en evolución de invertebrados.