

# STRI newsletter

October 22, 1993

SMITHSONIAN TROPICAL RESEARCH INSTITUTE - Apartado 2072, Balboa, Panamá

No. 43

## TUPPER CENTER SEMINARS

Mon, Oct 25, noon seminar speaker will be Bill Wcislo, Animal Behavior Candidate from Cornell University

*Behavior of Learned Recognition in Relation to Social and Sexual Behavior in Sweat Bees*

### Abstract

Experiments using sweat bees show that learned behaviors which are important for social integration have precursors in "solitary" contexts. Their occurrence in some lineages may relate to broad patterns of social evolution.

Thu, Oct 28, noon seminar speaker will be Ethan J. Temeles, Animal Behavior Candidate from the National Zoological Park at SI

*Hummingbirds, flowers, and behavioral mechanism of coevolution*

### Abstract

The relationship between bills of hummingbirds and the sizes and shapes of the flowers they visit is considered a classic example of coevolution. However, many of these birds frequently visit flowers with floral tubes longer or shorter than their bills. Foraging visits of this sort seem to weaken the case for coadaptation. I examine this problem through studies of the effect of flower morphology on hummingbird foraging behavior, and conversely, the effect of hummingbird foraging behavior on flower morphology and mechanisms of pollen transfer.

## Next Week

- Mon, Nov 1, noon seminar speaker will be Heather Proctor, Animal Behavior Candidate: *Trembling Males and Grasping Females - Male Water Mites Capitalize on Female Adaptations for Predation.*
- Tue, Nov 2, seminar speaker will be Lisa Kealhofer, STRI postdoctoral fellow: *Holocene Environments and Cultural Impact: The Phytolith Evidence from Central Thailand*, 5:30pm.



Stanley Heckadon Moreno and Maria Magela Brenes presented a copy of book "Agenda Ecológica y Social para Bocas del Toro", edited by Heckadon, to Angel González, Director of Promar, during the formal presentation of the book, at the Tupper Center Auditorium on Monday, October 18.

(Foto: M.A. Guerra)

- Thursday, November 4, noon seminar speaker will be David B. McDonald, Animal Behavior Candidate from the University of Florida: *Male-male Cooperation in a Manakin: Genetic and Behavioral Results.*

## BAMBI

Thu, Oct 28, Bambi speaker will be Claudio Carrasco, 7:30pm  
*"Entre Volcanes y Lagos del Sur de Chile"*

For transportation arrangements, please call BCI.

## PEOPLE

### Arrivals

- Seigo Higashi, Kyohsuke Ohkawara and Takahiro Murakimi, Hokkaido University, Japan, Oct 21-10 Dec, to conduct sociobiological studies of Neotropical social insects, on BCI.
- Lucy Dorick, Oct 24-30, to meet with staff to discuss plans for the production of the STRI brochure, and funding issues.

### Departures

- Anthony Coates, Oct 24-29, to Boston MA, to attend the meetings of the Geological Society of America.

- Jeremy Jackson, Oct 25-7 Nov, to London, to attend meetings of the Royal Society of London, then to Key West, Florida, to attend the NSF "Scope" Workshop.
- Richard Condit, Oct 29-13 Nov, to Singapore, Indonesia and Malaysia to consult with colleagues on the CTPS.

## THINGS YOU SHOULD KNOW

### At the Tupper Center

- Mon, Oct 25 Noon seminar by Bill Wcislo, animal behavior candidate from Cornell University, Auditorium.
- Thu, Oct 28 Noon seminar by Ethan J. Temeles, animal behavior candidate from the National Zoological Park at SI, Auditorium.

### At the Culebra Marine Reserve

- Tue, Oct 26 *Escuela Berta T. Duncan*, Chorrillo, 8:30-11:30am.
- Wed, Oct 27 *Instituto Rubiano*, 8:30-11:30am.
- Thu, Oct 28 *Instituto Rubiano*, 8:30-11:30am.
- Fri, Oct 29 *Escuela Manuel Urbano Ayarza*, 8:30-11:30am.
- Sat, Oct 30 *Universidad Santa María*, 9:30-12noon.

## ANNOUNCEMENTS

### Biological Sciences Technician

#### *Técnico en Biología*

The Office of Human Resources will receive applications for the position of Biological Sciences Technician to assist in field and laboratory work on studies of the population and reproductive biology of tropical reef fishes. Essential requirement: BS in Marine Biology (or equivalent). Also, SCUBA certification and experience, computer knowledge, and availability to work about one week every month at the San Blas station. This is a permanent federal position, GS-5. Send curriculum vitae with recent references to the Office of Human Resources, Tivoli. Applications will be accepted until November 15. For more information, please consult your facility bulletin board ••• *La Oficina de Recursos Humanos recibirá solicitudes para la posición de Técnico en Biología para asistir en el trabajo de campo y de laboratorio relacionado con los estudios de población y reproducción biológica de peces de arrecife tropical. Requisito esencial: Licenciatura en Biología Marina (o título equivalente). Además, certificación y experiencia en buceo SCUBA, conocimiento en computadoras, y disposición para trabajar una semana cada mes en San Blas. Esta es una posición federal permanente, GS-5. Enviar curriculum vitae con referencias recientes a*

*la Oficina de Recursos Humanos en Tivoli. Para mayor información, consulte el tablero de anuncios de cada lugar de trabajo en STRI.*

### Docentes para el Centro Marino



El Instituto Smithsonian de Investigaciones Tropicales promueve y apoya investigaciones básicas sobre los ambientes tropicales terrestres y marinos. Para transmitirle al público información proveniente de nuestras investigaciones y despertar mayor respeto por los recursos naturales marino, STRI ha comenzado un programa que estimula el aprendizaje, la exploración y la comprensión de los ecosistemas costeros. Las visitas educativas requieren una intraducción especial e interpretación del medio ambiente. Para realizar nuestro programa, necesitamos personas con entusiasmo, interés y conocimientos, comprometidos a trabajar como docentes o intérpretes del medio ambiente. Si Ud. está interesado en trabajar como docente en el Centro de Exhibiciones Marinas de STRI en la Reserva Biológica de Culebra, agradeceríamos que llene una solicitud antes del 30 de octubre. Los aplicantes seleccionados serán notificados para participar en un curso de entrenamiento de dos días a celebrarse en el mes de noviembre y recibirá una subvención por sus servicios. Los aplicantes deberán llenar los siguientes requisitos: Poseer algún entrenamiento en biología (preferiblemente biología marina); tener interés en trabajar con público, especialmente estudiantes; estar disponible para trabajar al menos una mañana a la semana (preferiblemente varias mañanas (incluyendo sábados) 7:30-12:00; ser bilingüe (inglés-español); gustarle trabajar en el campo; ser flexible y creativo. Favor pasar por la Oficina de Educación de STRI, de 8:30 a 5:00, lunes a viernes.

### Request for Proposals

The Nature Conservancy has created the Ecosystem Research Program, to initiate and carry out research to understand how ecosystems, that are targeted for conservation, function; to cultivate and maintain working relationships with research partners, especially in the academic community; to effectively communicate knowledge regarding ecosystems within and outside of the Nature Conservancy; to enhance the role and stature of the Conservancy's science program, especially with regard to research, and to provide for permanent ecosystem research funding. The Ecosystem Research Program will fund long-term research into how ecosystems function, but short-term research into ecosystem function and process are also encouraged. Although

requests of any size are encouraged and will be considered, it is anticipated that the initial program will fund between 20 (mean project cost: \$300,000; mean request to Home Office: \$150,000) and 30 (mean project cost \$200,000; mean request to Home Office: \$100,000) programs. For information on the kind of projects that will be funded, the process and schedule for funding, the pre-proposal process, and the full proposal and grant management processes, please consult the STRI Office of Education, Tupper Center.

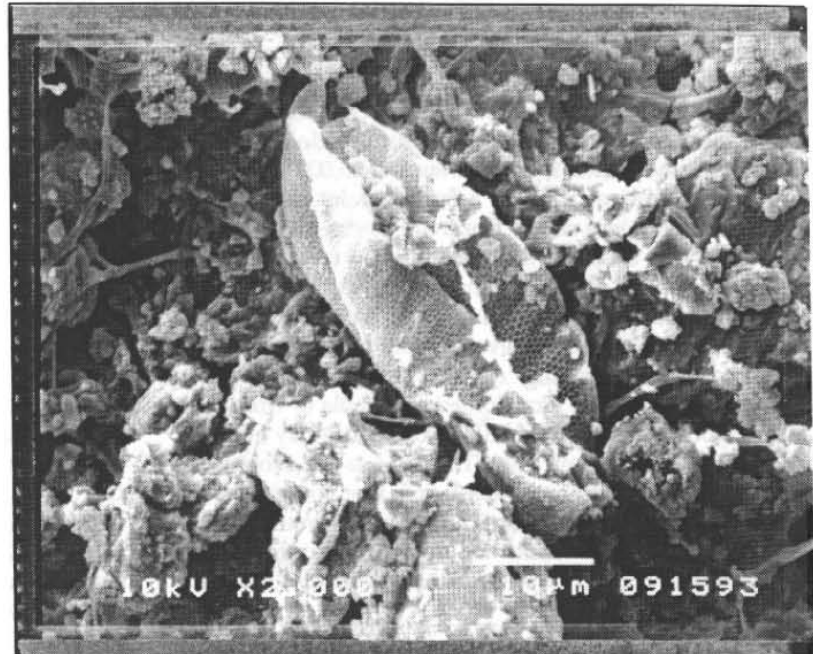
### **Boletín "Mejoramiento Genético y Semillas Forestales"**

En los países de la región, se han venido realizando investigaciones y trabajos prácticos en genética y semillas forestales. Sin embargo, gran parte de esta experiencia no ha sido divulgada efectivamente, lo que lleva a una duplicación de los esfuerzos. Al mismo tiempo, muchos de los conocimientos generados no ha sido utilizados por los beneficiarios. Reconociendo este problema, el Proyecto Mejoramiento Genético Forestal del CATIE, inició, en 1987, la publicación del Noticiero "Mejoramiento Genético y Semillas Forestales para América Central". Actualmente, el CATIE, con el auspicio de la Administración para el Desarrollo en Ultramar, el Gobierno Británico y la Agencia Danesa para el Desarrollo del Gobierno de Dinamarca, han decidido reactivar el boletín mejorando su contenido y presentación y ampliando su distribución al Caribe. Interesados en colaborar con artículos e informaciones pueden enviar sus materiales a: Boletín Mejoramiento Genético y Semillas Forestales, Area de Recursos Genéticos Forestales, CATIE 7170, Turrialba, Costa Rica. Tel-fax: (506)56-1933 - Fax (506)56-1533. Para suscribirse mande una carta, fax etc, indicando nombre y apellidos, institución, programa y proyecto, cargo o título, dirección y país. La suscripción es gratuita.

### **STRI's Scanning Electron Microscope**

by John G. Jones

STRI has recently purchased a scanning electron microscope, available for general



*Livistonia* sp. (Chinese Fan Palm) pollen grain adhering to the surface of a Ming Dynasty Chinese cash coin. This and other microfossils on the coin surface indicate the coin, part of a hoard from an undisclosed location, was actually from somewhere in southern China (Coated specimen in high vacuum 2000x).

scientific use. This scope, housed in room 223 of the Tupper facility, is a JEOL model 5300LV SEM. The scope has a number of features making it the ideal all-around tool for general scientific microscopy. While most applications will employ the high-vacuum mode of examination, this scope also has the capability of examining materials under low-vacuum.

The two modes differ as follows. For high-vacuum microscopy, the specimen is first plated with a thin coating of gold/palladium (apparatus is available in the SEM room). This step is necessary to increase conductivity of the material, and to lessen the build-up of charged particles on the subject surface. The sample is then placed in the specimen chamber of the scope, and nearly all of the air is evacuated from the column and the chamber. This (secondary electron imagery) is the most effective way to examine the surface of most specimens. Effective magnifications range from 15x - 100,000x. Samples examined in this manner must be thoroughly desiccated before coating and examination.

The low-vacuum feature, on the other hand, employs the use of backscatter electron imagery. Here, only the scope column is evacuated to a high vacuum - the chamber remains only partially evacuated. In this mode, moist samples can be examined (ie partially dried plant or animal tissue, unprepared samples, etc). This mode does not require that the sample be coated with a conductive material, and charged particles are controlled by varying the air pressure within the chamber. Magnification and resolution, as expected, are more limited with this mode. Never the

less, with moist samples, as well as samples which cannot be damaged (or coated) during examination, such as archaeological items, this mode of operation may be necessary. We have had good success examining textiles and ancient coins using the low-vacuum mode. Magnification is usually limited to a maximum of 15,000 - 20,000X.

Also available at STRI is a critical point drier, where biological specimens can be frozen (or freeze-dried) in their original shape enabling the researcher to examine micro-features normally altered during natural desiccation.

STRI has hired, on a part-time basis, Jorge Ceballos as a technician. Jorge has had several years of experience with this and other scanning electron microscopes both in Panama and in Costa Rica. Jorge is available to work with you or your materials from 5:00-9:00 PM Tuesday evenings and 9:00-5:00 Saturday. The STRI SEM is available to all researchers free of charge. We ask only that you pay for the cost of film (2.50 per exposure), and schedule your appointments at least two weeks in advance. To schedule an appointment, contact John G. Jones at Tupper - extension 292.

## CONGRESS

### 24th International Ethological Congress

The 24th International Ethological Congress will be held in Honolulu, Hawaii, from August 10-17, 1995. The conference is open to all who are interested in Ethology and allied fields and is sponsored by the University of Hawaii. Organization of the scientific content of the conference is undertaken by the Local Organizing Committee with help from the Scientific Committee. Travel, hotel and logistic arrangement are made by the professional conference organizers, Travel Planners, Inc. For more information contact Conference Secretariat, Travel Planners, Inc. Suite 150, GPM Building, San Antonio, Texas 78216-5674. Phone: (210) 341-8131. Fax: (210) 341-5252.

## TRAINING OPPORTUNITIES

### Graduate Research Assistantships

The Center for Environmental and Estuarine Studies offers graduate research assistantships leading to the M.S. in Wildlife at the Frostburg State University/Appalachian Environmental Laboratory, Center for Environmental and Estuarine Studies Comparative Program. The successful applicant will assist with a radiotelemetry study of the spatial ecology of Brown-headed Cowbirds on state forest lands in the Appalachian Mountains of western Maryland. The research will focus on the relationship of powerline corridors and their manage-

ment to cowbird spatial ecology. We will identify breeding, foraging, and roosting areas, daily movement patterns, and home ranges. A GIS will be used to assess the importance of different land use/cover types and their spatial arrangement to habitat occupancy by cowbirds. Bird censuses will corroborate whether cowbirds are associated with high host density. Qualifications: B.S. in wildlife, ecology or biological sciences. Min. GPA 3.0. Training and/or experience in ornithology and bird identification (sight and sound). Previous experience with radiotelemetry, Geographic Information Systems (pcARC/INFO/MIPS), and habitat analyses desirable. To start Jan 24, 1994. Stipend: \$10,500 a year, plus full tuition waiver. During the field season, housing will be provided. Interested must submit a letter describing experience, professional aspirations, and interest, CV, copies of academic transcripts, GRE scores and three letters of recommendation, by Nov 15, 1993, to: Dr. J. Edward Gates, Appalachian Environmental Laboratory, Center for Environmental and Estuarine Studies, The University of Maryland System, Frostburg, MD 21532. For direct inquiries call Dr. Gates at (301) 689-3115.

## MISCELLANEOUS

### Needs a Car

Jay Schneider needs to buy a car, automatic transmission, preferably a Japanese, for \$1500 to \$2000. Call at 62-4098, after working hours.

### For Sale

Mitsubishi Tredia 1984, 4door, manual transmission, excellent condition. Needs paint. \$3,000 o.b.o. Call Lisa Kealhofer at 62-3828, after working hours.

### STRI Telephone Directory

If you have a last-minute correction or addition for the STRI telephone directory, please send it to Maria Luz Calderón, Office of Education, Tupper Center.

### New Arrival

Congratulations to Hector Guzmán and Irene Holst, for the birth of their daughter Carolina, on October 7.

### Embera Carvings and Baskets

Open house on Oct 23, Saturday morning, at Lizzy Leigh's for beautiful Embera carvings and baskets. To see the art any other day, call Lizzy at 56-6361.

### Contributions to the STRI Newsletter

If you wish to publish short articles in the Newsletter, please submit manuscript and negative of photo (if applicable) to Maria Luz Calderón, Office of Education.