

STRI newsletter

November 15, 1991

SMITHSONIAN TROPICAL RESEARCH INSTITUTE - Apartado 2072, Balboa, Panama

No. 46

TUPPER CENTER SEMINARS

Tuesday, November 19, noon seminars speaker will be Phyllis Coley and Thomas Kursar, University of Utah.

*Red, white and blue young leaves:
an anti-herbivore defense*

Abstract

In rainforests, the young leaves of many species are white, red or blue, and have low levels of chlorophyll throughout leaf expansion. We examined the implications of this delayed greening pattern for photosynthesis and herbivory in gap and understory species. Species with delayed greening have 5 times less chlorophyll, absorb 75% less light, and have significantly lower carbon gain during leaf development. They also have lower concentrations of nitrogen and energy-rich compounds such as rubisco, light harvesting proteins, and lipids associated with the chloroplast. As a consequence, fewer resources are lost to herbivores during the vulnerable stage of development before leaves toughen and become better protected from herbivores. A cost-benefit analysis shows that because of a tradeoff between carbon gain through photosynthesis and carbon loss to herbivores, white leaves cost less to make than green leaves under low-light conditions in the understory. At higher light levels, the advantages of photosynthesis outweigh the losses to herbivores, and green leaves are more effective. A survey of gap and understory plants confirms that delayed greening is overwhelmingly found in shade-tolerant species. Correlations among delayed greening and other young leaf defenses will be discussed.

Next Week

Tuesday, November 26, noon seminar speaker will be Stanley Heckadon, STRI Research Associate.

The State of Forestry and Agroforestry Research in Tropical Latin America



On Nov 14, Carlos Ivan Zuñiga (left) president of the University of Panama and his wife Sydia Candanedo, visited STRI's Tupper/Tivoli complex along with other members of the university's governing board as part of an effort to strengthen collaboration between both institutions. Visitors were briefed by STRI administrators ••• Carlos Iván Zúñiga (izquierda), Rector de la Universidad de Panamá, y su esposa Sydia Candanedo, visitaron el complejo del Centro Tupper y las oficinas administrativas de Tivoli junto con otros miembros de la rectoría de la universidad, como parte de un esfuerzo por estrechar los lazos entre las dos instituciones. Los visitantes fueron atendidos por la dirección del STRI.

(Foto: M.A. Guerra)

PEOPLE

Departures

- Eldredge Bermingham, Nov 17-Dec 3, to consult with colleagues at the University of Maine and to Smithsonian Institution's Conservation Analytical Laboratory.
- Ira Rubinoff, Nov 17-23, on official business to the Smithsonian Institution in Washington, D.C.
- Jeremy Jackson, Nov 18-Jan 5, to Washington, D.C., to attend the National Forum on Ocean Conservation and other official business at the National Museum of Natural History. He will also go to New York to the American Museum of Natural History and to Atlanta, GA to attend the meetings of the American Society of Zoologists.
- Olga Linares, Nov 19-26, to Chicago to attend the American Anthropological Association meetings, then to St. Louis for the meetings of the African Studies Association.

THINGS YOU SHOULD KNOW

Attention Tupper Center Personnel ••• *Atención Personal del Centro Tupper*

On Saturday, Nov 16, the air-conditioning system at Tupper will be turned off in order to give maintenance to the main system. On the same day the Tupper and Tivoli buildings will undergo extensive cleaning by a large crew of workers. We would appreciate if, on this day, staff would refrain from using the Tupper/Tivoli complex, unless absolutely necessary. ••• *El sábado, 16 de noviembre, se apagará el sistema de aire acondicionado del Centro Tupper, para darle mantenimiento a las torres de enfriamiento del mismo. Este mismo día se hará una limpieza general por un grupo numeroso de empleados. Se agradecerá si el personal del complejo Tupper y Tivoli eviten usar sus oficinas si no es absolutamente necesario.*

From the Accounting Payroll Office

Last day to use "Use of Lose" Annual Leave is January 11, 1992. Please take your leave accordingly.

Security Specialist ••• *Especialista en Seguridad*

Pablo Amaris is the new Security Specialist at STRI. From now on for emergencies please call Mr. Amaris, instead of Alejandro Arze, and after hours at his home, Tel.: 26-5067 or Radio 92.

As Security Specialist, Mr. Amaris will be in charge of performing site inspections of STRI facilities; maintaining continuous contact with game wardens at the BCNM, accompanying them when necessary; and assisting the Security Officer with contingency programs for emergencies.

Mr. Amaris completed his studies in Lima, Perú, and comes to STRI with 6 years of experience in security.

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Pablo Amaris es el nuevo especialista en seguridad del STRI. De ahora en adelante, para cualquier emergencia se deben comunicar con él, en vez de Alejandro Arze. Después de horas de oficina su teléfono es el 26-5067 o Radio 92. Como especialista en seguridad, el Sr. Amaris estará a cargo de inspeccionar todas las instalaciones del STRI; mantener contacto continuo con los guardabosques del Monumento de Barro Colorado acompañándolos cuando sea necesario; y asistir al Director de Seguridad con los programas de contingencia para emergencias. El Sr. Amaris terminó su carrera en Lima, Perú, y vino al STRI con 6 años de experiencia en seguridad.

Invitación

Viernes, 15 nov, 4:30 pm, Voleibol en el estacionamiento de Tivoli. Todos están invitados.

ANNOUNCEMENTS

At Tupper Center

Nov 18-22: Meeting of *Sociedad Alemana de Cooperación Técnica (GTZ)* to discuss "Proyecto Agroforestal para la Zona Guaymí de Chiriquí", 8 am-4 pm, Large Meeting Room.

Nov 19: MCI Meeting, 2-3 pm, Auditorium.

Nov 20: COABIN Meeting, 9 am-12, Small Meeting Room.

Sports Event ••• *Eventos Deportivos*

Remember to sign up for the big STRI sporting events, taking place on Fri, Dec 6, at 4:30 pm on the Amador Causeway. Activities will include competition in walking, running and bicycling. The sign-up sheet is posted on your facility bulletin board. Join us and have fun! ••• *Inscríbese en el gran evento deportivo del viernes 6 de diciembre a las 4:30 pm en la Calzada de Amador. Habrá caminata, carrera y ciclismo. La hoja de inscripción está en el tablero de noticias de su instalación. Acompáñanos y diviértete!*

Sales

Christmas Bazaar at Amador Officer's Club: Sat, Nov 16, 10am-4pm • Book Sale for the benefit of the British Aid Society, to help indigent old people, at Leighs' home: 155 A Gamboa, Sun 17 Nov, from 8 am.

TRAINING

Curso de Estadística Intermedia

Luis Bulla del Instituto de Zoología Tropical de Caracas, con la colaboración de Haris Lessios del STRI, dictará un curso de Estadística en español con temas como estadísticas no paramétricas, tablas de contingencia, álgebra de matrices, componentes principales, regresión e índices de diversidad. El curso será en el Centro de Entrenamiento de la Comisión del Canal, del 9-16 de diciembre 5:50-7:30 pm, y dos sesiones de 4 horas el martes 10 y el sábado 14. Los interesados favor contactar a la Oficina de Educación a más tardar el 22 de noviembre.

VIII Congreso Científico Nacional

Se exorta a los investigadores del STRI a participar en el VIII Congreso Científico Nacional con sede en la Universidad de Panamá cuyos objetivos son el de servir como foro docente para la presentación de los resultados de investigaciones nacionales, facilitar el intercambio de experiencias entre los investigadores locales, y motivar la incorporación de nuevas unidades profesionales a las labores de investigación y comunicación científica. La fecha del evento será del 19 al 21 de febrero de 1992 y se podrá participar como expositor o asistente. Para mayor información y formulario

de inscripción, visite el mostrador de información de la Oficina de Educación.

POSITION AVAILABLE

Job Available

Dartmouth College invites applications for a tenure-track Assistant Professor position in evolutionary ecology, to begin in the fall 1992. Applicants should have strong foundations in evolutionary biology, whose research interests are at the population or community levels. Postdoctoral experience and evidence of teaching excellence required. Submit *curriculum vitae*, statement of research and teaching interests, and three letter of reference to: Ecology Research Committee, Department of Biological Sciences, Dartmouth College, 6044 Gilman, Hanover, NH 03755-3576. Fax: 603-646-1347. Review of applications will begin 18 November 1991.

NEW FIELD STATION

New STRI Field Station on Contadora
Beginning Jan 17, 1992, a two bedroom beach front house will be available on Contadora Island as a base for marine and terrestrial research use. AEROPERLAS runs daily flights (17 mins, \$44 round-trip) from Paitilla Airport. The station accommodates a maximum of 6 persons and provides the basic needs of field research in the area. Equipment will include a Boston Whaler, SCUBA compressor and tanks. Fees for researchers will be the same as for the San Blas Field Station. Small group (1-2 people) can be accommodated for short periods between now and Jan 17. All visitors should contact Ross Robertson, at Naos, Tel: 28-4060.

STRI NEW PUBLICATION

Dudley, Robert. 1991. "Comparative biomechanics and evolutionary diversification of flying insect morphology." In: *The Unity of Evolutionary Biology: Proceedings of the Fourth International Congress on Systematic and Evolutionary Biology*: 503-514, edited by E. Dudley. Portland: Dioscorides Press.



New STRI Field Station in Contadora ••• La Nueva Estación de Campo del STRI en Contadora.
(Foto: Ursula Schober)

EVENTOS CULTURALES

Noche de Virtuosos

Martes, 19 de Nov, 8:30 p.m., Teatro Nacional. Temporada Mozart. Concierto en *La mayor* para clarinete y orquesta, K622 por Rafael García, clarinete. Sinfonía Concertante para violín, viola y orquesta, K364 por Pedro Saglimbeni (viola) y Ana Manzanilla (violin). Concierto en *Do mayor* para flauta, arpa y orquesta, KV299 por Mauricio Smith (flauta) y Annette León (arpa). Boletos de venta en la Librería Argosy y la taquilla, \$20 y \$5.

Coro Polifónico de Panamá

Miércoles, 20 de Nov, 8 pm, Teatro Nacional. Conductor Arnold Walters; soloistas Shoko Nakagawa, Alicia Saenz, Judy Pence, Lizzy Leigh. Programa: Vivaldi's Gloria, Bach, Mozart, Donizetti, Brenes. Boletos de venta en la Librería Argosy, \$20-15-10-3.

Navidad Alrededor del Mundo

Revista musical - canciones, bailes y ballet Cascanueces, dirigido por Bruce Quinn. Una función especial para niños humildes. 22, 23 y 24 de Nov, 7:30 pm, Teatro Anayansi, ATLAPA. Boletos de venta en los 7-11, Gran Morrison y Librería Argosy. Viernes 22, noche de gala, \$50-35-20-10 y sábado 23/domingo 24, \$20-15-10-5.

From: 365 Ways to Save our Planet • Page-a-Day Calendar • Zip 1.0, a computer program from the National Technical Information Service, can help you insulate your home. The program compiles data to suggest your most cost-effective approach. It's just \$5; phone (703)487-4600 for ordering information.

STRI NEW BOOKLIST

- After the Ice Age: the return of life to glaciated North America / E.C. Pielou.
QE721.2.P24P54 1991X STRI.
- Agroforestry in sub-Saharan Africa: a farmer's perspectives / Cynthia C. Cook and Mikael Grut.
S494.5.A45C66 1989X STRI.
- Amazon conservation in the age of development: the limits of providence / Ronald A. Foresta.
QH77.A53F67 1991X STRI.
- The Conservation of insects and their habitats / edited by N.M. Collins & J.A. Thomas. QL463.C75 1991 STRI.
- Coral reefs / edited by Z. Dubinsky.
QH541.5.C7C57 1990X STRI.
- The correspondence of Charles Darwin / [editors, Frederick Burkhardt, Sydney Smith].
QH31.D2A33 1985X v.3 STRI.
- Cytogenetics of amphibians and reptiles / edited by Ettore Olmo.
QL668.5.C97 1990X STRI.
- Drug discovery: a casebook and analysis / by Robert A. Maxwell and Shohreh B. Eckhardt.
RS420.M38 1990X STRI.
- Forested wetlands / edited by Ariel E. Lugo, Mark Brinson, and Sandra Brown.
QH541.5.M3F67 1990X STRI.
- Freshwater algae of the southeastern United States / Gary E. Dillard. QK571.5.S685D54 1989X pt.1-3 STRI.
- Genetic aspects of plant mineral nutrition / edited by N. El Bassam, M. Dambroth, and B.C. Loughman.
QK867.I424 1988X STRI.
- Guide to photographic collections at the Smithsonian Institution / Diane Vogt O'Connor, editor.
Q11.S79 1989X v.2 STRI.
- Handbook of Latin American studies, no.50.
Ref Z1605.H23X STRI.
- In the U.S. interest: resources, growth, and security in the developing world / edited by Janet Welsh Brown.
HF1456.5.D44I39 1990X STRI.
- Isozymes in plant biology / edited by Douglas E. Soltis and Pamela s. Soltis.
QK898.I8I86 1989X STRI.
- New world archaeology and culture history: collected essays and articles / Gordon Randolph Willey.
E58.W55 1990X STRI.
- Phytoarcheology / by Robert R. Brooks and Dieter Johannes.
CC79.5.P5B76 1990X STRI.
- The Rainforests of West Africa: ecology, threats, conservations / Claude Martin.
QH195.W46M3713 1991X STRI.
- Santana fossils: an illustrated atlas / edited by John G. Maisey.
QE734.S23 1991 STRI.
- Seabirds of the Farallon Islands: ecology, dynamics, and structure of an upwelling-system community / edited by David G. Ainley and Robert J. Boekelheide.
QL684.C2S44 1990X STRI.
- Seeds of change: a quincennial commemoration / edited by Herman J. Viola and Carolyn Margolis.
E112.S45 1991X STRI.
- Soil conservation in developing countries: project and policy intervention / Jock R. Anderson, Jesuthason Thampapillai.
HD1131.A54 1990X STRI.
- Soils on a warmer earth: effects of expected climate change on soil processes, with emphasis on the tropics and sub-tropics / editors H.W. Scharpenseel, M. Schomaker, A. Ayoub (International Workshop on Effects of Expected Climate Change on Soil Processes in the Tropics and Subtropics (1990: Nairobi, Kenya).
S596.3.I585 1990X STRI.
- Taxonomy of economic seaweeds with reference to some Pacific and Caribbean species / Isabella A. Abbott and James N. Norris, editors.
SH390.T23 1985 STRI.
- Theoretical studies of ecosystems: the network perspective / editors ; M. Higashi, T.P. Burns.
QH541.T39 1991 STRI.
- Vegetation and climate interactions in semi-arid regions / edited by A. Henderson-Sellers, A.J. Pitman.
QK938.D4V44 1991X STRI.