Tupper 4pm seminar

Tuesday, April 14, 4pm seminar speaker will be Christian Ziegler, STRI's communication associate
Using photography to communicate science and conservation

BDG meeting

The Behavior Discussion Group will meet on Tuesday, April 14, at 2pm, with Thomas Hesselberg, Denmark, at the Large Meeting Room
Behavioral plasticity in orb-spiders

Bambi seminar

Please consult your Outlook e-mails for information on the next Bambi seminar on Thursday, April 15.

Arrivals

Kate Kirby, University of British Columbia, Canada, to study agrobiodiversity in Central American homegardens: an investigation at multiple scales, at Tupper.

Eva Kreiss, Emily Baird, Marie Dacke, Eric Warrant, Joshua van Kleef and Rikard Frederiksen, Lund University, Sweden, to study "Seeing in the dark: the neural basis for enhanced visual performance in nocturnal insects" on BCI.

Tammy Hartke and Casey Hamilton, Northeastern University, to study parasites, pathogens and the breeding strategies of social insects, in Gamboa.

Carrie Woods and Mark Wagner, Clemson University, to participate in the project "Nutrient Augmentation" on BCI.

Smithsonian Tropical Research Institute, Panamá www.stri.org April 10, 2009

Fernandez-Marin receives Tupper Fellowship

Hermógenes Fernández-Marín received the Earl S. Tupper Three Year Postdoctoral Fellowship for young, promising scientists, the most prestigious research award offered by STRI. His project "Ecology and evolution of infectious diseases and disease management in fungus growing ants" was selected among 25 proposals presented by candidates from different parts of the world, and evaluated by 35 STRI scientists.

Born in Penonomé, Coclé, Fernández-Marín, obtained his Ph.D. from Universidad de Puerto Rico, Rio Piedras. Since 1994, he has received more than ten fellowships, the more recent in 2006 and 2007 from STRI and SENACYT-IFARHU to work at STRI and the University of Copenhagen. He is the first Panamanian ever awarded the Tupper fellowship.

Hermógenes will use fungus growing ants and the fungal pathogen *Escovopsis* for his research. It has been found that these ants can produce antibiotics through complex symbioses with different partners. This shows that interactions among individuals are not as simple as the traditional symbiotic relationship among two species.

Under the direction of acting deputy director William T. Wcislo, Hermógenes will focus his research in four main areas: the evolutionary transition among antimicrobial strategies; epidemiologic patters of *Escovopsis* infections; the association among antimicrobials used by eight species of congener ants with different traits of *Escovopsis*, and how fungi react to a different behavior hygiene that includes the bacteria *Pseudonacardia*.

Hermógenes Fernández-Marín recibió la beca posdoctoral Earl S. Tupper de Tres Años para científicos jóvenes y promisorios, la beca más prestigiosa otorgada por STRI. Su propuesta "Ecología y evolución de enfermedades infecciosas y el manejo de éstas por arrieras y otras hormigas cultivadoras de hongos" resultó ganadora entre 25 propuestas presentadas por candidatos de diferentes partes del mundo y evaluadas por 35 científicos de STRI.

Nacido en Penonomé, Coclé, Fernández-Marín obtuvo su doctorado en la Universidad de Puerto Rico, Río Piedras. Desde 1994, ha recibido más de una decena de becas, las más recientes en 2006 y 2007 de STRI y de SENACYT-IFARHU para realizar estudios posdoctorales en STRI y la Universidad de Copenhague.

Esta es la primera vez que un panameño gana la beca Tupper.

Hermógenes enfocará sus estudios en arrieras y el hongo patógeno *Escovopsis*. Se ha descubierto que dichas hormigas producen antibióticos a través de una compleja simbiosis con diferentes socios, lo que demuestran que las interacciones entre individuos no son tan simples como la tradicional relación simbiótica entre dos especies.

Bajo la dirección del subdirector encargado de STRI, William T. Wcislo, Hermógenes enfocará sus estudios en cuatro áreas: la transición evolutiva entre estrategias antimicrobiales, los patrones epidemiológicos de las infecciones de *Escovopsis*, las asociaciones entre antimicrobiales usados por ocho especies de hormigas congéneres con diferentes cepas de *Escovopsis*, y cómo los hongos reaccionan a una conducta diferente de higiene que incluye la bacteria *Pseudonocardia*.

More arrivals

Sandra Adams, University of Wisconsin, Madison, to join the project on evolutionary ecology of the attine ant-microbe mutualism, in Gamboa and Naos Island Laboratories.

Departures

Eldredge Bermingham to Washington DC, at the invitation of SI secretary Clough to participate in a two-day scenario planning workshop and to participate in the Molecular Evolution Review Committee meeting.

Fernando Pascal to Washington DC, on official business at SI.

New publications

Baeza, J. Antonio, Schubart, Christoph D., Zillner, Petra, Fuentes, Soledad, and Bauer, Raymond T. 2009. "Molecular phylogeny of shrimps from the genus *Lysmata* (Caridea: Hippolytidae): the evolutionary origins of protandric simultaneous hermaphroditism and social monogamy." *Biological Journal of the Linnean Society* 96(2): 415-424.

Collin, Rachel, Farrell, Paul, and Cragg, Simon. 2009. "Confirmation of the identification and establishment of the South American slipper limpet *Crepipatella dilatata* (Lamark 1822) (Caenogastropoda: Calyptraeidae) in Northern Spain." *Aquatic Invasions* 4(2): DOI 10.3391/ai.2009.3394. 3392.

Dechmann, Dina K.N., and Safi, Kamran. 2009. "Comparative studies of brain evolution: a critical insight from the Chiroptera." *Biological Reviews* 84(1): 161-172.

A preference for a sexual signal keeps females safe

In a recent interview posted on March 26, Tom Tregenza, Royal Society Fellow and Section Editor for Evolution of *PlosOne*, rated the paper "A preference for a sexual signal keeps females safe" by Tae Won Kim, STRI´s John H. Christy and Jae C. Choe, a top pick in Evolutionary Biology. It was one of five he picked out of the 82 he has processed.

"This is a nice piece of classic behavioural ecology. The question of why females choose to mate with certain males has many potential answers. Among the most straightforward potential explanations, but one that has received less attention than it probably should have, is that the signals that females find attractive actually provide females directly with a benefit. In this study, structures made by male fiddler crabs become more attractive to females when there is more perceived risk from predators, indicating that the structures provide females with shelter from predators."

En una entrevista reciente fechada el 26 de marzo, Tom Regenza, "fellow" de la Royal Socitey y editor de la sección de Evolución de *PlosOne*, calificó el artículo "Una preferencia de señal sexual mantiene a las hembras seguras" por Tae Won Kim, John H. Christy de STRI, y Jae C. Choe, como uno de los mejores en Biología Evolutiva, entre 82 de los que ha procesado.

"Esta es una buena historia de clásica ecología de comportamiento. La prgunta de por qué las hembras escogen aparearse con ciertos machos tiene varias respuestas potenciales. Entre las explicaciones potenciales más directas, pero que ha recibido mucha menos atención de la que se le debe dar, es que las señales que las hembras encuentran atractivas, en realidad le proporcionan un beneficio directo. En este estudio, las estructuras hechas por los cangrejos violinistas machos se vuelven más atractivas para las hembras cuando éstas perciben un mayor riesgo de parte de los depredadores, lo que indica que estructuras les ofrecen refugio de dichos depredadores."

Both articles, review and paper can be downloaded through:
http://everyone.plos.org/2009/03/26/academic-editor-interview-tom-tregenza/

More publications

Gomez, Andres A., Jaramillo, Carlos A., Parra, Mauricio, and Mora, Andres. 2009. "Huesser horizon: A lake and a marine incursion in northeastern South America during the early Miocene." *Palaios* 24(4): 199-210.

Hoang, Loan K., McCoy, Krista A., ST Mary, C.M., and Guillette, Jr., Louis J. 2009. "Abstract: Renal pathologies in giant toads (*Bufo marinus*) vary across land-use practices." *Integrative and Comparative Biology* 49(1): E-243.

Jha, Shalene, and Dick, Christopher W. 2009. "Isolation and characterization of nine microsatellite loci for the tropical understory tree *Miconia affinis* Wurdack (Melastomataceae)." *Molecular Ecology Resources* 9(1): 344-345.

King, David A., Davies, Stuart James, Tan, Sylvester, and Noor, Md. Nur Supardi. 2009. "Trees approach gravitational limits to height in tall lowland forests of Malaysia." *Functional Ecology* 23(2): 284-291.

Martin, Julien, Nichols, James D., McIntyre, Carol L., Ferraz, Goncalo, and Hines, James E. 2009. "Perturbation analysis for patch occupancy dynamics." *Ecology* 90(1): 10-16.

Mathews, Lauren M., and Anker, Arthur. 2009. "Molecular phylogeny reveals extensive ancient and ongoing radiations in a snapping shrimp species complex (Crustacea, Alpheidae, *Alpheus armillatus*)." *Molecular Phylogenetics and Evolution* 50(2): 268-281.

R, R & R

More publications

Mora, Andres, Gaona, Tatiana, Kley, Jonas, Montoya, Diana, Parra, Mauricio, Quiroz, Luis Ignacio, Reyes, German, and Strecker, Manfred R. 2009. "The role of inherited extensional fault segmentation and linkage in contractional orogenesis: a reconstruction of Lower Cretaceous inverted rift basins in the Eastern Cordillera of Colombia." *Basin Research* 21(1): 111-137.

Muscedere, M.L., Seid, Mark A., Johnson, N., Willey, T., Gillis, B., and Trainiello, J.F.A. 2009. "Abstract: Brains, neurotransmitters, nursing, and foraging in the ant *Pheidole dentata* " *Integrative and Comparative Biology* 41(1):E122.

Paine, C.E. Timothy, Harms, Kyle Edward, and Ramos, Jesus Andres. 2009. "Supplemental irrigation increases seedling performance and diversity in a tropical forest." *Journal of Tropical Ecology* 25(2): 171-180.

Ruczynski, Ireneusz, Kalko, Elisabeth K. V., and Siemers, Bjoern M. 2009. "Calls in the forest: A comparative approach to how bats find tree cavities." *Ethology* 115(2): 167-177.

Robertson, D. Ross, and Cramer, Katie L. 2009. "Shore fishes and biogeographic subdivisions of the Tropical Eastern Pacific." *Marine Ecology Progress Series* 380(1): 1-17.

Zigler, Kirk S., Raff, Rudolf A., Byrne, Maria M., Raff, Elizabeth C., and Lessios, Harilaos A. 2009. "Abstract: Gamete compatibility and genetic divergence between the echinoids *Pseudoboletia maculata* and *P. indiana*." *Integrative and Comparative Biology* 49(1): E331.

Smithsonian Tropical Research Institute

From the Director´s Office

The Director's Office and the Carbon Footprint Committee have organized a Conference on STRI's Carbon Footprint to inform all members of the STRI community on our carbon emissions and reduction initiatives, on Wednesday, April 22 at 3:30pm, Tupper Center Auditorium.

Due to the importance of this initiative for the Institution, all STRI employees are expected to attend.

La Oficina del Director y el Comité Huella Ecológica, han organizado una Conferencia sobre la Huella Ecológica de STRI para informar a todos los miembros en nuestra comunidad sobre nuestro impacto y las iniciativas para reducir nuestra huella, el miércoles 22 de abril a las 3:30pm, el Auditorio del Centro Tupper.

Dada la importancia de esta iniciativa para la Institución, esperamos contar con la participación de todo el personal de STRI.

ABP invites STRI

Acta Biologica Panamensis (ABP) invites the STRI community to read and submit papers in this online peer reviewed journal published by Colegio de Biólogos de Panamá. ABP will published biology work done in Panama and the world in English and Spanish. For more details, visit ABP current web site at: http://www.cobiopa.org/Panamensis.html

Acta Biológica Panamensis (ABP) invita a la comunidad de STRI a leer y someter artículos en esta revista arbitrada por pares en línea, publicada por el Colegio de Biólogos de Panamá. ABP publicará trabajos de investigaciones biológicas realizadas en Panamá y el mundo en inglés y español. Visite la página de web actual de ABP en

http://www.cobiopa.org/Panamensis.html

STRI in the news

"Findings in ceramics reported from Smithsonian Tropical Research Institute" 2009. *Journal of Technology*: April 7.

"Bocas del Toro scientists take flight with LightHawk" by Rachel Collin. 2009. *Bocas Breeze* 6(4): April. www.thebocasbreeze.com

"Mireya Correa: un reconocimiento muy bien justificado" by Edgardo I. Garrido-Pérez. 2009. *Acta Biologica Panamensis* 1: 107.

Publication update 08

Darnell, M. Zackary, Ogburn, Matthew B., and Diaz, Humberto. 2008. "A novel running wheel apparatus to monitor locomotor rhythms in land crabs." *Marine and Freshwater Behaviour and Physiology* 41(3): 205-210.

Giraldo, Nathalia, Salazar, Camilo, Jiggins, Chris D., Bermingham, Eldredge, and Linares, Mauricio. 2008. "Two sisters in the same dress: Heliconius cryptic species." *BMC Evolutionary Biology* 8: 324-324.

Maan, Martine E., Cummings, Molly E., and Mappes, J. 2008. "Female preferences for aposematic signal components in a polymorphic poison frog." *Evolution* 62(9): 2334-2345.

Martinez-Luis, Sergio, Della-Togna, Gina, Coley, Phyllis D., Kursar, Thomas A., Gerwick, William H., and Cubilla-Rios, Luis. 2008. "Antileishmanial constituents of the Panamanian endophytic fungus *Edenia* sp." *Journal of Natural Products* 71(12): 2011-2014.

TEP´s shore fishes and its biogeographic subdivisions

Smithsonian Tropical Research Institute, April 10, 2009

Story:
D.R. Robertson and K.L. Cramer. 2009. *Marine Ecology Progress Series* 380: 1-17 (April 7).
Edited by M Alvarado and ML Calderon
Illustration:
Ernesto Peña

The Tropical Eastern Pacific (TEP) is an isolated marine biogeographic region with a high level of endemism among coastal fish species. See www.stri.org/sftep

STRI marine scientist D. Ross Roberson, and Katie L. Cramer, from Scripps assessed concepts of that region and how it is biogeographically subdivided by analyzing the distributions of resident shore-fishes throughout the TEP and immediately adjacent areas, taking into account local variation in faunal similarity (among all species, endemics, and different ecological subgroups), levels of endemism, functional-group composition, and species richness.

The result is a new arrangement of TEP subdivisions, with two continental provinces: (1) the entire Gulf of California + lower Pacific Baja California (Cortez, in the illustration); and (2) the remainder of the shoreline extending to northern Peru (Panamic); plus (3) an ocean-island province that includes the Galapagos and four other islands/ archipelagos (Ocean Island).

Inter-Research Science Publisher is pleased to make this feature article openly available for viewing by our readers at: http://www.int-res.com/journals/meps

Cortez

Panamic

Ocean Island

El Pacífico Oriental Tropical (TEP, por sus siglas en inglés) es una región con un alto nivel de endemismo entre especies de peces costeros. Vea: www.stri.org-sftep

El científico marino de STRI, D. Ross Robertson y Katie L. Cramer de Scripps, estudiaron conceptos de esta región y cómo está biogeográfica-mente subdividido, al analizar las distribuciones de peces costeros residentes a través de TEP y áreas inmediatamente adyacentes, tomando en consideración la variación local en similitud de fauna (entre todas las especies, endémicas, y diferentes sub-grupos ecológicos), los niveles de endemismo, composición de grupos funcionales, y la riqueza de especies.

El resultado es un nuevo arreglo de subdivisiones de TEP con dos provincias continentales: 1) el Golfo de California entero y el Pacífico Inferior de Baja California (Cortez, en la ilustración); 2) el resto de la línea costera que se extiende hasta el norte del Perú (Panamic); 3) además una provincia de isla oceánica que incluye Galápagos y otras cuatro islas-archipiélagos (Ocean Island).

Inter-Research Science Publisher se complace en poner a la disposición de todos los lectores esta significativa contribución en: http://www.int-res.com/journals/meps