

STRI newsletter

September 13, 1991

SMITHSONIAN TROPICAL RESEARCH INSTITUTE - Apartado 2072, Balboa, Panama

No. 37

TUPPER CENTER SEMINARS

Tuesday, September 17, noon seminar speaker will be Victor Tejeira, Universidad de Panama.

Gasterópodos de los manglares de la Caleta, el Salao y el Rompío. Aguadulce, Coclé, Panamá.

Resumen

En el manglar se registraron 27 especies y 20,419 individuos de gasterópodos. Estaban tanto en el piso como en las plantas. El sustrato de raíces, algas y charcas (*Laguncularia* y *Avicennia*) fue el más apropiado, pues tuvo 18 especies (67%) y 19,789 individuos (96.9%). *Cerithium stercusmuscarum* fue el más numeroso. Aquí *Crepidula* estuvo asociada al opérculo de *Cerithium* hasta en un 49%. El sustrato arenoso (*Rhizophora*) albergó 11 especies (41%) y 365 individuos (1.8%). *Theodoxus luteofasciatus* fue el más abundante, principalmente en el ecotono. En el piso lodoso (*Rhizophora*) hubo 10 especies (37%) y 265 individuos (1.3%). *Cerithidia valida* tuvo la mayor población, estuvo cubierta de lodo y habitó el borde externo. *Littorina* habitaba en los mangles.

Next Week

Tuesday, September 24, noon seminar speaker will be Klaus Winter, STRI.

C₃ photosynthesis, CAM: options of carbon gain in succulent plants in response to the environment

Traducción simultánea disponible.

PEOPLE

Arrivals

- Phyllis Coley and Thomas Kursar, Univ. of Utah, Sep 15-Dec 15, to work on phenotypic plasticity in the photosynthetic physiology and secondary chemistry of leaves on BCI. Also coming are assistants Lynda Sperry and Mike Tobin.
- Leeanne Tennant, Harvard University, short-term fellow, Sep 16-Nov 14, to work on the ecological and evolutionary determinants of facultative mutualisms at Fortuna and Nusagandi.



Greg Flakus (right), Voice of the Americas' correspondent for Central America, interviews Jaime Cavalier, Colombian visiting scientist, about his research on the isotopic fractioning of carbon and water by tropical forests, using the canopy crane installed at Parque Natural Metropolitano ••• Greg Flakus (derecha), corresponsal para Centroamérica de La Voz de las Américas, entrevista a Jaime Cavalier, investigador visitante colombiano, quien utiliza la grúa instalada en el Parque Natural Metropolitano, para estudiar el fraccionamiento isotópico de carbono y agua, por los bosques tropicales. (Foto: C.C. Hansen)

- Heidi Banford, Virginia Institute of Marine Science, and Christopher Tabit, Sep 16-Oct 3, to work on the systematics of the halfbeak, *Hyporhamphus unifasciatus*, from the western Atlantic and eastern Pacific.
- Randolph Arnold, SI Office of Information Resource Management, Sep 13-20, to work on the on-line catalog of the STRI Library.

Departures

- Georgina de Alba, Sep 16-20, on official business to Washington, D.C.
- George Angehr, Sep 18, back to the Liaison Office in Washington, D.C.

On Leave

- Haris Lessios, Sep 13-19.

THINGS YOU SHOULD KNOW

Upcoming Deadlines

Sep 16: Proposals for SI Women's Committee in STRI Director's Office.
Sep 20: Proposals for Scholarly Studies Program in STRI Director's Office.

Important Notice

STRI's insurance brokers, *Especialistas en Seguros, S.A.*, informed us that beginning August 1st, 1991 the insurance premiums for the IS Canal group insurance policy has gone up. New rates are \$16 biweekly for single persons and \$49.50 biweekly for the family plan. Persons who subscribed to IS Canal before August 1st will not be affected. The hospitalization plan for IS Canal continues to cover 100% for accidents, \$75 for hospitalization deposit, and will pay 100% of hospitalization, as long as patients have received a second opinion.

Supervisors should be aware that the STRI policy is to continue using the IS Canal Plan for contract workers, and should take the new costs into account when planning to hire new contract workers in FY1992.

Anuncio Importante

Especialistas en Seguros, S.A., corredores de seguros del STRI, anunciaron que, a partir del 1ro de agosto de 1991, las primas de la póliza del grupo IS Canal aumentaron para toda persona que entre en el plan a partir de esta fecha. El costo de las primas por empleado sólo es de \$16 cada dos semanas y el plan familiar es de \$49.50.

Aquellos suscritos a IS Canal antes del 1ro de agosto no sufrirán aumentos en las primas de seguro de hospitalización. El plan de hospitalización de IS Canal continuará cubriendo 100% por accidentes, \$75 por depósito de hospitalización y 100% por hospitalización, siempre y cuando los pacientes hayan recibido una segunda opinión antes de la hospitalización.

Se les avisa a los supervisores que la Administración ha decidido continuar usando el Plan IS Canal para los contratistas, y deberán tomar en consideración este aumento en las primas al momento de contratar personal en el año fiscal 1992.

POSITION AVAILABLE**Marine Laboratory Manager**

Selected candidate will be responsible for the management and day-to-day operations of a marine laboratory near Colon. Duties include diving and boat operations, maintaining supplies, housing, general maintenance and repairs, and radio communications. Excellent interpersonal skills and experience at supervision are necessary. It is desirable for applicants to have a combination of administrative, professional, mechanical and biological experience. **Basic requirements:** Bilingual (English-Spanish); experience with the handling and routine maintenance of small boats and outboard engines; should be certified to Scuba dive; must have experience in facilities management and knowledge and interest about marine activities. This a temporary position until March 1992; pending funding, the appointment may be extended. Salary

according to qualifications and experience. Applications must be received by Friday, September 20, 1991. Mail *Curriculum vitae* with references to: Apartado 3353 Balboa, Panamá, R.P.

ANNOUNCEMENTS**At Tupper Center**

Wed, Sep 18, Meeting: *Amigos de la Biblioteca Nacional.*

Thu, Sep 19, Academia Panameña de Medicina Seminar: *Transplante de Organos.*

Tropical Biology: An Ecological Approach #92-1

The OTS courses are intensive, field-oriented programs that emphasize research training. This course will be conducted in Costa Rica where OTS maintains field stations in a lowland rainforest (La Selva), a deciduous dry forest (Palo Verde), and wet mid-montane environment (Las Cruces).

Application files closing date is October 1, 1991. The announcements of selections will be on November 15, 1991.

Applicants must be enrolled in, or accepted for, a graduate college program. Selection of participants is highly competitive; enrollment is limited to approximately 22 students.

Course fee is \$1,000 for OTS member's students and \$3,000 for non-OTS member students. Transportation to Costa Rica is not included. A processing fee of \$10 must accompany the completed application. The course fee covers room, board and field travel during the course, and must be paid prior to the course.

The course is designed for students in the early stages of graduate study who seek an in-depth introduction to the principles of ecology as they operate in the tropics. After orientation and introductory lectures in San Jose, the class operates almost entirely in the field, spending from two to ten days at each of six contrasting tropical sites - marine as well as terrestrial.

The schedule at each site includes: orientation on the area and its biota with visiting specialists; several days of group oriented field problems to generate ecological information and to illustrate methods of study useful in the tropics; opportunities for independent research to test further new methods and ideas; evening discussions and lectures on theory and natural history. The bus stops at points of special interest during the travel to and from the field sites. The final days of the course are reserved for completing research reports, summary seminars and final exam.

Post-course awards are available for a limited number of students to conduct pilot studies of potentially fruitful research projects. Support covers subsistence and

transportation to field sites in Costa Rica for periods up to several months. Participants are identified by the course coordinator, and the selection is based on the scientific merit of the proposal, its logistic feasibility, and compatibility with other projects being conducted at the field sites. Careful consideration should be given to developing research projects prior to arriving in Costa Rica.

RESEARCH UPDATE

Paleoecology Center at STRI

by Gretchen Sotomayor

"They have for their nourishment also much maize, which is a certain grain that grows like miglio (sorghum), in a spike or ear, from which they make white and red wine, as beer is made in England..."

—from the journals of 14-year-old Ferdinand Columbus, who noted an abundance of maize fields upon his arrival in Panama 500 years ago.

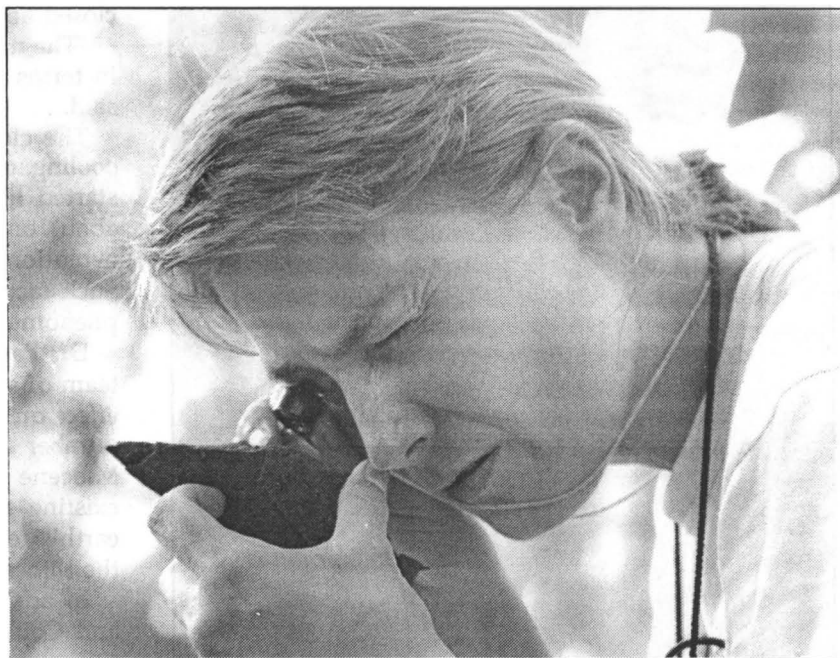
The journals of Christopher Columbus' son Ferdinand paint vivid images for scientists interested in the ways of life and environments that thrived and supported Panama's inhabitants five centuries earlier.

But STRI scientists looking for a more specific vision of these corn fields and their cultivators are finding it through fossils.

Fossils retrieved during the last decade by STRI scientists show that tropical rainforests were cut by indigenous tribes that planted crops of maize, as early as 7,000 years ago. Fossils also support the theory that the Atlantic and Pacific oceans were once one ocean before the Isthmus of Panama formed.

STRI scientists conducting paleoecological and archaeological research in tropical regions such as Panama and Costa Rica stress the importance of understanding the past so its lessons can be applied toward the future.

"It's time perspective—that's what we have to offer," said STRI marine scientist Dr. Jeremy Jackson.



Dr. Laurel Collins

(Photo: C.C. Hansen)

Because their research has revealed some startling glimpses into this region's biological and geological history, scientists want to expand their research efforts. A major step in supporting expansion in research is underway at STRI through the creation of a Center for Tropical Paleoecology and Archaeology.

The center, partially funded by a \$250,000 Mellon Foundation grant and awards from the National Science Foundation, is the first multidisciplinary facility for paleoecological and archaeological investigations related to support and promote research of past biological, ecological and cultural events in the tropical region of the New and Old Worlds, according to STRI archaeologist Dr. Dolores Piperno. Piperno, Jackson and archaeologist Dr. Richard Cooke worked together in initiating the center's establishment.

Though an actual facility for the center won't be available for another year or so, most of the scientists involved in the project are already living in Panama and can begin collaborating, Piperno said.

The center is considered unique because it unites scientists whose varying skills and interests are "traditionally separated by academic custom, but essential for overall understanding of past events," according to Piperno.

Scientists such as Jackson, Piperno, Cooke and STRI's Deputy Director Anthony Coates, who study history at different ends of a 15-million-year timeline, share a common goal in charting history in poorly researched tropical regions.

Piperno and Cooke study the evolution of human settlement and subsistence in the tropics during the last 20,000 years. Piperno has uncovered evidence that indigenous peoples cleared the tropical forests and planted crops of maize within the last 7,000 years.

"The older belief that tropical climates were a stable and unchanging feature... has been refuted, and archaeologists now recognize the



Dr. Jeremy Jackson

(Photo: C. C. Hansen)

importance and influence of people who lived in tropical forests to advances in New World cultural development," Piperno stated in written conclusions.

For example, many plants, including maize, manioc and sweet potato, were domesticated and developed in the tropical forests of Central and South America well before the Christian era, according to Piperno.

At the other end of the spectrum, Jeremy Jackson and Anthony Coates study the evolution of marine life that thrived millions of years ago when the oceans of the Atlantic and Pacific were one. By examining fossilized soils and organisms, they are trying to determine when the Isthmus of Panama formed, creating two oceans and unique species in each ocean. Through their research, they hope to provide a sufficient fossil record that could be coupled with the work of geneticists and microbiologists.

"I'm interested in how the history of life can help us with what is going on now," Jackson said.

When the isthmus actually formed is a fairly controversial question, but Jackson believes that it finally

closed about 3.5 million years ago.

"The numbers and kind of species in the sea changed in terms of long-term environmental change," Jackson said.

The closing of the isthmus coupled with a gradual cooling of the earth's temperature, believed to have started long before the advance of the recent ice age about one million years ago, were significant in the evolution and extinction of several species, he added. Such factors illustrate that global change is not a new phenomenon, Jackson said.

Dr. Paul Colinvaux, also a member of the center's team of scientists, studies the era of the ice age and its effect on climates. For example, it is believed that the number of species living before the ice age, in the Miocene period, was double the number of those existing today. This could be partly attributed to the earth's temperature, which has cooled markedly since the Miocene, Jackson said.

In addition to Piperno, Jackson, Coates, Colinvaux and Cooke, the team of scientists collaborating at the new center include in-residence post-doctoral fellows Dr. Mark Bush, Dr. John Jones and Dr. Lisa Keilhofer. Dr. Laurel Collins, a post-doctoral fellow in residence at the University of Michigan, will also contribute to the center's research ♣

Announcement Regarding Pipeline Road

Some users of Pipeline Road have reported that erosion has produced a large sinkhole on the road just before Limbo Hunt Club. The hole extends halfway across the width of the road and is a hazard for approaching vehicles when there is poor visibility. Road repairs may take some time, so users are urged to exercise caution, especially after heavy rains.



From: *365 Ways to Save our Planet*

• *Page-a-Day Calendar* •

Cooking in your oven is less energy-intensive than using the burners. Cook several dishes in the oven at the same time; thaw foods (covered) before you put them in; use glass or ceramic pots, which let you lower the heat 25°F, and turn the oven off 15 minutes before the food is done.