

STRI newsletter

May 17, 1991

SMITHSONIAN TROPICAL RESEARCH INSTITUTE - Apartado 2072, Balboa, Panama

No. 20

TUPPER CENTER SEMINARS

Tupper Center Auditorium

No noon seminar scheduled for May 21.

Next Week

No noon seminar scheduled for May 28.

BCI SEMINARS

Thursday, May 23, evening seminar speaker will be Robert Ricklefs, University of Pennsylvania.

Sibling competition, hatching synchrony and incubation period in birds.

There will be a late boat; those interested should contact Maritza Cárdenas.

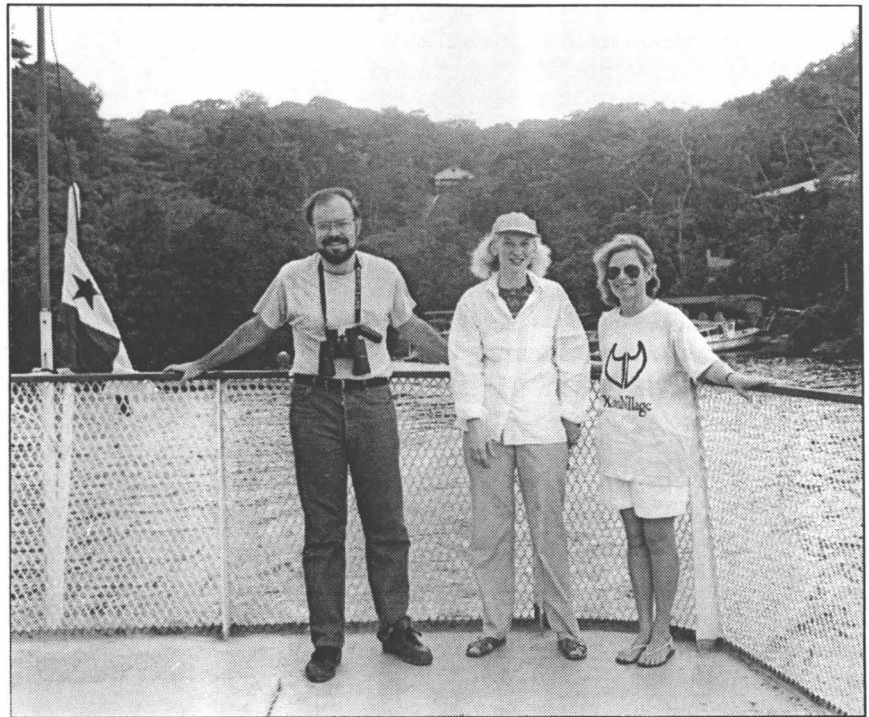
PEOPLE

Arrivals

- Kim Kiho, State Univ. of New York, May 19-Aug 15, to work on effects of vegetative propagation on the abundance and distribution of benthic invertebrates at San Blas.
- Janna Ellington, Univ. of Texas, Austin, May 20-Aug 15, short term fellow, to work on the evolution of visual communications in the diurnal gecko, color and its role as a social signal, in Gamboa.
- May 20-May 24, Jeremy Jackson, Hector Guzmán, Michael Marshall, Sally Levings, Steve Garrity, Robert Carney, Richard Dodge, Roger Green, Yosi Loya, Cathy Burns, Jim Kendall, Edward Van Vleet, to attend Scientific Review Board of the Oil Spill Project.

Departures

- May 20-27, Fernando Pascal, on official business to S.I. Office of Design and Construction, Washington, D.C.
- May 22-June 8, Dave West, to various cities in the United States to consult the design and construction of a vessel, and to attend a shipboard fire-fighting course.



Lucy Dorick and Nancy Fischer, from the Smithsonian's Office of Membership and Development, made a tour of the STRI facilities to acquaint themselves with STRI and its needs in order to better assist with fund raising efforts ••• Lucy Dorick y Nancy Fischer, de la Oficina de Membresía y Promoción del Smithsonian, hicieron un recorrido por las instalaciones del STRI para familiarizarse con el STRI y sus necesidades para el mejor desempeño de sus esfuerzos en recolección de fondos.

(Foto: M.A. Guerra)

NEW FELLOWSHIPS

Nato Postdoctoral Fellowships

- David Zeh was awarded a Nato Postdoctoral Fellowship to do DNA fingerprinting for paternity assignment at the Univ. of Nottingham.
- Allen Herre, another Nato Postdoctoral Fellowship recipient, will divide his tenure in two—the first 6 months at Leiden University, Netherlands, with Dr Koos Wiebes and Jacques Van Alphen to combine work done at STRI on molecular phylogenies of fig wasps with the taxonomic and systematic expertise of Dr. Weibes. The next 6 months will be spend at Oxford University with Drs. William Hamilton and Robert May, to consult and collaborate on the theoretical ramifications of work done at STRI on dynamics and evolution of virulence in nematode parasites of fig wasps.

Congratulations to both!

STRI Exxon Assistantships

Ghisselle Alvarado, Univ. de Costa Rica, Assistant to S. Rand & M. Ryan.
Oriana Batista, Univ. de Panamá, Assistant to S. Emlen and P. Wrege in Gamboa.

Luis Fernando García, Univ. Nacional de Colombia, Assistant to E. Bermingham.

Laura Schneider, Univ. de los Andes, Assistant to I. Roisin.

Milagro Ruiz, Univ. de Panamá, Assistant to G. Orians.

STRI Exxon Extensions

Nimiadina Gómez, Univ. de Panamá, Assistant to Cindy Sagers.

Sandra Patiño, Assistant to M. Tyree.

Martha Prada, Univ. Nacional de Colombia, Assistant to N. Duke.

Whitehall Foundation Research Grant

Robert Dudley, STRI Three-Year Postdoctoral Fellow, has received a one year Whitehall Foundation Research Grant to investigate nonlinear dynamics of flight motor output in insects. *Congratulations!*

ANNOUNCEMENTS

Posición Abierta

Se necesitan guardabosques para desempeñar importantes funciones de tipo técnico relacionadas con la conservación de la reserva forestal, su seguridad, uso público de los bosques, relaciones con los pobladores y observación de la ley. El trabajo es en el Monumento Natural de Barro Colorado y otras tierras y aguas bajo la responsabilidad del Instituto Smithsonian de Investigaciones Tropicales. **Requisitos:** Conocimiento del bosque; entrenamiento en biología o experiencia equivalente en manejo forestal o seguridad y vigilancia; buena salud; saber nadar; preferiblemente hablar inglés. Trabajo permanente de tiempo completo. Se trabaja en turnos. Enviar curriculum vitae al Apartado 3353, Balboa, Ancón, República de Panamá, antes del 31 de mayo de 1991.

1st STRI Open Tennis Tournament

Tournament results:

1st Round

Don Windsor defeated Edmundo Rodriguez 4-6; 7-5; 6-3 • Isis Ivancic defeated Carlos Urbina 6-2; 7-5 • Eric Lam defeated Mireya Correa 6-4; 7-5 • Ira Rubinoff defeated Carlos Tejada 1-0 retired.



Miguel Angel Briceño, Valent Recreation Center, presents Georgina de Alba with a plaque in recognition of STRI's contribution to the celebration of "Earth Day" the last weekend of April. Maria Luz Calderón received a certificate of appreciation for the exhibition prepared by the Office of Education for such event ••• Miguel Angel Briceño del Centro Recreativo de Valent en Clayton, presenta una placa a Georgina de Alba en reconocimiento al STRI por su contribución a la celebración del "Día de la Tierra" durante el último fin de semana de abril. Maria Luz Calderón recibió un certificado de apreciación por la exhibición preparada por la Oficina de Educación para este evento.

(Foto: M.A. Guerra)

2nd Round

Don Windsor defeated Eric Lam 6-0; 6-3

Isis Ivancic defeated Ira Rubinoff by default.

Final Round

Don Windsor vs Isis Ivancic is scheduled for Friday May 17th., 4:30, Ft. Amador.

The tournament so far has been a success. Most players have dusted off their old wooden or steel rackets just to compete. The only bad news of the tournament has been the forced retirement of Carlos Tejada in his match with Ira Rubinoff due to a ruptured Achilles' tendon in the very first point of the match.

STRI NEW PUBLICATIONS

Karr, James R. 1990. "Birds of Tropical Rainforest: Comparative Biogeography and Ecology." In: *Biogeography and Ecology of Forest Bird Communities*: 215-228, edited by A. Keast. The Hague: SPB Academic Publishing.

Karr, James R. 1990. "Interactions Between Forest Birds and their Habitats: A Comparative Synthesis." In: *Biogeography and Ecology of Forest Bird Communities*: 379-386, edited by A. Keast. The Hague: SPB Academic Publishing.

Mielke, Wolfgang. 1990. "A New Species of *Psammotopa* (Copepoda) from the Pacific Coast of Panama." *Crustaceana* 59(1): 69-75.

Mielke, Wolfgang. 1990. "*Zausodes septimus* Lang, 1965 und *Enhydrosoma pericoense* nov. spec., zwei benthische Ruderfußkrebse (Crustacea, Copepoda) aus dem Eulitoral von Panamá." *Microfauna Marina* 6: 139-156.

New at STRI Minibookstore

- *Principles of Systematic Zoology*, by Ernst Mayr and Peter D. Ashlock \$39.95.
- Smithsonian Earth Day T-Shirts \$12.00.
- Isla Gorgona T-Shirts, with a Humpback Whale Design on bright colors. The sale of this T-shirt helps support the Project for the Study of Whales in the Eastern Pacific \$11.00.

Assistant Available

Glenda Alm plans to be in Costa Rica during January and February 1992. In addition to visiting national parks, reserves, and reforestation projects, she is interested in volunteering in an ecological project for 4-6 weeks. She has 15 years of experience in the nursery business, growing trees and shrubs from seedlings. For the past four years, she has worked as an interpreter of the natural, historical, and cultural environment for the U.S. Forest Service in the Mt. Hood National Forest in Oregon. She will be handling her own transportation but will need help with lodging and food cost. Her address is: P.O. Box 93, Welches, Oregon 97067.

For Sale

MAZDA 323, 1985, 2-door, gray/gris, 4 cylinders, A/C. \$2,900 negotiable. If interested, call Sandra de Vallarino, 69-2095.

Curso de Biología de Campo

Es muy común pensar que el estudio de biología en el campo es nada más que la acumulación de observaciones de organismos bajo condiciones naturales, pero en realidad es mucho más. Muchos estu-



(Foto: M.A. Guerra)

diantes han sido entrenados en el método científico para investigaciones de laboratorio, pero no han tenido la oportunidad de realizar investigaciones en el campo.

La idea del **Curso de Metodologías de Campo**, organizado por la Oficina de Educación de STRI, fue que tanto en el campo como en el laboratorio, la ciencia avanza más rápidamente si aplicamos métodos sistemáticos. Los coordinadores de este curso, los Drs. Kevin Hogan y Héctor Barrios, incluyeron conferencias sobre trabajos científicos ya hechos por otros investigadores, proyectos de campo realizados por grupos de estudiantes y profesores, y proyectos individuales realizados por los mismos estudiantes.

El mismo se llevó a cabo del 5 al 12 de mayo en las instalaciones de STRI en la Península de Gigante. Participaron 17 estudiantes de 2do y 3er año de la Universidad de Panamá— Mario Arosemena, Raúl Avilés, Ricardo Brown, Nancy Díaz, César Edwards, Gabriela Etchelecu, Angela Fawcett, Edgardo Garrido, Mario González, Mónica Mejía, Irwin Muñoz, Rolando Pardo, Evaristo Ríos, Mirna Santana, Anayansi Valderrama, Elsie Vicotria y Osvaldo Ramos. El éxito del curso también se debió en gran medida a los tres asistentes de campo, Mónica Medina, Oris Acevedo y Milton García.

FROM OTHER SOURCES

The Mystery of Migrating Moths

From *Jodrell Newsletter*, Royal Botanic Gardens Kew

The colorful day-flying moth, *Urania fulgens*, native to tropical Central and South America, undergoes periodic and sometimes spectacular

population outbursts. In attempting to recover the cause of these migrations, tropical biologist Neal Smith, at STRI, together with biochemists at Kew, have uncovered an intriguing problem in chemical ecology.

The moth's larval food plant is the liana *Omphalea diandra* (Euphorbiaceae). However, when attempting to rear *Urania* in captivity, Neal Smith discovered that larvae would refuse to eat leaves from certain *Omphalea* plants, and die. Kew biochemists performed a chemical analysis of *Omphalea* foliage and, to their amazement, they found the insect antifeedant compound and glycosidase inhibitor, "DMDP". At the time, Linda Fellows' group and Monique Simmonds were investigating the potential of this polyhydroxyalkaloid as an insect deterrent agent. It was thought that the compound was only produced by a few species in the Leguminosae, so its occurrence in the Euphorbiaceae was unexpected.

Geoffrey Kite has since isolated three new polyhydroxyalkaloids from *Omphalea*; one of which Tony Scofield at Wye College, London has shown to be a potent inhibitor of an important insect enzyme. However, *Urania* larvae appear to be unaffected by the polyhydroxyalkaloids produced by *Omphalea*. In fact they accumulate some of them and retain them through to the adult stage, possibly as a chemical deterrent to predators.

Lepidopterist David Lees, who is studying the host plant relationship of uraniine moths, advised Kew that genera related to *Urania* from the Indo-Australian tropics bred on another member of the Euphorbiaceae, *Endospermum*. Analysis of these moths showed that they too contained polyhydroxyalkaloids. Thus, *Endospermum* was targeted for collection, and with the help in the field of Elaine Gasis (Sabah Foundation, Malaysia) and Geoffrey Monteith (Queensland Museum, Australia), the genus was shown to be a new source of polyhydroxyalkaloids. Interestingly, *Omphalea* and *Endospermum* are not generally considered to be very closely related.

Meanwhile, Neal Smith had discovered that an *Omphalea* plant which was acceptable to *Urania* larvae, could be rendered unacceptable by severely damaging its foliage. Present research at

Kew is aimed at identifying what chemical changes occur during this switch and whether polyhydroxyalkaloids are involved—but how these chemical discoveries relate to the moth's migrations remains a mystery□



Omphalea diandra and *Urania fulgens* (photograph)

From: *365 Ways to save our planet*
• Page-a-day calendar

The disposable battery is one of the most common contributors of toxic waste to landfill. Rechargeable batteries cost more up front but are more economical in the long run. And using them keeps cadmium, mercury, lead and other toxic metals out of landfills and underground water.

