

STRI newsletter

January 31, 1992

SMITHSONIAN TROPICAL RESEARCH INSTITUTE - Apartado 2072, Balboa, Panama

No. 5

TUPPER CENTER SEMINARS

Tuesday, Feb 4, noon seminar speaker will be Koji Nakamura, Kanazawa University.

Population dynamics of herbivorous beetles under a non-seasonal climate in Sumatra.

Abstract

Since 1980, I have been studying seasonal changes in abundance and mortality factors of some herbivorous coccinellids (Coccinellidae: Epilachninae) and tortoise beetles (Chrysomelidae: Cassidinae) in Padang, Sumatra. My methods include mark-recapture of adult beetles, construction of life tables for the field populations, and laboratory rearings for analysis of survivorship and reproductive schedules. Seasonal cycles and demography of these beetles will be discussed as traits evolved under non-seasonal climatic conditions, and compared with those of the temperate (Japanese) species studied by similar methods.

Next Week

Tuesday, Feb 11, noon seminar speaker will be Martin Moynihan, STRI senior scientist.

Social strategies of Reeves' pheasants: problems of choice.

PEOPLE

Arrivals

- Robin Foster, STRI scientist, Feb 1-May 1, to continue his research at STRI.
- Manuel Demaria, Universidad Nacional de Cordoba, Argentina, Exxon assistant, Feb 2-Jun 30, to work with Stephen Emlen on his Jacana project.
- Darius Sarshar, Cambridge Univ., Feb 1-Jun 30, to work on the Jacana Project with Stephen Emlen.
- Maria del Pilar Angulo, Univ. de los Andes, Colombia, Feb 4-May 31, STRI-/USDA internship with J. Wright, to work on the effects of the dry season



Paul Ewald, Burch Fellow from Amherst University, answered questions informally after his well-attended seminar on Jan 28 at the Tupper Center. Dr. Ewald is conducting research and writing a book on how evolutionary principles can explain variations in virulence among human pathogens, such as AIDS and cholera ••• Paul Ewald, becario Burch de la Universidad de Amherst, contestó preguntas informalmente luego de su muy concurrido seminario el 28 de enero en el Centro Tupper. El Dr. Ewald lleva a cabo investigaciones y está escribiendo un libro sobre cómo los principios evolutivos pueden explicar las variaciones de virulencia entre patógenos humanos, como lo son el SIDA y el cólera.

(Foto: M.A. Guerra)

on understory plants on BCI.

- Ernest Williams, Harvard Univ., Feb 1-Mar 31, to work on his publications at Gamboa.
- Francisco Dallmeier, SI/MAB Program, Feb 4-6, to consult with Ira Rubinoff and Richard Condit. Also arriving, Isamu Yamada, Kyoto University, to consult with staff and visit BCI. Dr. Yamada will be in Panama until Feb 11.
- Walter Carson, Cornell University, Feb 5-26, to work on the dynamics of tropical forests on BCI.
- Takeshi Suka, Kyoto University, Feb 5-May 5 Japan, to do studies of kin recognition of the stingless bee *Trigona barrocoloradensis* on BCI.
- Kimberly Kolb, Feb 6-May 6, to work on M. Tyree's project on BCI.
- Alain Schmitt and Dieter Baurecht, University of Vienna, Austria, Feb 6-9, to do research on the neurobiology of wandering spiders on BCI.
- Patricia Hansen, Temple University, Feb 7-Mar 28, to collaborate with Richard Cooke on revision of manuscripts and the up-dating and management of archaeological data bases.

Departures

- Hector Guzman, Oil Spill Project, Feb 2-11, to Isla Gorgona, Colombia, to continue studies of reproduction, growth and restoration of corals.
- Klaus Winter, STRI scientist, Feb 1-20, on official business at the Univ. of Wurzburg, Germany.
- Alejandro Arze, STRI security officer, Feb 6-15, to attend the National Conference on Museum Security in Washington, D.C.

Felicidades

- A Xenia Saavedra de Guerra, del Proyecto del Derrame de Petróleo, por el nacimiento de su hija, Ana Carolina, el 6 de enero; pesó 6 lb. 14 oz.
- A Mireya Montenegro de Amaris y a Pablo Amaris, asistente del director de seguridad del STRI, en el nacimiento de su hija Susana Paola el 26 de enero; pesó 8 lb. 1 oz. y midió 51 cm.

THINGS YOU SHOULD KNOW**Fortuna Station ••• La Estación de Fortuna**

At the end of January, after three years of existence, the STRI Fortuna Station, will cease to be available to STRI staff and visitors. The station, two units in the town of Los Planes, Chiriquí, was on temporary loan to STRI by the Instituto de Recursos Hidráulicos y Electrificación (IRHE). It will now house the workers who will construct the second phase of the Fortuna Dam. STRI is very grateful to IRHE for having allowed us to use these units that provided valuable living and working space for our researchers. We also thank Ms. Obdulia Martínez, who gave assistance to our visitors and helped the VSO with the management of the station, and to other IRHE personnel who in various ways made visits to Fortuna both pleasant and productive.

Nevertheless, IRHE has facilities at Fortuna where STRI researchers could stay for an overnight visit. Researchers who wish to visit or work at Fortuna should contact the Visitor Services Office. As before, the VSO will assist researchers to obtain the necessary permit from IRHE. A copy of an INRENARE permit for Fortuna must accompany the application form.

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A finales de enero, luego de 3 años de existencia, la Estación de Fortuna del STRI no seguirá disponible para el personal del STRI o sus visitantes. La estación, que consta de dos unidades en Los Planes, Chiriquí, fué prestada temporalmente al STRI por el IRHE. En el presente, se utilizará para albergar los trabajadores que construirán la segunda fase de la represa de Fortuna. El

Instituto está muy agradecido al IRHE por habernos permitido el uso de sus unidades. Estos suministraron el espacio necesario para que los investigadores que tuvieron la oportunidad de visitar el área, vivieran y trabajaran cómodamente. También queremos agradecer a Obdulia Martínez, quien brindó su asistencia a nuestros visitantes y ayudó a la Oficina de Visitantes con el manejo de la estación, y a muchos otros empleados del IRHE, quienes de diversas maneras, hicieron posible que las visitas a Fortuna fueran tanto provechosas como placenteras.

Sin embargo, el IRHE tiene instalaciones en Fortuna donde investigadores del STRI podrían pasar la noche. Científicos que deseen visitar o trabajar en Fortuna deberán ponerse en contacto con la Oficina de Visitantes. Igual que en el pasado, la Oficina de Visitantes ayudará con los trámites para los permisos del IRHE. Una copia del permiso de INRENARE deberá acompañar la aplicación para obtener el permiso.

Reminder from the Library ••• De la Biblioteca

Please show your STRI identification to the guard before entering the library. This is the standard procedure and the guard has been instructed to do so. Thank you very much for your cooperation ••• *Se les agradecerá mostrar su identificación del STRI al guardia de seguridad de la biblioteca. Este es el procedimiento regular y el guardia tiene instrucciones de ponerlo en práctica.*

Position Available

Part-time temporary help wanted to maintain a reprint collection and bibliography on ecology and climatic change. Position is in a paleoecology laboratory engaged in reconstructing the ice age history of the Isthmus of Panama and the Amazon rain forests. Other workers in the laboratory are engaged in pollen and sediment analysis. English speaking essential, with competence at typing and ability to enter bibliography into a computer. Send CV with references to "Paleoecology", Office of Human Resources, Tivoli Administrative Offices. For more information, please contact Paul Colinvaux, Tupper Center.

At Tupper Center

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| Tue, Feb 4 | Review of STRI Research Vessel Design, ODC, 9:30 am, Small Meeting Room. |
| Wed, Feb 5 | <i>Amigos de la Biblioteca</i> Meeting, 9 am, Small Meeting Room. |
| Thu, Feb 6 | Bocas Eco-development Project Working Group Meeting, 1:30 pm, Small Meeting Room. |

ANNOUNCEMENTS

Fellowship Recipient

Miguel Piñeros, STRI Exxon Fellow from Colombia, received a 3 years OPRS Fellowship from the Australian Government, to attend a doctoral program in plant molecular biology at the University of Adelaide, Adelaide, Australia.

STRI February Birthdays

Alcibiades Cedeño	2
Martin Moynihan	5
Gilberto Batista	6
Eduardo Navarro	6
Mireya Correa	6
Gloria Zelaya	7
Karl Kaufmann	8
Roberto Borrel	10
Isis Estribi	12
Ricardo Cortez	14
Georgina De Alba	15
Walter Dillon	18
Robin Foster	18
Gilberto Ocaña	22
Alvaro Gonzalez	27
Consul Chamarro	28
Arturo Cerezo	28
Vielka Chang-Yau	29

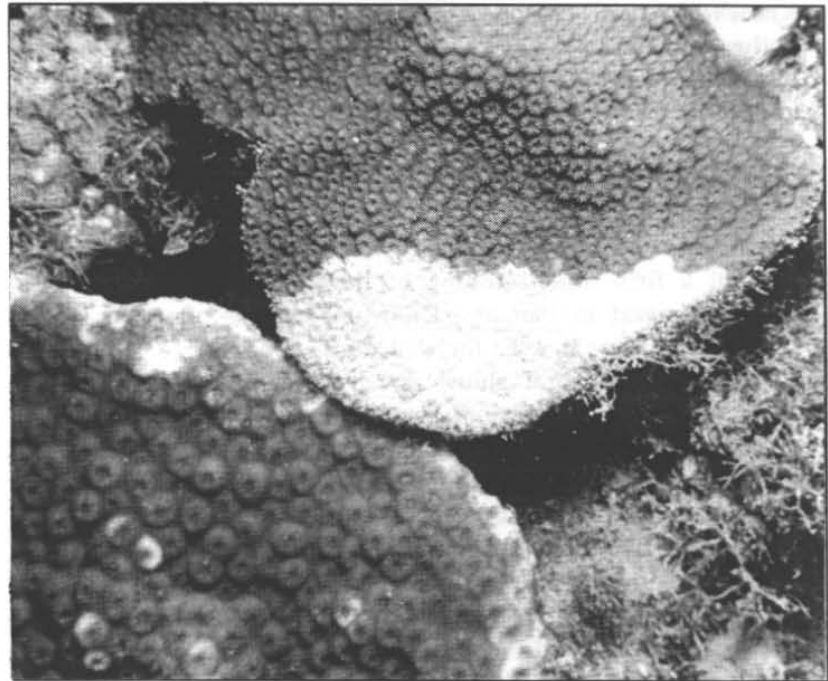
**Voleibol**

El equipo mixto de Tupper ganó el partido de voleibol el viernes 24 de enero de 1992, 3 a 1 al equipo mixto de Tívoli. Invitamos a todos los interesados a participar en los juegos que se realicen en el Instituto.

El viernes 31 de enero de 1992 tendremos un partido amistoso entre los equipos mixtos de STRI vs ANCON en los estacionamientos del Edificio Tívoli a las 4:30 pm. Todos están invitados.

Se Vende ••• For Sale

Electric rice cooker, Toshiba RCK-5JT (with timer and warmer), 0.54 l, color blue, almost new, from Japan. \$60. Contact: Koji Nakamura, tel: 60-1580, until Feb. 6 ••• Olla eléctrica para cocinar arroz, marca Toshiba RCK-5JT (con ajustador de tiempo y calentador), 0.54 l, de color azul, japonesa, casi nueva, por \$60. Comuníquese con Koji Nakamura, Tel 60-1580, antes del 6 de febrero.



Individuals of *Montastraea annularis* showing the phenomenon of bleaching ••• Ejemplares de *Montastraea annularis* que muestran el fenómeno de decoloración.
(Foto: C.C. Hansen)

FROM OTHER SOURCES

Smithsonian Scientist Identifies Sibling Species in Widespread Caribbean Coral

taken from Smithsonian Institution News Service

A widespread Caribbean coral, *Montastraea annularis*, long assumed to be a single species, has now been shown to consist of at least three sibling species, according to Dr. Nancy Knowlton, a marine biologist at the Smithsonian Tropical Research Institute, in a report published in the Jan. 17 issue of the prestigious journal *Science*.

The findings are significant, Knowlton says, because this coral is frequently used as the equivalent of a "laboratory rat" for reef studies in the tropical western Atlantic. Many studies—some aimed at understanding global climate change and the mysterious phenomenon of coral bleaching—may have to be reconsidered in light of the new systematics research.

For example, the two forms of *Montastraea* geologists most commonly use to determine past sea temperature, she says, have different oxygen isotope ratios. The different values for each species are equivalent to those produced by major oceanographic temperature differences. The natural pale coloration of the third form, she adds, has been misinterpreted as bleached.

"Most people in this business will be relieved by these findings,"

Knowlton says. "The variability of *Montastraea* has bothered many investigators for some time and has introduced a lot of "noise" into studies involving this taxon."

As concerns grow about the health of marine ecological systems, Knowlton adds, "these findings highlight the importance of and the need for systematics research. Scientists cannot conduct good environmental research without a firm understanding of the systematics of organisms used in biomass. Unfortunately, we often simply don't have it, even for well-studied species."

Although this coral shows great variation in its appearance in shallow waters, Knowlton says, failure to distinguish them as separate species reflects long-standing emphasis on environmental sources of variation—that is, variation due to local ecological conditions, rather than variation shaped by natural selection through the process of evolution.

Corals for Knowlton's work came from reefs off the coast of Panama and Venezuela. Knowlton's report details the behavioral, biochemical and micromorphological methods she and her co-investigators used to distinguish the species.

The corals' behavior alone strongly suggests the existence of separate species, Knowlton says. Aggressive behavior in marine invertebrates often has a genetic base. When Knowlton placed two different morphotypes of *M. annularis* together in aquaria, one type of coral mounted an attack against the other, resulting in conspicuous damage, typically within one day. This "contact-induced" aggression did not occur among colonies of the same morphotype.

Evidence of genetic differences and lack of interbreeding, she says, are shown in the proteins of these species, through the technique of protein electrophoresis, a method routinely used to recognize sibling species.

Finally, even traditional morphologic methods can be used to distinguish these species. Earlier studies failed to detect them, Knowlton says, because analyses were primarily based on one of the three morphotypes. By definition, sibling species are morphologically similar and therefore difficult to distinguish with traditional methods.

"The standard independent techniques we used provide completely consistent, and therefore unambiguous, confirmation of the specific distinctiveness of the three shallow-water morphotypes of *M. annularis*," Knowlton says*

STRI NEW PUBLICATIONS

- Aiello, Annette.** 1991. "*Adelpha ixia leucas*: immature stages and position within *Adelpha* (Nymphalidae)." *Journal of the Lepidopterists' Society* 45(3): 181-187.
- Allen, Gerald R. and Robertson, D. Ross.** 1991. "Quatre espèces nouvelles d'Opisthognathidae (Jawfishes) du Pacifique oriental." *Revue Française Aquariologie* 18: 47-52.
- Arosemena, F.A. and Ibáñez, Roberto.** 1991. "Geographic distribution: *Hyla angustilineata*." *SSAR Herp. Review* 22: 133.
- Colinvaux Paul A.** 1991. "A model for the selective advantage of intelligence to breeding females." *Evolutionary Theory* 10: 15-32.
- Díaz, Marco L.** 1991. "Deforestación: Resumen histórico del apocalipsis ecológico panameño." *Punto y Aparte* 1(1): 47.
- Díaz, Marco L.** 1992. "El refugio de vida silvestre Isla Iguana." *La Prensa* (Revista): 17 de enero.
- Díaz, Marco L.** 1991. "Las bombas de Isla Iguana. La verdadera historia." *Punto y aparte* 1(2): 86-87.
- Dudley, Robert, King, V. Ann and Wassersub, Richard J.** 1991. "The implications of shape and metamorphosis for drag forces on a generalized pond tadpole (*Rana catesbeiana*)" *Copeia* 1991(1): 252-257.
- Duke, Norman C.** 1991. "A systematic revision of the mangrove genus *Avicennia* (Avicenniaceae) in Australasia." *Australian Systematic Biology* 4: 299-324.
- Ibáñez D., Roberto, Jaramillo, César A., Solís, F.A. and Jaramillo, F.E.** 1991. "Geographic distribution: *Hyla fimbrimembra*." *SSAR Herp. Review* 22: 133-134.
- Robertson, D. Ross.** 1991. "Increases in surgeonfish populations after mass mortality of the sea urchin *Diadema antillarum* in Panamá indicate food limitation." *Marine Biology* 111: 437-444.
- Schultz, William G.** 1991. "Una mariposa contra el SIDA." *Conozca Más* 2(8): 38-39.
- Solís, F.A., Ibáñez D., Roberto and Tejera, Víctor H.** 1991. "Geographic distribution: *Clelia scytalina*." *SSAR Herp. Review* 22: 135.
- Tyree, Melvin T., Snyderman, David A., Wilmot, Timothy R. and Machado, José Luis.** 1991. "Water relations and hydraulic architecture of a tropical tree (*Schefflera morototoni*). Data, models, and a comparison with two temperate species (*Acer saccharum* and *Thuja occidentalis*).

"What has been spoiled through man's fault
can be made good again through man's work."

I. CHING

STRI newsletter supplement

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STRI NEW BOOKLIST

- Acoustic behaviour of insects: an evolutionary perspective / Winston J. Bailey. QL496.B35 1991X STRI.
- The American land and fresh-water isopod Crustacea, by Willard G. Van Name. QL444.M34V36 1936 STRI.
- Aphids: their biology, natural enemies, and control / edited by A.K. Minks and P. Harrewijn. SB945.A5A64 v.C 1987X STRI.
- Chromosome engineering in plants: genetics, breeding, evolution / edited by P.K. Gupta and T. Tsuchiya. QK981.35.C493 1991X STRI.
- The Concise Oxford dictionary of zoology / edited by Michael Allaby. Ref QL9.C66 1991X STRI.
- Crocodiles & alligators of the world / David Alderton. Ref QL666.C9A33 1991b STRI.
- The Decade of destruction: the crusade to save the Amazon rain forest / Adrian Cowell. GF532.A4C69 1990X STRI.
- Developing Amazonia: Deforestation and social conflict in Brazil's Carajás programme. HC188.A5H17 1989 STRI.
- Diccionario manual e ilustrado de la lengua española / [coordinador, Alonso Zamora Vicente]. Ref PC4625.D527 1989X STRI.
- Dictionary of environmental science and technology / Andrew Porteous. Ref TD169.3.P67 1991X STRI.
- Distribution and taxonomy of birds of the world / Charles G. Sibley and Burt L. Monroe, Jr. Ref QL678.S54 1990X STRI.
- Encyclopedia of human evolution and prehistory / edited by Ian Tattersall, Eric Delson and John Van Couvering. Ref GN281.E53 1988X STRI.
- Environment and development in Latin America: the politics of sustainability / edited by David Goodman and Michael Redclift. HC130.E5E58 1991X STRI.
- Excavations at Altun H, Belize, 1964-1970 / David M. Pendergast. F1445.1.A5P39 v.3 STRI.
- Genetic ecology of whales and dolphins: incorporating the proceedings of the workshop on the genetic analysis of cetacean populations / edited by A. Rus Hoelzel. QL737.C4G32 1991 STRI.
- Global forest resources / Alexander S. Mather. SD131.M42 1990 STRI.
- Green development: environment and sustainability in the Third World / W.M. Adams. GF900.A219 1990 STRI.
- Herbal medicine past and present / John K. Crellin, and Jane Philpott. Ref RS164.B324C74 1990X STRI.
- Innovation and environmental risk / edited by Lewis Roberts and Albert Weale. T174.3.I53 1991X STRI.
- Isthmian canal policy questions; Canal Zone -Panama Canal sovereignty; Panama Canal modernization, new canal. Selected addresses, by Daniel J. Flood of Pennsylvania. HE537.8.F63 1966 STRI.
- Rainforest politics: ecological destruction in South-East Asia / Philip Hurst. SD418.3.A785H87 1990X STRI.
- Reproductive behaviour of insects: individuals and populations / edited by W.J. Bailey and J. Ridsdill-Smith. QL496.R38 1991X STRI.
- Seaweeds: their environment, biogeography, and ecophysiology / by Klaus Luning. QK570.2.L8613 1990X STRI.
- Statistical methods / George W. Snedecor, William G. Cochran. Ref QA276.12.S59 1989X STRI.
- Vector of death: the archaeology of European contact / Ann F. Ramenofsky. E98.P76R36 1987X STRI.
- The World at 18 000 BP / edited by Olga Soffer, Clive Gamble. GN741.W67 1990X v.1 STRI.
- A World list of mammalian species / G.B. Corbet and J.E. Hill. Ref QL708.C67 1991X STRI.