Abstract: Crassulacean Acid Metabolism (CAM) is one of three known pathways by which plants fix atmospheric carbon dioxide. Due to its associated high water use efficiency, CAM is advantageous in places where plants are subject to considerable periodic water stress, such as in arid regions and the phytic niche in forests. However, the evaluation of hypotheses regarding the evolution of CAM has been hampered by the lack of detailed phylogenetic information on families which contain CAM plants. Our molecular systematic work on the important neotropical family Bromeliaceae together with our family-wide survey for the expression of CAM has provided insights into possible evolutionary origins of the photosynthetic mechanism, suggesting at least three independent origins in bromeliads. Interestingly, our data are consistent with the notion that CAM confers an important advantage on epiphytes but suggest that it is not the key innovation for epiphytism. Rather, the bromeliad epidermal trichome, which in epiphytic species is capable of water and nutrient uptake, appears to be more closely tied to the evolution of the epiphytic life form in Bromeliaceae.

**Tupper Seminar**

**Tuesday, October 5, Tupper Seminar speaker will be Darren Crayn, STRI Mellon Postdoctoral Fellow**

**Bammi Seminar**

**Thursday, October 7**

Bammi seminar speaker will be Robert Stallard from the U.S. Geological Survey will talk about:

*Abiotic factors and the frog die-off in Eastern Puerto Rico*

Reservations are essential. Please call BCI at 272-2124 or email: Bammi

**Arrivals**

- **Toby Bolton**, University of South Florida, Oct 3-Nov 3, 1999, to study the role of physical stresses in the evolution of gametes characteristics, at Naos.

- **Phyllis Coley**, University of Utah, Oct 6-Dec 23, 1999, to work with Thomas Kursar in the deterrence of fungi and herbivores in young leaves with different developmental patterns, on BCI.

- **Ahn-Heum Eom**, Mellon post doctoral fellow form Kansas State University, Oct 2-Dec 21, 1999, to work with Allen Herre in mycorrhizal of BCI.

- **Marianne Jensen**, University of Odense, Denmark, Oct 4-20, 1999, to work with Anne Surlslykke in the intensity of bat sonar signals and hearing sensitivity of their insect prey, moths.

- **Nancy Knowlton**, Oct 3-22, 1999, returning to Panama to continue research at STRI.

**Departures**

- **Eldredge Birmingham**, Oct 4-16, 1999, to Monterrey, Mexico, to attend the VI Neotropical Ornithological Conference; to Miami, to consult with colleagues and work on manuscript; and to Philadelphia to attend Irby Lovette’s PhD defense and present a seminar.

- **Richard Cooke**, Oct 7-21, 1999, to Washington DC, to present a seminar at a symposium: Gold and Power in Ancient Costa Rica, Panama, and Colombia, then to Mexico to visit the Universiad...
Autónoma de México, the Museo Antropológico, and visit historical sites and consult with Mexican colleagues.


Ira Rubinoff, Oct 6-24, 1999, to Washington DC, to attend meetings with officials at the SI and to participate in the Panama Week activities, including the visit by President Mireya Moscoso.

WEB SITE LINKS
Please notice change of address:
Fundación Smithsonian
www.fundsmithsonianpa.org

Naos Fax Lines
Please be informed that our fax lines are back in service which are:
228-0516 and 228-0980.
Les informamos que nuestras líneas de fax ya han sido rehabilitadas las cuales son: 228-0516 y la 228-0980.

New Appointment
Luis Mou has been selected as the scientific coordinator for STRI’s Bocas del Toro Station.
Luis, a resident and native of Bocas, will assume his responsibilities on October 1st.
Luis has a BS in Biology from UNAM, Mexico and a Msc in management of natural resources from CATIE, Costa Rica. He comes to STRI from ANAM where he has worked in various capacities since 1988.
The Scientific Coordinator position subsumes the responsibilities of the Station Manager, Severino Palma. As Severino is leaving STRI, we would like to wish him all the best in the future and thank him for his work in managing the station through its initial year of operation.

Announcement from Facilities Management
Beginning Oct. 1st, SATSA will be the new janitorial services company. Some of the former janitors will remain working with the new company. We request everyone’s cooperation during the transition time.
Any comments, please call Dora Justo, 212-8077.

Charla sobre "Los Servicios Informativos en la Era Digital"
La Florida State University-Panamá invita a todos los interesados a participar en la charla "Los Servicios Informativos en la Era Digital" por la Dra. Jane Robbins, decana de la Escuela de Estudios de información de la Florida State University.
La charla tendrá lugar a las 10:00 am, del día lunes 11 de octubre, en la sede de FSU-Panamá en La Boca.

Unusual Scholarships and Fellowships
The Garden Club of America encourages college and graduate students, doctoral candidates and recent Ph.D.s, as well as landscape architects, to consider its wide range of excellent and unusual scholarships and fellowships.

They include:
• landscape architecture in Great Britain.
• a grant to enable study in medicinal botany.
• awards in tropical botan; Ph.D. candidates to pursue independent field study.
• a grant for graduate students to conduct field research on the biology and management of rare flora.
• scholarships for college students who wish to take summer courses in environmental studies.
For further GCA Scholarship and Fellowship information, or to request an application, send self-addressed stamped envelope to:

Scholarship Committee
The Garden Club of America
14 East 60th Street
New York, New York 10022
Phone: (212) 753-8297
Fax: (212) 753-0134
Web site: www.gcamerica.org

Miscellaneous
Car for sale,
Daewood, mod. Espero 93, dark gray, in perfect conditions. a/c, electric mirrors, electric lock, ~70000 km, must be seen. $ 5,300.00 negociable. please call Ralf Kersanach, tel. 263-1092.
Se vende, Daewood, mod. Espero año 93, gris, en perfectas condiciones. Con a/c, ventanas eléctricas, espejos eléctricos, cerraduras eléctricas. ~70000 km. $ 5,300.00 negociables. Interesados llamar a Ralf Kersanach al 263-1092.

I Caminata/Maratón
Susie Thayer
A beneficio de la Fundación Pro-Enfermos con Cáncer. Tel. 227-0900
Día: Domingo, 3 de octubre, 15
Hora: 7:30 am
Lugar: American Airlines, Ave. Balboa