



STRINEWS

MAY 25, 2012



Rendering by Liz Bradford

Team Titanoboa strikes again: new giant turtle

Media reports this week described a new species of giant turtle as “Smart-car” and “kiddie-pool”-sized. *Carbonemys cofrinii*, was named *Carbonemys*, “Coal-turtle,” based a football-sized skull excavated by former STRI intern Aldo Rincón in Colombia’s Cerrejon coal mine. The species name, *cofrinii* honors David Cofrin, who generously funded staff scientist Carlos Jaramillo’s Cofrin Chair in Tropical Palynology. The Cerrejon mine previously yielded 60 million-year-old fossils of the world’s largest snake, *Titanoboa cerrejonensis*.

Edwin Cadena, who named the turtle, came to STRI as an intern in Jaramillo’s lab, went on to do a master’s with paleontologist Jonathan Bloch at the University of Florida and is now a doctoral student at North Carolina State University with Danial Ksepka. Cadena’s academic trajectory is not unusual for Jaramillo’s students. Jaramillo has a knack for fostering the right mix of rigor, imagination and networking skill to transform young scholars into successful scientists.

El equipo que encontró a la Tintanoboa lo logra otra vez: Nueva tortuga gigante

Los medios informan esta semana sobre el descubrimiento de una nueva especie de tortuga gigante que podía ser del tamaño de un auto pequeño o de una piscina para niños. El *Carbonemys cofrinii*, se le llamó *Carbonemys* “Tortuga de Carbón” por el hallazgo de un cráneo del tamaño de una pelota de fútbol excavada en la mina de carbón en Cerrejón, Colombia por Aldo Rincón, quien fuera pasante en el Smithsonian en Panamá. El nombre de la especie, *cofrinii*, es en honor a David Cofrin quien generosamente patrocinó la cátedra en palinología tropical de Carlos Jaramillo, científico de planta en el Smithsonian. Previamente se obtuvieron de esta mina los fósiles de hace 60 millones de años de la serpiente más grande del mundo, la *Titanoboa cerrejonensis*.

Edwin Cadena, quien dio el nombre a la tortuga, llegó al Smithsonian como pasante en el laboratorio de Jaramillo para

luego continuar su maestría con el paleontólogo Jonathan Bloch en la *University of Florida* y ahora es estudiante de doctorado en la *North Carolina State University* con Danial Ksepka. La trayectoria académica de Cadena es usual para los estudiantes de Jaramillo. Carlos Jaramillo tiene un talento natural para fomentar la mezcla perfecta de rigor, imaginación y habilidad de “networking” para transformar jóvenes estudiantes en científicos exitosos.

Cadena, E.A., Ksepka, D.T., Jaramillo, C.A., Bloch, J.L., 2012. New pelomedusoid turtles from the late Palaeocene Cerrejon Formation of Colombia and their implications for phylogeny and body size evolution. *Journal of Systematic Palaeontology*. Vol. 10(2) 313-331. dx.doi.org/10.1080/14772019.2011.569031



Edwin Cadena poses next to one of the turtle shells from Cerrejon Mine. Edwin Cadena posa junto a uno de los caparazones de tortuga encontrados en la Mina de Cerrejón.

◀ *Carbonemys cofrinii*
Artist’s rendering of by Liz Bradford.
Dibujo hecho por la artista Liz Bradford.

SEMINARS

GAMBOA SEMINAR

Mon., May 28, 4:30 pm
Sofia Gripenberg
Oxford
Gamboa schoolhouse
Insect seed predation on Barro Colorado Island - a plant community perspective

CTFS-SIGEO TALK

Tues., May 29, 10:30 am
Discussion of paper:
Daniel J. Johnson
et al. *Science* 336, 904 (2012)
Tupper Exhibit Hall
Conspecific Negative Density Dependence and Forest Diversity
<http://www.sciencemag.org/content/336/6083/904.abstract>

TUPPER SEMINAR

Tues., May 29, 4 pm
Marcelo Sánchez
Paläontologisches Institut und Museum
Universität Zürich
Tupper auditorium
The Venezuelan Neogene and its relevance to address macroevolutionary patterns in the neotropics

PALEOTALK

Wed., May 30, 4 pm
Marcelo Sánchez
Paläontologisches Institut und Museum
Universität Zürich
CTPA
Embryos in Deep Time: The relevance of Palaeobiology for Evo-Devo Research

ARRIVALS

Jun. 01 - Aug. 15

Field Course - INRC Internship Program - 2012
Barro Colorado Island (BCI),
Gamboa, Naos Marine Lab

Michael Ryan, Amanda Lea, Meghan Still, Kyle Wilhite, Ryan Taylor, Kelsey Mitchell, Nicole Stange, Andrew Smejdir
Multi-modal communication
Gamboa

Kimberly Mighell
Field Museum of Natural History
Conflicts among members of interacting symbioses: How do symbiotic fungi influence plant defense against leaf-cutting ants?
Gamboa

Cindy Alejandra Garzón
Universidad Jorge Tadeo Lozano
Ecology, structure and long-term dynamics of Neotropical forests
Barro Colorado Island (BCI)

Ivan Leroux
Connecticut College
ICBG: Training, conservation and drug discovery using panamanian microorganisms

Allan Carrillo-Baltodano
Universidad de Costa Rica
Matthew Starr
University of Louisiana at Lafayette
Biased evolutionary transitions in mode of development: Can differences in morphology and digestive function be linked to evolvability of gastropod development
Naos Marine Lab

Laura Crothers
University of Texas at Austin
Evaluating the impacts of anthropogenic habitat disturbance on an aposematic signal
Bocas del Toro

Tyler Abrahamson, Jane Lucas
University of St. Thomas
Toward a stoichiometric theory of ant ecology-from colony performance to community composition
Barro Colorado Island (BCI)

Adeline Yong
Nanyang Technological University
Feeding ecology of *Ocypode gaudichaudii* in the Rodman region
Naos Marine Lab



Kalko's Round-eared Bat

A new bat species, found only in Panama's Soberania National Park, was named *Lophostoma kalkoae*. "The name *kalkoae* is in honor of our late friend Dr. Elisabeth K.V. Kalko, a remarkable scientist who collected both specimens and who has contributed in significant ways to the understanding of bat behavior and ecology worldwide," write Paul Velazco and Alfred Gardner, who described the species.

Elisabeth netted a male and a female adult near Pipeline Road in 1998. The white patches behind their ears connected by a thin line of pale hair to their white abdomens and an indentation on their canine teeth set this species apart. Spotted hyenas, ring-tailed lemurs, squirrel monkeys and spider monkeys all have masculinized genitalia, which is another distinguishing feature of the species.

STRI will host a symposium in Eli's memory on Aug. 21 and 23.

El murciélago de orejas redondas de Kalko

Una nueva especie de murciélago encontrado sólo en el Parque Nacional Soberanía en Panamá ha sido denominado *Lophostoma kalkoae*. "El nombre *kalkoae* es en honor a nuestra fallecida amiga la Dra. Elisabeth K.V. Kalko, científica sobresaliente que colectó ambos especímenes y quien ha contribuido de manera significativa a la comprensión del comportamiento y ecología de los murciélagos alrededor del mundo," escriben Paul Velazco y Alfred Gardner quienes describieron la especie.

Elisabeth capturó a un macho y una hembra adultos cerca del Sendero del Oleoducto en Panamá en 1998. Los parches blancos detrás de las orejas, conectados por una delgada línea de cabello pálido que baja hasta su blanco abdomen, además de una hendidura en sus dientes caninos, diferencian a esta especie de las otras. Otro aspecto que distingue a esta especie son los genitales masculinizados comunes en las hienas, los lémures de cola de anillo, monos ardilla y monos araña.

El Smithsonian en Panamá celebrará un simposio en memoria de Eli el 21 y el 23 de Agosto.

Velazco, P.M., Gardner, A.L. 2012. A new species of *Lophostoma* d'Orbigny, 1836 (Chiroptera: Phyllostomidae) from Panama. *Journal of Mammalogy*, 93(2):605-614

Funds for Barcoding Available

David Schindel from the Consortium for the Barcode of Life at the National Museum of Natural History announced that the Office of the Smithsonian's Under Secretary for Science will offer new funds for DNA barcoding. The deadline for pre-proposals is June 15.

Fondos disponibles para proyecto de codificación de barra

David Schindel del consorcio *Barcode of Life* en el Museo Nacional de Historia Natural anunció que la oficina del Sub-Secretario para la ciencia del Smithsonian ofrecerá nuevos fondos para el proyecto de codificación de barra de ADN. La fecha límite para presentar pre-propuestas será el 15 de junio.

ARRIVALS

Jesse Czekanski-Moir
University of Oklahoma
Experimental MacroEcology-the kinetics of biodiversity in soil microbes and invertebrates
Barro Colorado Island (BCI)

Erin Valley, Corinne Zawacki
Tulane University
Laura Crothers
University of Texas at Austin
Selection and the rapid evolution of morphological variation among Strawberry poison-dart frogs of the Bocas del Toro archipelago
Bocas del Toro

Cassidy Rankine
Universidad de Alberta
Plant functional traits
Barro Colorado Island (BCI)

Christina Campbell, Meghan Strong
California State University
Investigating the effects of radio collars on the grooming behavior of female spider monkeys
Barro Colorado Island (BCI)

Rosa Arribas
Estación Biológica de Doñana-CSIC
The evolution of terrestrial reproduction in *Dendropsophus*
Gamboa

Michaela Halsey
Frostburg State University
Influence of liana removal on small mammal communities and seed fate.
Barro Colorado Island (BCI)

Sara Mason
Colby College
Christina Buelow
University of Alberta

Anna Deasey
Swansea University
Assessing the condition-dependence and fitness consequences of male warning color brightness in *Dendrobates pumilio*, the strawberry poison dart frog
Bocas del Toro

Gerald Schneider
University of Utah
We interrupt this broadcast: the effects of anthropogenic air pollutants on plant-insect signaling
Barro Colorado Island (BCI)

ARRIVALS

Christopher Tranter

University of Leeds
Comparative evolutionary ecology of genetic diversity and symbionts in arboreal and ground-living ants
Barro Colorado Island (BCI)

Jeffrey Wolf

University of California - Los Angeles
“Dimensions: testing the potential of pathogenic fungi to control the diversity, distribution, and abundance of tree species in a Neotropical forest community” - and - “Growth and survival of trees in relation to soil nutrient variation in the Barro Colorado Island 50 ha plot”
Barro Colorado Island (BCI)

Karen Warkentin

Boston University
How do embryos use vibrational cues to assess risk? - and - Parent-embryo interactions in Neotropical glassfrogs (Centrolenidae)
Gamboa

Karen Lips

University of Maryland
Evolution of Amphibian MHC Genes after an infectious disease outbreak

Claudia Rosales

North Carolina State University
The evolution of mimicry in *Heliconius*
Tupper, Naos Marine Lab

DEPARTURES

Harilaos Lessios

Washington D.C.
To attend meeting of Cryopreservation Grand Challenges project.

Rachel Collin

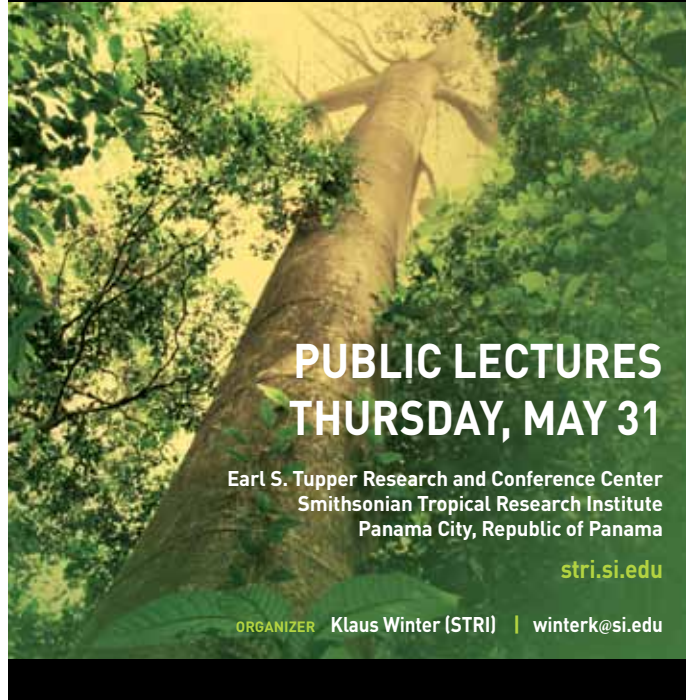
Washington D.C.
To attend the Marine GEO Board meeting and Marine GEO meeting with Eva Pell and Castle development office.

Allen Herre

Cold Spring Harbor, N.Y.
To attend and present talk at the 77th Symposium: The biology of plants, at the Cold Spring Harbor Laboratory

TEMPERATURE SYMPOSIUM

Tropical Vegetation and Rising Temperatures: Functional Basis of Ecological Response



PUBLIC LECTURES THURSDAY, MAY 31

Earl S. Tupper Research and Conference Center
Smithsonian Tropical Research Institute
Panama City, Republic of Panama

stri.si.edu

ORGANIZER Klaus Winter (STRI) | winterk@si.edu

Agenda

- 8:45 **Welcome and introduction**
Klaus Winter | STRI
-
- 9:00 **Molecular basis of high-temperature tolerance**
Elizabeth Vierling | University of Massachusetts Amherst
-
- 10:00 **COFFEE BREAK**
-
- 10:15 **Rubisco and temperature**
David Kubien | University of New Brunswick
-
- 11:15 **Respiration and temperature**
Owen Atkin | Australian National University
-
- 12:15 **LUNCH**
-
- 13:15 **CO₂ and temperature**
David Tissue | University of Western Sydney
-
- 14:15 ***Pinus* and temperature**
Robert Teskey | University of Georgia
-
- 15:15 **COFFEE BREAK**
-
- 15:30 **High-temperature adaptation/acclimation in tropical tree species**
Alex Cheesman | STRI
-
- 16:15 **Temperature, respiration and tropical canopies**
Martijn Slot | University of Florida
-
- 17:00 **Tropical plants on a warmer planet**
Joseph Wright | STRI

NEW PUBLICATIONS

Barrantes, Gilbert and Eberhard, William G. 2012. Extreme behavioral adjustments by an orb-weaver spider to restricted spaces. *Ethology*, 118(5): 438-449. doi:10.1111/j.1439-0310.2012.02029.x

Goodbody-Gringley, Gretchen, Vollmer, Steven V., Woollacott, Robert M. and Giribet, Gonzalo. . Limited gene flow in the brooding coral *Favia fragum* (Esper, 1797). *Marine Biology*, 157(12): 2591-2602. doi:10.1007/s00227-010-1521-6

Heckadon-Moreno, Stanley. 2012. Armagedon Hartmann y Alexander Wetmore a la sombra del Volcan Baru, 1968. *Eposcas*, 27(3): 10-11.

Molinas, C. E., Martinez, J. I., Fiorini, F., Escobar, J. and Jaramillo, C. 2012. Paleoenvironmental reconstruction for the lower Pliocene Arroyo Piedras section (Tubará – Colombia): Implications for the Magdalena River – paleodelta's dynamic. *Journal of South American Earth Sciences*, doi:10.1016/j.jsames.2012.04.007

Ugan, Andrew, Neme, Gustavo, Gil, Adolfo, Coltrain, Joan, Tykot, Robert and Novellino, Paula. 2012. Geographic variation in bone carbonate and water d18O values in Mendoza, Argentina and their relationship to prehistoric economy and settlement. *Journal of Archaeological Science*, doi:10.1016/j.jas.2012.04.013

Zigler, Kirk S., Byrne, Maria, Raff, Elizabeth C., Lessios, H. A. and Raff, Rudolph A. 2012. Natural hybridization in the sea urchin *Pseudoboletia* between species without apparent barriers to gamete recognition. *Evolution*, doi:10.1111/j.1558-5646.2012.01609.x

Hirsch, B.T., M.D. Visser, R. Kays & P.A. Jansen. 2011. Quantifying seed dispersal kernels from truncated seed-tracking data. *Methods in Ecology and Evolution*. doi: 10.1111/j.2041-210X.2011.00183.x

How do pioneer seeds survive being buried alive?

Camilo Zalamea, post doc with Jim Dalling at the University of Illinois, works in understory patches across the forest, gaily dotted with blue flags and hot pink flagging tape. Though his data sheet is titled “Burial”, the site is not to become a cemetery for the several different species of seeds he buries.

“Scientists don’t know how the tiny seeds of pioneer trees—light-loving species that are the first to colonize openings—can survive in the ground,” said Carolina Sarmiento, project intern.

“Most of the seeds die,” said Camilo, “but some survive for years. We want to know which ones survive and how.” After burying mesh bags that look like party favors each containing 45 seeds, they will return from time to time to unearth the seeds and analyze them.

Will the seeds still germinate? How long will they persist? Are the survivors using physical, chemical and biotic defenses or a combination? The 4-year project will reveal how species contribute to “seed banks,” seeds stored in soil that recolonize disturbed areas of forest.

In a dim area of the forest understory, Camilo Zalamea and Ignacio Quintero, project intern, mark a new experimental row where the seed bags will be buried.

En un área oscura del sotobosque, Camilo Zalamea e Ignacio Quintero, pasante del proyecto, marcan una nueva fila experimental donde se enterrarán bolsas con semillas.

Questions/comments
Preguntas/comentarios
STRINews@si.edu

¿Cómo sobreviven las semillas pioneras tras ser enterradas vivas?

Camilo Zalamea, estudiante post doctoral con Jim Dalling en la University of Illinois, EEUU, trabaja en parcelas de sotobosque, curiosamente adornadas con banderitas azules y cinta rosada neón alrededor de la selva. A pesar de que su hoja de datos se titula “Entierro”, el lugar no se convertirá en cementerio de las varias y distintas especies de semillas que entierre.

“Los científicos desconocen cómo las semillas pequeñas de árboles pioneros—especies amantes de la luz que son las primeras en colonizar los claros—pueden sobrevivir en la tierra,” comenta Carolina Sarmiento, pasante del proyecto.

“La mayoría de las semillas muere,” expresó Camilo, “pero algunas sobreviven por años. Queremos saber cuáles sobreviven y cómo lo hacen.” Luego de enterrar bolsas de malla que parecen canastitas de cumpleaños, cada una con 45 semillas, volverán cada cierto tiempo para desenterrarlas y analizarlas.

¿Germinarán las semillas después de esto? ¿Cuánto tiempo pueden durar? ¿Utilizan las semillas sobrevivientes defensas físicas, químicas, bióticas o una combinación de éstas? El proyecto durará 4 años y busca cómo las especies contribuyen a los “bancos de semillas”: semillas almacenadas en suelos que recolonizan áreas perturbadas en los bosques.

Photo by Charles Kazilek

