

Tupper seminar

Tuesday, February 18, noon seminar speaker will be Jean Philippe Puyravaud, French Institute of Pondicherry, India
Effect of the human-related disturbance on the rain forest of the Western Ghats

Special Bambi today!

Today, Fri, Feb 14, Tania Dorrity, BBC will present **Animal Camera**

This will be followed by a get together. Make reservations for the late boat and dinner if you would like to attend!

Bambi seminar

Thursday, February 20, Bambi seminar speaker will be Hubert Herz, University of Würzburg
Herbivory of leaf-cutting ants: rates and regulation

Arrivals

Ellen Clark, short-term fellow from Monach University, Australia, Feb 14 - Jun 30, to study foraging strategies of the leaf-cutter ants, *Acromyrmex octospinosus* and *Atta colombica*, on BCI.

Katherine Milton, University of California, Feb 17 - Mar 18, to continue research on population dynamics on the howler monkey population, on BCI.

Stephanie Bohlman, University of Washington, Feb 17 - May 20, to conduct remote sensing of tropical forest canopies, at Tupper and Gamboa.

Astrid Ferrer, University of Illinois, Feb 20 - Jul 30, to carry out a latitudinal survey of freshwater Ascomycetes, on BCI and Fortuna



Smithsonian Tropical Research Institute, Panamá

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Three STRI related papers in today's Science

The February 14th issue of *Science* brought three articles based on research done at STRI. Staff scientist Dolores Piperno (with Karen Stothert from the University of Texas at Austin) published "Phytolith evidence for early Holocene Cucurbita domestication in southeast Ecuador." Vaughn Bryant, professor and director of the Center for Ecological Archaeology at Texas A&M



University, published "Invisible clues to New World plant domestication" commenting on Piperno's work with starch and phytoliths as opening the door to the "real story" of domestication in the New World. Staff scientist William F. Laurance also published a "Technical comment" titled Comment on "determination of deforestation rates of world's humid tropical forests" with Phillip M. Fearnside from National Institute for Amazonian Research (INPA) in Brazil (p.1015).

Piperno and Stothert's paper compare phytoliths from squash fruits they found in sites on the Santa Elena peninsula in Ecuador to others in a huge reference collection, including wild and cultivated squash species collected throughout the Americas. Larger phytoliths like those found in domesticated varieties of *Cucurbita ecuadorensis*, the only cucurbit squash native to Ecuador, were clearly evident in undisturbed strata dated to 10,130 to 9320 carbon-14 years (roughly 12,000 to 10,000 calendar years ago).

Fearnside and Laurance's article challenges the results of a recent study by Italian scientist Frédéric Achard and colleagues published last year in *Science*, (297: 999-1002) in which they argued that earlier estimates of worldwide tropical deforestation and atmospheric carbon emissions were too high. They argue that the Achard study contains serious flaws that render its conclusions about greenhouse gases unreliable, and list seven serious errors or limitations of the study that collectively lead to a major underestimate of greenhouse gas emissions.

A wave of fun with the Smithsonian

STRI's Center for Marine Exhibitions at Culebra had their 2003 summer workshop "A wave of fun with the Smithsonian" from Monday 3 to Friday, 7, February. Fifteen 6-13 year-old children enjoyed the experience that included scientific and art activities and interactive games based on physical processes in oceans and seas, inhabitants of the rocky



More arrivals

Hubert Hertz, University of Wuerzburg, Germany, Feb 17 - May, 2004, to study population dynamics and host-plant selection of leaf/cutting ants, on BCI.

Departures

William F. Laurance, Feb 17 - Mar 3, to Ristock, Germany, to attend the German Society for Tropical Biology Meetings, then to Hamburg, Ulm and Paris to present seminar and consult with colleagues.

New publications

Basset, Yves, Novotny, Vojtech, Miller, Scott E., and Kitching, Roger L. 2003. "Methodological advances and limitations in canopy entomology." In Basset, Yves, Novotny, Vojtech, Miller, Scott E., and Kitching, Roger L. (Eds.), *Arthropods of tropical forests: Spatio-temporal dynamics and resource use in the canopy*: 7-16. Cambridge: Cambridge University Press.

Collin, Rachel. 2003. "Worldwide patterns in mode of development in calyptraeid gastropods." *Marine Ecology Progress Series* 247(2): 103-122.

Correa A., Mireya D. 2002. "Byrsonima crassifolia (L.) Kunth." In Vozzo, J.A. (Ed.), *Tropical tree seed manual*, Vol. 721. Washington, DC: United States Department of Agriculture Forest Service.

Dick, Christopher, Etchelecu, Gabriela, and Austerlitz, Frederic. 2003. "Pollen dispersal of tropical trees (*Dinizia excelsa*: Fabaceae) by native insects and African honeybees in pristine and fragmented Amazonian rainforest." *Molecular Ecology* 12(3): 753-764.

and sandy shores and their adaptations to tides, fish diversity and adaptations, marine turtles and how scientists learn from them; and the coral reef: its diversity and importance to many marine organisms. The workshop was carried out by biologists Argelis Ruiz and Lidia de Valencia, with the assistance of volunteers Alexander Guevara, Ana Cristina Lou y Mariana Valencia. In the photos (previous page), Anita Sam Latorraca, 6, draws her name in the sand, during a moment of relaxation. Below, Argelis Ruiz shows the students how to mark and enter data on a marine turtle, at Playa de los Cangrejos.



El Centro de Exhibiciones Marinas de STRI en Punta Culebra llevó a cabo su campamento de verano 2003 "Un oleaje de diversión con Smithsonian", del lunes 3 al viernes 7 de febrero. Quince niños entre 6 y 13 años disfrutaron de la experiencia que incluyó actividades artísticas y científicas, y juegos interactivos basados en los procesos físicos de mares y océanos, los habitantes de costas rocosas y arenosas y sus adaptaciones a las mareas, diversidad y adaptaciones de peces, las tortugas marinas y cómo aprenden los científicos sobre ellas, y el arrecife de coral: su diversidad e importancia para muchos organismos marinos que dependen de él. El taller fue llevado a cabo por las biólogas Argelis Ruiz y Lidia de Valencia, con la asistencia de los voluntarios Alexander Guevara Ruiz, Ana Cristina Lou y Mariana Valencia. En las fotos (página anterior), Anita Sam-Latorraca 6, dibuja su nombre en la playa durante un momento de descanso. Arriba, Argelis Ruiz muestra a los estudiantes cómo marcar y tomar datos de tortugas marinas en la Playa de los Cangrejos.

Un oleaje de diversión con Smithsonian



Life videoconferencing from BCI have been broadcasted into US classrooms this week. Jacalyn Willis, director of Professional Resources in Science and Mathematics at Montclair State University, and Gregory Willis presented five sessions in both English and Spanish to classes in New Jersey and Texas. The researchers have studied mammals on BCI for a month each year for the past 20 years. Students were able to talk with researchers directly from BCI about their experiences, who also answered their questions. More at rainforest.montclair.edu

More publications

Guzman, Hector M., Guevara, Carlos A., and Hernandez, Ileana C. 2003. "Reproductive cycle of two commercial species of sea cucumber (Echinodermata: Holothuroidea) from Caribbean Panama." *Marine Biology* 142(2): 271 -279.

Leigh, Jr., Egbert Giles. 2003. "Social conflict, biological ignorance, and trying to agree which species are expendable." In Kareiva, P. and Levin, S. A. (Eds.), *The importance of species: Perspectives on expendability and triage*. 239-259. Princeton and Oxford: Princeton University Press.

Ranere, Anthony J., and Cooke, Richard G. 2003. "Late glacial and early Holocene occupation of Central American tropical forests." In Mercader, Julio (Ed.), *Under the canopy*: 219-248. New Brunswick: Rutgers University Press.

Stuntz, Sabine, Simon, Ulrich, and Zotz, Gerhard. 2003. "Arthropod seasonality in tree crowns with different epiphyte loads." In Basset, Yves., Novotny, Vojtech, Miller, Scott E., and Kitching, Roger L. (Eds.), *Arthropods of tropical forests: Spatio-temporal dynamics and resource use in the canopy*: 176-188. Cambridge: Cambridge University Press.

Tyree, Melvin T. 2003. "Hydraulic limits on tree performance: transpiration, carbon gain and growth of trees." *Trees* 17(2): 95-100.

Zotz, Gerhard, Schultz, S., and Rottenberger, S. 2003. "Are tropical lowlands a marginal habitat for macrolichens? Evidence from a field study with *Parmotrema endosulphureum* in Panama." *Flora Morphology, Distribution, Functional Ecology of Plants* 197(1): 71-77.