

STRI news

October 3, 1997

Smithsonian Tropical Research Institute • Apartado 2072, Balboa, Panamá • Tel. 227-6022 • Fax 232-5978

TUPPER CENTER SEMINARS

Tuesday, October 7, noon seminar speaker will be Andrew Baker, SI predoctoral fellow 1995-1996 from the Rosenstiel School of Marine and Atmospheric Science, University of Miami, Florida

Ecology and Biogeography of Symbiont Diversity in Scleractinian Corals

Abstract

Reef-building scleractinian corals obligately host endosymbiotic photosynthetic dinoflagellates ("zooxanthellae"). These dinoflagellates show enormous genetic diversity despite being morphologically similar. Zooxanthellae are recognized as being crucial to explaining the success of coral reefs in shallow oligotrophic tropical seas, but the potential role of symbiont diversity in understanding the natural history and ecology of coral reefs has only recently been explored. Molecular surveys of the zooxanthellae from >90 species of scleractinian coral from the Caribbean, Pan-american eastern Pacific and the Great Barrier Reef reveal that the occurrence of intraspecific symbiont diversity in scleractinian corals is common (>25%). Some of these coral species also show symbiont diversity within single colonies. The intraspecific and intracolony distributions of these symbionts show strong light dependence. In two species of closely related Caribbean corals this intraspecific symbiont diversity has been shown to explain much of the previously enigmatic variation in their patterns of coral bleaching (the loss of zooxanthellae in response to environmental stress). Surprisingly, Pacific corals host phylogenetically less diverse symbionts than Caribbean corals, despite considerably higher coral host diversity in the Pacific, and the fact that the zooxanthellae absent from those Pacific corals can be found as symbionts of other marine invertebrates in the same reef ecosystems. One interpretation of these biogeographic data is that the scleractinian coral fauna of the Caribbean may have recently evolved the ability to associate with novel symbiont taxa previously only found in non-scleractinians. Additional studies of the biogeographic, systematic and ecological differences in symbiont diversity provide further insight into how these associations have evolved, and how they might respond to future anthropogenic stress.



Recently, Paul Colinvaux was invited to give a course at the Universidade Federal do Parana, Curitiba, Brazil, on *How the Natural World Works*. In the photo, Colinvaux and Elena Lombardo presented a donation of laboratory equipment to Mario Protual Pederneiras, director of the Biological Sciences Department, under the terms of the STRI-UFPR collaboration agreement. Also present were Raquel Negrelle, coordinator of the agreement (right) and entomologist Thelma Alvin Velga Lidwig (not in the photo) (Photo: Courtesy of External Affairs)

Behavior Discussion Group Meeting

The Behavior Discussion Group will meet on Tuesday, October 7, at 1:30pm, in the Large Meeting Room, Tupper Center. Patricia Backwell and Michael Jennions will informally discuss work on signal evolution in crabs.

PEOPLE

Arrivals

- Adrian Cerezo, Senior SI Education Programs Fellow, Oct 2 -Nov 16, to work with staff of the Office of Fellowships and Education, on educational outreach programs.
- Robert Percy, Mellon senior fellow from the University of California, Oct 5, to conduct integrative studies of photosynthesis and whole plant performance in the understory, on BCI.

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- Stephen Howard, Oct 5 - 10, to work on the monitoring project, on mainland.
- Simon Zipperlen, University of California, Oct 6 - Nov 5, to work with Robert Percy, at BCI.
- Douglas Schemske, University of Washington, Oct 6-9, to study the evolution of floral characters and reproductive isolation in Neotropical *Costus* (Costaceae), on a Mellon Research Enhancement Award, at BCI and the OTS in Costa Rica.
- Christina Campbell, University of California, Oct 6 - Nov 1, for a study of the reproductive biology of the blackhanded spider monkey (*Ateles geoffroyi*): integrating behavior and endocrinology.
- Brice Quenouille, University of Perignon, France, Oct 10 - Oct, 2000, to study the molecular systematics of the Pomacentrid reef fish genus *Amphiprinn* (clownfishes), at Naos.
- Matthew Neale, Cambridge University, U.K., Oct 10 - Dec 20, to conduct studies of social behavior of spiders, at BCI.
- Mitch Allen, University of California, Oct 2 - Dec 5, to work with Robert Percy, at BCI.

Departures

- Anthony Coates, Oct - Apr 1998, on research activities in Panama, conducting field trips, attending meetings and completing different manuscripts for publication.
- Joe Wright, Oct 6-9, to San José, Costa Rica, to attend meetings at the OTS.
- Nancy Knowlton, Oct 12-22, to Washington D.C., to attend the Coral Reef Conference. Then to New York, to attend the Lamont-Daherty workshops on the Effects of the Rise of the Isthmus of Panama; to San Diego to visit Scripps Institution of Oceanography, and to Salt Lake City to attend the meetings of the Geological Society of America.

THINGS YOU SHOULD KNOW

From the Director's Office

De la Oficina del Director

Effective October 1, 1997, Mrs. Leonor G. Motta will serve as Acting Deputy Director of STRI. In the absence of the Director, Mrs. Motta will serve as Acting Director, without further delegation. This appointment and delegation of authority will remain until April 1998, during the tenure of a sabbatical leave for Dr. Anthony

Coates ••• *A partir del 1 de octubre de 1997, Leonor G. Motta es la subdirectora encargada de STRI. En ausencia del director, Leonor Motta servirá como directora encargada en todos los casos. Esta delegación de autoridad se mantendrá hasta abril de 1998, cuando termina el periodo sabático de Anthony Coates.*

STRI IN THE NEWS

On Wednesday, October 8, the new season of the TV series *Scientific American Frontiers* hosted by Alan Alda, and based to a large extent on STRI's work, will air in most PBS stations at 8pm in the United States. Interneters can access the *Frontiers* Website at www.pbs.org/saf.

ANNOUNCEMENTS

IX Semana de la Estadística

La Universidad de Panamá invita a la comunidad de STRI a participar en una serie de actividades, entre las cuales están la presentación de conferencias, ponencias, mesas redonda, afiches, cursos cortos de computadoras, etc., con motivo de la celebración de la IX Semana de la Estadística del Departamento de Estadística de la Facultad de Ciencias Naturales, Exactas y Tecnología. Para mayor información, favor llamar al 263-6133 x 189 o al 263-6000 • Fax 263-7636, E-mail: dsanchez@ancon.up.ac.pa

NEW STRI PUBLICATIONS

Wikelski, Martin and Trillmich, Fritz. 1997. "Body Size and Sexual Dimorphism in Marine Iguanas Fluctuate as a Result of Opposing Natural and Sexual Selection: An Island Comparison." *Evolution* 51(3): 922-936.

OFFICE OF EDUCATION #330

You will find information that is too long to publish on:

- 2nd International Conference on Wetlands and Development, Dakar, Senegal, 8-14 November 1998
- CRDT: Centre for Rural Development and Training, University of Wolverhampton, U.K. One/Two Year Course Calendar for 1997/1998 (Funding possibilities).
- Job opportunity for a terrestrial ecologist at the Appalachian Laboratory of the University of Maryland Center for Environmental Science.