



Students visiting Culebra Biological Reserve were introduced to one of the many coastal habitats of Panama. Cindy Martin, Argelis Guevara and Arcadio Rodaniche are developing this new marine educational program at Culebra Point near the Naos Laboratories. (Photo: M.A. Guerra)



During their visit to STRI in June, SI regent James Woolsey (left) and Glenn, Mercedes, Hans and Thomas Tupper (center) were briefed by John Tobin about his research on BCI. (Photo: A. Caballero)

STRI obtained the use of the Gamboa School from the U.S. Army. The school will be used for educational purposes. (Photo: M.A. Guerra)



The Twenty-Fifth Annual and Anniversary Meeting of the Association of Marine Laboratories of the Caribbean was held at the Earl S. Tupper Center, STRI, from August 17-22. The event was organized by John Christy. (Photo: M.A. Guerra)



On July 23, Kuna Caciques and STRI signed the new agreement for the continuation of STRI research activities in San Blas, at the Tupper Center. (Photo: A. Caballero)



STRI and the University of Panama initiated a joint seminar series this year. Jeremy Jackson presented his talk at the University of Panama in December. (Photo: A. Montaner)

STRI newsletter

January 1, 1993

SMITHSONIAN TROPICAL RESEARCH INSTITUTE - Apartado 2072, Balboa, Panamá

No. 1

TUPPER CENTER SEMINARS

Tuesday, Jan 5, noon seminar speaker will be Michael Greenfield, University of Kansas.

Cooperation and Conflict in the Evolution of Acoustic Signal Interactions

Abstract

In many animal species that use sound or bioluminescence for sexual communication, males precisely time their advertisement signals with respect to those of their neighbors. In acoustic animals, particularly insects and anurans, choruses of alternating or synchronizing individuals are thus generated. Prior adaptive explanations for alternation and synchrony are that these phenomena result from cooperative individuals 1) maintaining "time windows" for broadcasting their signals, 2) preserving species-specific rhythms, 3) minimizing risks from predation, or 4) maximizing the peak signal amplitude of a local group. Based on studies on acoustic orthopterans in North American deserts and in Central America, I now propose a non-synchrony may arise as incidental byproducts of elementary competitive interactions, which in some cases actually involve mutual signal "jamming". While initially unexpected, this last interpretation is supported by both experimental studies and evolutionary models.

Next Week Evening Seminar

On Tue, Jan 12 at 5:30 pm, staff lecturer will be Jeremy B.C. Jackson.

Patterns in the Marine Fossil Record of the Last 10 Million Years in Tropical America

BAMBI

On Thursday, Jan 7, Bambi speaker will be John Bishop, University of Alaska.

A Comparison of Thermoregulatory Capabilities of Tropical and Subarctic Bees: The Influence of Size and Wing Loading

For transportation arrangements, please call BCI.



At the Tupper Center Auditorium, from Dec 15-17, Jim Miller, U.S. Office of the Occupational Safety and Health Administration gave a 3-day course on laboratory safety and health to lab staff assistants and technicians ••• Jim Miller, de la Oficina de Seguridad y Salud Laboral de los Estados Unidos, ofreció un curso sobre seguridad y salud en los laboratorios, a personal y asistentes de laboratorios del STRI, del 15-17 de diciembre, en el Auditorio del Centro Tupper. (Foto: A. Caballero)

PEOPLE

Arrivals

- Steven Emlen, Cornell U. Jan 1-Jun 30, 1994, to continue studies on the social behavior of *Jacana*, at Gamboa until Jun 30; to bring a field course (Jan 11-22), and on sabbatical at STRI until Jun 30, 1994.
- Natalie Demong and Peter Wrege, Jan 1-Jun 30, to work with Steven Emlen in the *Jacana* research.
- Martyn Caldwell, Utah State University, Jan 2-11, to study the effects of tropical solar UV-B in gap environments, at BCI.
- Stephen Flint, Jan 2-11, to work with Martyn Caldwell.
- Melvin Tyree, University of Vermont, Jan 4-29, to follow up on the research in the evolution and structure of terrestrial ecosystems.

Departures

- Juan Carlos Roqueiro, Naos Shop, to Cincinnati, Ohio, to receive training on the maintenance of specialized scientific equipment at So-Low Co. from Jan 11-14 and then on vacation in New York until Jan 18.

ANNOUNCEMENTS

New Schedule for Cashier ••• Nuevo Horario de la Cajera

Starting Jan 1993, the STRI cashier, America Staff, will open to the public from 8 to 12 noon and from 1-2pm ••• A partir de enero de 1993, el horario de América Staff, cajera del STRI será de 8-12 en la mañana y de 1-2 en la tarde.

From the Security Office**De la Oficina de Seguridad**

On November 20, Oswaldo Fernandez, director of the Panamanian National Police, visited the Barro Colorado Nature Monument (BCNM) with Major Ricardo Guardia, chief of the Canal Area Police and Capt. Ida de García, chief of Police of the Canal Watershed. Elena Lombardo, Leonor Motta and staff from the Security Office accompanied the visitors. The objective of the visit was to acquaint these officials with STRI's research and protection activities in the BCNM and adjacent areas. As a result of Mr. Fernandez evaluation of the Forestry Police's support to STRI, two additional members of the police were assigned to the BCNM ••• El 20 de noviembre pasado, el director de la Policía Nacional, Lic. Oswaldo Fernández visitó el Monumento Natural de Barro Colorado (MNBC) en compañía del jefe de la Policía del Área Canalera, Mayor Ricardo Guardia y la jefa de la Policía para la Protección de la Cuenca Hidrográfica del Canal, Cap. Ida de García. El grupo fue atendido por Elena Lombardo, Leonor Motta y el personal de la Oficina de Seguridad y de Barro Colorado. El objetivo principal de esta visita fue el de familiarizarse con las labores de investigación y protección que STRI desarrolla en el MNBC y áreas circundantes. Como resultado de la evaluación que realizara el Lic. Fernández sobre el apoyo que nos brinda la Policía Forestal, dos nuevos miembros fueron asignados a la protección del monumento.

Behavior Discussion Group

The first Behavior Discussion Group meeting in the new year will be on Tue, Jan 12, from 12 noon to 2pm, at the Tupper Meeting Room. Andrew Martin, 3-year postdoctoral fellow at STRI, will host a discussion based on the following article by L.D. Hurst: "Parasite Diversity and the Evolution of Diploidy, Multicellularity and Anisogamy." *Journal of Theoretical Biology* 144: 429-443. Copies of this article will be made available on BCI (Lounge), Gamboa (Bldg. 183), Tupper Center (Lounge) and Naos. Anybody interested in ordering a sub-sandwich to eat during the meeting should contact Ursula Schober at Naos by Monday, Jan 11.

At Tupper Center

- Tue, Jan 5 First meeting for upcoming "PEP", 9-11 am, Small Meeting Room.
Seminar by Michael Greenfield, 11am-1pm, Auditorium.
NATURA, 12 noon-4pm, Small Meeting Room.
- Thu, Jan 7 Conferencia de las Americas-WPO, 9-10:30am, Small Meeting Room.

POSICION DISPONIBLE**Secretaria, Oficina del Director**

Posición temporal, federal, hasta septiembre de 1993, con un grado GS 04/0318 y un salario de \$16,393 anual.

Interesadas favor de enviar un *curriculum vitae* reciente a la Oficina de Recursos Humanos de STRI en Tivoli. Sus funciones serán las de asistir en las actividades de la Oficina del Director, tales como control de correspondencia, flujo y disposición de documentos, manejo de archivos, llamadas internacionales, etc. Proficiencia en mecanografía, en trabajos de secretaria en general y redacción de correspondencia. Conocimiento de computadores personales y del procesador de palabras Word-Perfect. Como requisito indispensable debe ser completamente bilingüe (inglés y español oral y escrito) y habilidad para trabajar bajo presión con flexibilidad e independencia.

Volunteers Needed ••• Se Necesitan Voluntarios

- Peter Searles needs a volunteer to work at BCI from Jan 4-6. The only requirement is that the candidate should be taller than 5'6, in order to reach plants that are at a certain height ••• Peter Searles de BCI necesita un voluntario para trabajar del 4-6 de enero. El único requisito necesario es de que la persona sea más alta que 5'6, para que pueda alcanzar plantas a cierta altura.
- The Office of Accounting is looking for a volunteer to help with filing ••• La Oficina de Contabilidad necesita de los servicios de un voluntario para asistir en el archivo de documentos.

Interested candidates please contact the Office of Education at Tupper Center ••• Candidatos interesados favor de comunicarse con la Oficina de Educación en el Centro Tupper.

STRI NEW PUBLICATIONS

- Budd, Ann F. and Coates, Anthony G. 1992. "Nonprogressive Evolution in a Clade of Cretaceous *Montastraea*-like Corals." *Paleobiology* 18(4): 425-446.
- Gompper, Matthew and Krinsley, Jeanne S. 1992. "Variation in Social Behavior of Adult Male Coatis (*Nasua narica*) in Panama." *Biotropica* 24(2a): 216-219.
- Kitajima, Kaoru. 1992. "Relationship Between Photosynthesis and Thickness of Cotyledons for Tropical Tree Species." *Functional Ecology* 6: 582-589.
- Vollrath, Fritz and Parker, Geoff A. 1992. "Sexual Dimorphism and Distorted Sex Ratios in Spiders." *Nature* 360(Nov 12): 156-159.
- Wcislo, William T. 1992. "Attraction and Learning in Mate-Finding by Solitary Bees, *Lasioglossum* (*Dialictus*) *figueresi* Wcislo and *Nomia triangulifera* Vachal (Hymenoptera: Halictidae)." *Behavioral Ecology and Sociobiology* 31: 139-148.
- Winter, Klaus and Lesch, Maria. 1992. "Diurnal Changes in Chlorophyll *a* Fluorescence and Carotenoid Composition in *Opuntia ficus-indica*, a CAM Plant, and in Three *C₃* Species in Portugal During Summer." *Oecologia* 91: 505-510.

The year in review...

Happy New Year to all!

As the year comes to a close, we can look back with pride at 1992 as a very successful year for STRI. The photos on this and the following page are only a sample of the variety of STRI activities during 1992. These were made possible through the individual and collective efforts of all employees. Congratulations to all!

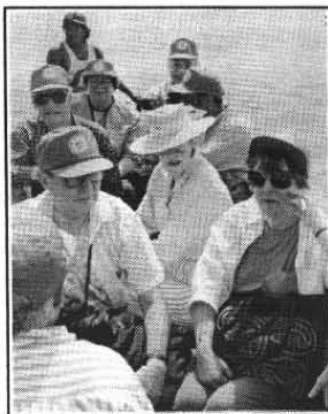
Al llegar al final del año, podemos mirar hacia atrás con orgullo a 1992 como un año de gran éxito para el STRI. Las fotos en ésta y la siguiente página son solamente ejemplos de la variedad de actividades exitosas del STRI durante 1992. Estos logros fueron posibles gracias a los esfuerzos individuales y colectivos de todos empleados. ¡Felicitaciones a todos!



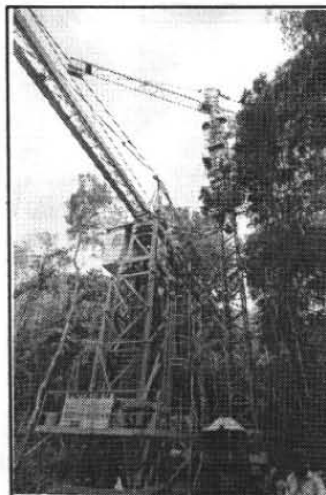
Tom Freudenheim, SI assistant secretary for arts and humanities, visited STRI in January. As a result of this visit, a collection of art books and pamphlets was donated to the Museum of Contemporary Art some months later. (Photo: M.A. Guerra)



STRI exhibit "Parting the Green Curtain" opened at the Catholic University in Quito, Ecuador in February. (Photo: courtesy of PUCE)



Secretary Adams, SI regents David C. and Pat Acheson and Homer and Dana Neal and assistant secretary for science, Robert and Sally Hoffmann visited San Blas during their trip to STRI in February. (Photo: John Christy).



The new Potain crane was installed at Parque Natural Metropolitano in March to provide scientists with better access to the forest canopy. (Photo: M.A. Guerra)



STRI personnel received training to use the new scanning electron microscope installed at the Tupper Center in April. (Photo: M.A. Guerra)



The new STRI field station in Bocas del Toro was acquired in April. (Photo: Security Office)