

Tupper 4pm seminar

Tuesday, February 28 is Carnival Day in Panama, and a holiday for STRI. There will be no seminar.

Bambi seminar

Please check GoupWise for information on the next Bambi seminar on BCI.

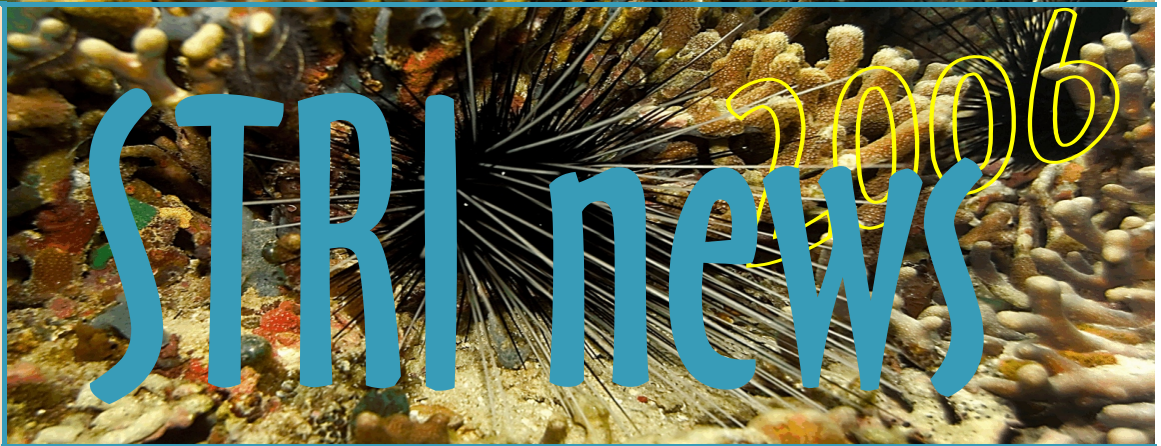
Arriving next week

Michael Scherer-Lorenzen, ETH Zurich, Germany, to study the functional significance of tree diversity for nutrient dynamics in a tropical plantation - Subproject of the Sardinilla Experiment.

Patricia Ann Baird and Timothy Burr, California State University and Kate Goodenough, Simon Fraser University, to conduct a multinational study of Neotropical migrants: the Western Sandpiper as a model, in the Panama Bay.

Kirk Klasing, Mara Evans, Michael Ballou and Laura Flatow, University of California at Davis, to study the life history physiology nexus constraints on the evolutionary diversifications of avian life histories, in Gamboa.

Chelina Batista Mojica, Jacob Pattison and Jorge Herrera, University of Illinois Urbana-Champaign, to monitor the dynamics of avian communities and population in Central Panama, at Fortuna, Soberanía, Gamboa and Pipeline Road.



Smithsonian Tropical Research Institute, Panamá

www.stri.org

February 24, 2006

David Kline's results on Panamanian corals reviewed by *Science*

Science writer Eli Kintisch wrote the article "Don't sugarcoat corals" in today's issue of the journal (311: 1094) with results STRI postdoctoral fellow David Kline presented at the annual meetings of the AAAS (the publisher of *Science*). His findings suggest that carbon-induced bacterial growth may be a major problem for Caribbean reefs, that have lost 80% of their coral cover in the last three decades. "As coastal populations near reefs have skyrocketed, scientists have fingered phosphates, nitrates, and ammonia as the most likely culprits." Results by Kline—gathered from more than 3000 individual month-long experiments on coral heads sampled at STRI's Bocas del Toro Research Station—show that almost 35% of corals exposed to carbon compounds died, *vs* about 7% of those given nitrate or phosphate.

"Separate experiments showed that sugars led to an explosive growth of coral-associated



bacteria not caused by other chemicals. If this holds true in the ocean, says Kline, corals already under stress from warmer water temperatures and the loss of fish and urchins that eat algae may succumb directly to the rapid growth of the normally symbiotic bacteria. Or they may be weakened enough that the fleshy algae finally win out. "Carbon-loading disrupts the balance between coral and its associated bacteria, leading to disease," says Kline, who will detail the work in *Marine Ecology Progress Series* next month."

Eli Kintish, escritora de la revista *Science*, publicó, en el número de hoy (311: 1094) "Don't sugarcoat corals" [No endulce los corales] con resultados que el becario posdoctoral de STRI David Kline, presentó en el congreso anual de la AAAS (responsable por la revista *Science*), que

sugieren que el crecimiento inducido de bacterias puede ser un problema importante para los arrecifes del Caribe, los que han perdido el 80% de su cobertura coralina en las últimas tres décadas. "Al dispararse las poblaciones costeras, los científicos hay señalado a los fosfatos, nitratos y amonía como responsables. Los resultados de Kline—obtenidos de más de 3000 experimentos individuales de un mes en cabezas de coral estudiadas en la Estación de Investigaciones de STRI en Bocas del Toro—muestran que cerca del 35% de los corales expuestos a los compuestos de carbono murieron, comprados a cerca del 7% de aquellos que se les aplicó nitrato o fosfato.

"Experimentos separados mostraron que los azúcares llevaron a un crecimiento explosivo de bacterias

More arrivals

David Zawada, US Geological Survey, to conduct coral reef mapping with the USGS ATRIS camera system, on Bocas del Toro.

Philip Thompson, US Geological Survey, to study biodiversity, on Bocas del Toro.

Helene Muller-Landau, University of Minnesota, to study seed dispersal by wind and plant recruitment in tropical forests –an interdisciplinary investigation across multiple scales, on BCI.

William Butcher, US Geological Survey, to conduct coral reef mapping with the USGS ATRIS camera system, on Bocas del Toro.

Sergio Estrada, Universidad de los Andes, to study land bridge islands in Panama as a model for studying the effects of habitat fragmentation on Neotropical bat communities, on Gatun Islands.

Barnett Schlinger, University of California in Los Angeles, to study hormonal and neural control of a sexually dimorphic behavior.

Adam Stein, Syracuse University, to signal evolution and speciation in bearded manakin (*Manacus* spp.), in Gamboa.

Sharon Shattuck, University of Georgia, to work on the 50-ha Plot Seedling Census, on BCI.

Anja Kaczmarczyk, Institute of Soil Science and Forest Nutrition, University of Goettingen, to work on the NITROF-Impact of elevated nitrogen input on the biogeochemistry and productivity of tropical forest, in Gamboa, Fortuna and BCI.

asociadas a los corales, que no fueron causados por otros químicos. Kline afirma que si estos resultados se mantienen en el océano, los corales, que ya están estresados por aguas más calientes y la pérdida de peces y erizos que comen algas, sucumbirán directamente por el rápido crecimiento de bacterias normalmente simbióticas.

Otra posibilidad sería que se debilitarían al punto que el tejido de las algas finalmente les gane. "Las cargas de carbono rompen el balance entre los corales y sus bacterias asociadas, levándolos a la enfermedad" concluyó Kline, quien detallará su trabajo en el número del próximo mes de *Marine Ecology Progress Series*.



SI's Women's Committee visits STRI

Members of the Smithsonian Institution's Women's Committee visited STRI early this month, to meet with STRI scientists and officials, get acquainted with STRI programs on the Isthmus, and visit our facilities.

The Smithsonian Women's Committee was founded in 1966, to advance the interests of the Smithsonian Institution through fundraising activities and special projects. Since its founding, the Committee has raised over \$6 million for the benefit of the institution, providing the necessary funds to many projects. Many STRI projects have been made possible thanks to the Women's Committee.

Miembros del Comité de Mujeres de la Institución

Smithsonian visitaron STRI a principios de este mes, para reunirse con científicos y funcionarios de STRI, familiarizarse con los programas que lleva a cabo el Instituto en el Istmo de Panamá, y visitar nuestras instalaciones.

El Comité de Mujeres del Smithsonian se fundó en 1966, para adelantar los intereses de la Institución a través de actividades filantrópicas y proyectos especiales. Desde su fundación, el Comité de Mujeres del Smithsonian ha recaudado más de seis millones de dólares para beneficio de la Institución, suministrando los fondos necesarios para muchos proyectos. Muchos proyectos de STRI han sido posibles gracias al Comité de Mujeres del Smithsonian.

New publications

Bohman, Stephanie A., and O'Brien, Sean T. 2006. "Allometry, adult stature and regeneration requirement of 65 tree species on Barro Colorado Island, Panama." *Journal of Tropical Ecology* 22(2): 123-136.

Eberhard, William G. 2006. "Sexually reversed copulatory courtship roles and possible nuptial feeding in the soldier beetle *Ditemnus acantholabus* (Champion 1915) (Coleoptera: Cantharidae)." *Journal of the Kansas Entomological Society* 79(1): 13-22.

Ewers, Robert M., and Didham, Raphael K. 2006. "Confounding factors in the detection of species responses to habitat fragmentation." *Biological Review* 81(2): 117-142

Kirby, Kathryn R., Laurance, William F., Albernaz, Ana K. M., Schroth, Goetz, Fearnside, Philip M., Bergen, Scott, Venticinque, Eduardo M., and Da Costa, Carlos. 2006. "The future of deforestation in the Brazilian Amazon." *Futures* 38(4): 432-453.

Krause, G. Heinrich, Galle, Alexander, Virgo, Aurelio, Garcia, Milton, Bucic, P., Jahns, P. and Winter, Klaus. 2006. "High-light stress does not impair biomass accumulation of sun-acclimated tropical tree seedlings (*Calophyllum longifolium* Willd. and *Tectona grandis* L. f.)." *Plant Biology* 8(1): 31-41.

Lips, Karen R., Brem, Forrest, Brenes, Roberto, Reeve, John D., Alford, Ross A., Voyles, Jamie, Carey, Cynthia, Livo, Lauren, Pessier, Allan P., and Collins, James P. 2006. "Emerging infectious disease and the loss of biodiversity in a Neotropical amphibian community." *Proceedings of the National Academy of Sciences* 103(9): 3165-3170.

More publications

Mayo, Julia, and Cooke, Richard G. 2005. "La industria prehispanica de conchas marinas en Gran Coclé, Panamá. Análisis tecnológico de los artefactos de concha del basurero-taller del Sitio Cerro Juan Díaz, Los Santos, Panamá." *Archaeofauna* 14: 285-298.

Miura, Osamu, Kuris, Armand M., Torchin, Mark E., Hechinger, Ryan F., and Chiba, Satoshi. 2006. "Parasites alter host phenotype and may create a new ecological niche for snail hosts." *Proceedings of the Royal Society (London)* B Online.

Sayer, Emma J. 2006. "Using experimental manipulation to assess the roles of leaf litter in the functioning of forest ecosystems." *Biological Review* 80(1): 1-31.

Zotz, Gerhard, and Laube, Stefan. 2005. "Tank function in the epiphytic bromeliad, *catopsis sessiliflora*." *Ecotropica* 11: 63-68.

STRI in the news

"Sugar Kills – New Clues in the Mystery of Coral Diseases." 2006. *Innovations Report*, February 20.

"Don't sugarcoat corals" by Eli Kintisch. 2006. *Science* 311(February 24): 1094.

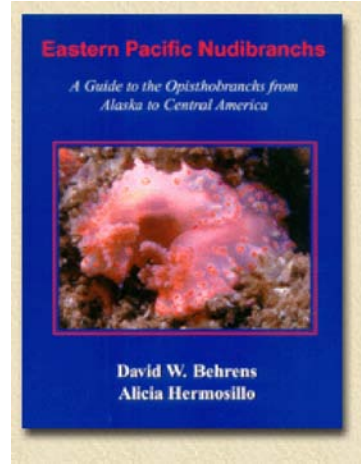
"Frog killer found after 6-year stakeout 'Noah's Ark' program aims to save species from extinction" by Michael Schulder. 2006. *CNN.com* February 21.

"Comunicado." 2006. *La Prensa* (February 24): 24A.

New book

The new book *Eastern Pacific Nudibranchs: A guide to the Opisthobranchs from Alaska to Central America*, (2005), authored by David W. Behrens and Alicia Hermosillo, contains information gathered with STRI support and onboard the *R.V. Urracá*.

The work is a complete revision of Behrens' Pacific Coast Nudibranch, expanding the range to the southern end of Mexico. Contains 314 species (100 more than Pacific Coast Nudibranch 2nd edition)- all in



color with mostly new photos. Two-to-three photos for some species. It sells for \$35 at: www.seachallengers.com/



Visit to Bocas

Recently, members of Panama Verde Group, coming from a distant indigenous community visited STRI's Bocas del Toro Research Station with Peace Corps volunteers. Back home the students held fund-raising activities to pay their way to the Station.

The visitors were briefed on conservation and sustainable development practices. The Bocas' environmental education program aims to promote positive personal qualities such as leadership and a high regard for nature.

Recientemente, miembros del Grupo Panamá Verde de una comunidad indígena distante, visitaron la Estación de STRI en Bocas con voluntarios del Cuerpo de Paz. Los integrantes del grupo realizaron actividades para recoger fondos y pagar el viaje a la Estación.

Los visitantes recibieron información sobre conservación y técnicas de desarrollo sostenible. El programa ambiental de Bocas está dirigido a promover cualidades personales positivas, liderazgo y alta estima por la naturaleza.

From the ESP

The Environmental Science Program announces the publication of the 2005 Annual Meteorological and Hydrological Summary for BCI. The summary can be downloaded as either a Word or PDF document at: http://striweb.si.edu/esp/physical_monitoring/summary_bci.htm


El Programa de Ciencias ambientales anuncia la publicación del Resumen Meteorológico e Hidrológico de BCI. El resumen puede bajarse tanto en Word como en .pdf en http://striweb.si.edu/esp/physical_monitoring/summary_bci.htm

March b' days

| | |
|---------------------|----|
| Marlon Smith | 1 |
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| Rivieith de Liones | 1 |
| Harilaos Lessios | 4 |
| Pedro Escudero | 6 |
| Benjamin Ordoñez | 6 |
| Carla Chizmar | 10 |
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| Mauricio Pineda | 19 |
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Miscellaneous

Cats needing good homes. Moving to Europe and can't take our cats with us. Looking for homes for three cats and two eight-month old kittens! All are very friendly and have been neutered. Tel: 314-9266 Email: dentd@si.edu



science in progress:

Looking at technology through the lens of the scientist

Story: Milton García
Edited by ML Calderon
Photos: MA Guerra

system, now it's automatic, saving time and money.

Many times is impossible to find solutions to the needs of the research projects tropical scientists carry out at STRI. Needs no other researcher had before, like a pump collecting tropical fog to study its isotopes. Other times is too expensive to buy something for a single use—a glass breaker to enable an ultramicroton to cut sections of tissue.

"But it's even more challenging when the local distributor tells you it can't be done" explains ecologist Milton García, research assistant to Joe Wright and Klaus Winter.

García and Winter used to measure photosynthetic activity from 6am to 6pm each day at Gamboa. Thanks to an adaptation of the technology at hand and designing a new computer program for the glass chambers

Milton also remembers small solutions, like using "chaquira" bids as color codes. With zero budget, hundreds of left-over gadgets and parts waiting to render service, and scientific ingenuity, García has already seen many publications resulting from data collected by some of his prototypes.

Muchas veces es imposible encontrar soluciones para las necesidades de los proyectos de investigación que se llevan a cabo en STRI. Necesidades que ningún otro investigador ha tenido antes, como una bomba que colecta neblina tropical, para estudiar sus isótopos. Otras veces es demasiado caro comprar algo para un sólo uso—un cortador de vidrio para habilitar un ultramicrotón que corta secciones mínimas de tejido.

"Pero el mayor reto es cuando la distribuidora local dice que no se puede hacer" explica el ecólogo Milton García, asistente de investigación de Joe Wright y Klaus Winter.

García y Winter debían tomar medidas manuales de actividad fotosintética todos los días en Gamboa de 6am a 6pm. Gracias a una adaptación de la tecnología a su disposición y el diseño de un nuevo programa de computadora para las cámaras de vidrio, ahora es automático, ahorrando tiempo y dinero al proyecto.

García también recuerda las pequeñas soluciones—usar pepitas de chaquira como código de colores para marcar hojas. Con un presupuesto de cero, cientos de partes y aparatos dejados atrás que esperan su oportunidad de servir y el ingenio científico, García ya ha visto muchas publicaciones resultado de información lograda con algunos de sus prototipos.