

STRI newsletter

August 27, 1993

SMITHSONIAN TROPICAL RESEARCH INSTITUTE - Apartado 2072, Balboa, Panamá

No. 35

TUPPER CENTER SEMINARS

No noon seminar scheduled for Tuesday, Aug 31.

PEOPLE

Arrivals

- Pilar Angulo, University of Vermont, Aug 28-31 Dec, to work with Melvin Tyree in his project on BCI.
- John Barone, University of Utah, Aug 28-31 Dec, to do research on the maintenance of tropical forest tree diversity: a test of two Janzen-Cornell hypothesis.
- Howard Barnes, Assistant Director for Scientific Support Services, Aug 31, to initiate work at STRI.
- Marco Raineri, Latin American assistant from Universidad Catolica del Norte, Chile, Aug 31-30 Nov, to work with John Christy at Naos.
- Lorena Brey, Latin American assistant from Universidad Simon Bolivar, Venezuela, Sep 1-30 Nov, to work with Ross Robertson and Ken Clifton at San Blas.

Departures

- A. Stanley Rand, Aug 31-26 Sep to Malaga, Spain, to attend the International Ethological Conference and take a short vacation.
- Martin Moynihan and Olga Linares to Malaga, Spain, to attend the International Ethological Conference.

Howard Barnes, new Assistant Director for Scientific Support Services

Howard (Harry) Barnes arrives this coming week to initiate work at STRI as our new Assistant Director for Scientific Support Services. Barnes has a degree in Science from the Northeast London Polytechnic, UK, and a M.S. from Heriot-Watt University Business School, Edinburgh. Before coming to STRI he was Assistant Director of the Bermuda Biological Station for Research, Inc., a non-profit



Melvin Aguirre, biology student from the University of Panama, and Ana Maria Villarreal from STRI conduct studies on different species of seedlings at the new greenhouse established at the Metropolitan Nature Park by the STRI's Center for Tropical Forest Science ••• Melvin Aguirre, estudiante de biología de la Universidad de Panamá y Ana María Villarreal de STRI llevan a cabo estudios de diferentes especies de plántulas en el nuevo vivero establecido en el Parque Natural Metropolitano por el Centro de Ciencias Forestales del Trópico de STRI.

(Foto: Cortesía del Parque Natural Metropolitano)

organization that provides research and educational facilities for programs in marine and atmospheric science. As head of the Operations Department, Barnes' responsibilities included the supervision and management of the Marine/Diving Laboratories, ship operations, Hotel/Dining/Conference facilities, buildings and grounds. Barnes acted as senior technical advisor to scientists and teachers using the facilities and was responsible for preparing and overseeing expenditure of the annual operating and capital budgets, and preparing and submitting proposals to various funding agencies.

At STRI Barnes will coordinate and oversee the running of all scientific facilities (Naos, Tupper, BCI, canopy crane, specialized laboratories, research vessel, etc.) as well as supervise scientific support services (photography, scientific computing, scientific diving). His office will be in the Tivoli Building.

He will soon be joined in Panama by his wife, Penny, who is a postdoctoral researcher in marine biochemistry. We welcome them to the STRI community.

Thank-You Note

Christina Gadjia, from the STRI Office of Development at Washington D.C. wishes to thank everyone at STRI in Panama for their help and patience while she "learned the ropes" this past summer. Christina acted as coordinator in Washington while Mary Ann Lindgren took leave for three months. Mary Ann returns on Sep 7th and Christina will work two days a week as a part-time intern.

THINGS YOU SHOULD KNOW**At Tupper Center**

- Tue, Aug 31 *Fundación Natura* Workshop, Conference Hall, 8am-5pm.
 Wed, Sep 1 *Fundación Natura* Workshop, Conference Hall, 8am-5pm.
 Thu, Sep 2 *Fundación Natura* Workshop, Conference Hall, 8am-5pm.

At the Culebra Marine Biological Reserve

- Tue, Aug 31 *Escuela Nuevo Belén* 8:30-11:30 am.
 Wed, Sep 1 *Escuela Nuevo Belén* 8:30-11:30 am.
 Thu, Sep 2 *Escuela Nuevo Belén* 8:30-11:30 am.

The Legal Issues of Scientific Research at STRI

In recent years governments have come to value their country's natural resources much more highly than before. There is an increased effort by the Republic of Panama and many other tropical countries to protect their environment and conserve their flora and fauna. STRI strongly supports these efforts. However, this has led to stronger regulations for collecting and exporting scientific specimens. It is thus extremely important that every scientist and official visitor be in full compliance with all the laws and regulations governing field work and the collecting and importing or exporting of archaeological, biological and geological samples. Failure to do so jeopardizes both the individual and STRI's ability to conduct research in our host countries.

In Panama various government agencies are involved in issuing permits. The "Instituto de Recursos Nacionales Renovables" (IN.RE.NA.RE.), Panama's environmental protection agency, requires that all scientists obtain permits to do research, collect and import or export plant and animal specimens. It also controls all activities within national parks and reserves, and authorizes the collection and exportation of specimens covered by the "Convención sobre el Comercio Internacional de Especies Amenazadas de Fauna y Flora Silvestres" (CITES). "Recursos Marinos" manages permits involved in marine research; the "Ministerio de Comercio e Industrias"

authorizes the collection of soils, rocks and fossils, and the "Instituto Nacional de Cultura" (INAC) is the equivalent body for anthropological and archaeological research permits.

It is the responsibility of all STRI staff and visitors to obtain the necessary permits before starting any field research in the Republic of Panama or any other country where official STRI research is to be conducted. Be aware that in some countries permits for collecting are different from those for exporting samples. Permits should be carried at all times, and shown to any officials requesting them. If you are not sure of what is required of you, or if you need further details, the STRI Visitor Services Office will be glad to assist you.

From the Procurement Department

Remodeling of the Procurement Department to create additional work space is scheduled to begin very soon and to last approximately one month. During this time part of the Procurement Department will be moved to another office. Your patience and cooperation with any inconvenience or delay during this period will be greatly appreciated ••• *Prontamente se iniciarán los trabajos de remodelación del Departamento de Compras para crear espacio de trabajo adicional. Esta remodelación durará aproximadamente un mes y parte del personal se mudará a otra oficina. Mucho se le agradecerá su paciencia y colaboración respecto a los inconvenientes y demoras que podrán suscitarse durante este período.*

Nueva Dirección de la Fundación Natura

Los miembros de la Fundación Natura se despidieron de STRI ayer jueves 26 de agosto con un brindis en el Centro Tupper. La mudanza de las instalaciones de STRI, donde iniciaron operaciones hace más de un año, será durante la semana del 6-10 de septiembre. Su nueva dirección será Casa 154A, Calzada de Amador, y mantendrán su dirección postal: Apdo. 2190, Zona 1, Panamá. Sus nuevos teléfonos serán el 28-1934 y 28-0938. Fax No. 28-1936. Los extrañaremos y les deseamos mucho éxito en sus nuevas oficinas.

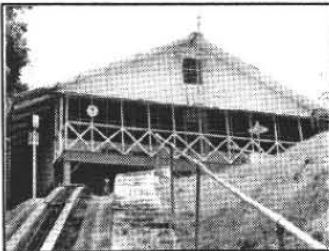
ANNOUNCEMENTS**New Honor**

The "Institut National de la Recherche Agronomique", "Ministere de L'Agriculture et de la Foret" and "Ministere de la Recherche et de la Technologie" of France selected Stanley Heckadon Moreno to be a member of the Committee of the "Centre de Cooperation Internationale en Recherche Agronomique por le Developpement" (CIRAD) Forestry Department. This committee will

consist of 10 members from different disciplines, institutions and countries. The broad mandate of the committee is to direct the research program in the CIRAD Forestry Department. Heckadon was asked to serve as the representative for Central and Latin America and the Social Sciences. The new Program Committee will meet once or twice a year. The first session will take place on November 16, in Paris.

Proposal to Save the Old Dorm

by Stan Rand and Liz Stockwell



Thirty BCI residents and STRI staff including Ira Rubinoff voiced strong support for a proposal to save the original building on BCI from its planned demolition at a meeting at the Tupper

Center last Tuesday. Subcommittees of volunteers will begin work on aspects of a project to renovate the old dorm in a way that will exploit its site and its historical associations. They will report at a meeting scheduled for late September. Anyone interested in helping with the project should contact a committee member.

A consensus to save the old dorm was reached after a discussion of pros and cons. A number of possible alternatives for future use were considered. The strongest support was voiced for a visitors center but it was recommended that other possible compatible uses be included in renovation plans if possible. One idea for renovation included, on the first floor, a large unscreened bohío area overlooking the lake to be used for talks, meetings and receptions and an air conditioned room for displays and a library. On the second floor was a large screened porch looking over the lake and into the forest. Two dorm rooms redecorated as '30s lab and bedroom. Several modifications of this plan were discussed including eliminating air conditioning and taking out most of the partitions on the upper floor to create a large room that could be used as work space by a course or a large project. These suggestions as well as several others will be considered by the committee drawing up a plan for renovation.

The STRI Office of Design and Construction has estimated that it would cost \$45,000 to demolish and replace the old dorm and \$60,000 to repair it. These estimates are very tentative and must be revised when a final plan is agreed upon. The ODC has agreed to have the site evaluated for renovation. The

need for continued maintenance on the building must be considered.

Dr. Rubinoff emphasized that funding for the renovation must come from outside STRI. Possible sources of funds suggested at the meeting included the alumni of BCI, current visitors, the OAS through the government of Panama, and the sale of t-shirts.

In explain the plan of work and the budget for implementing it. The proposal must also have a statement of purpose, a justification, and a brief history of the building.

Anyone willing to help with the project to save the old dorm should contact one of the persons of the action committees.

Committees and chairpersons are:

Renovation plan: Oris Acevedo, Jorge Ventocilla and Cindy Sagers.

Budget: Leolodo León

History: Beth King

Illustrations and Layout: Pat Rand and Maria Luz Calderón

Proposal text: Stan Rand

Fund raising: George Angehr and Lisa Barnett

A meeting to consider the subcommittee reports is scheduled for Tuesday, September 28 at 10am, Tupper Center Large Meeting Room.

ENTRENAMIENTO

Cursos en el CATIE

Transferencia de Tecnología en Silvicultura de Árboles de Uso Múltiple (27 de septiembre-8 de octubre):

Los objetivos de este curso son los de conocer la información agroforestal, silvícola y socioeconómica básica y de aplicación práctica generada en América Central y a la vez diseñar cursos para capacitar a extensionistas y promotores forestales sobre los conocimientos de silvicultura y socioeconomía de plantaciones con especies de árboles de uso múltiple (AUM); transferir a los pequeños y medianos reforestadores los resultados de las investigaciones generadas y válidas por los proyectos LEÑA y MADELEÑA implementados por las instituciones forestales nacionales y el CATIE de la región. El contenido del curso serán la introducción, bases ecológicas para el manejo de plantaciones, selección de sitios, especies y procedencias, tecnología para el abastecimiento y manejo de semillas de las 14 especies prioritarias,

establecimiento de sistemas de plantación, economía de sistemas de plantación de las 14 especies, técnicas para planificar la capacitación y la asistencia a extensionistas forestales.

Requisitos: técnicos, medios agropecuarios o forestales de instituciones nacionales o instituciones de la red de extensión. Sede: Honduras. Costo por participante: \$1,150 (no incluye costos del pasaje aéreo). Para mayor información y la solicitud de admisión, favor de acercarse a la Oficina de Educación en el Centro Tupper.

Book Sale

The publications Department of the Missouri Botanical Garden is offering the following books on Panama at reduced prices:

MSB-10: D'Arcy and Correa: *The Botany and Natural History of Panama* \$36. Sale: \$18.

MSB-17: D'Arcy: *Flora of Panama: Checklist and Index. Part I.* \$40. Sale: \$20.

MSB-18: D'Arcy: *Flora of Panama: Checklist and Index. Part II.* \$51. Sale: \$35.

There may also be fascicles of the *Flora of Panama* on sale. Those interested may call (314) 577-9534 or Fax (314) 577-9594 to place the order.

FUNDING

Right and Resources

Right and Resources addresses global issues of economic and social justice. Our mission is to assist local communities with small-scale enterprise development, land rights, and sustainable management of natural resources through programs that are socially acceptable, economically sound, and environmentally sustainable. For more information contact us at Right and Resources, 1101 North Highland Street, Suite 411, Arlington, Virginia 22201. Tel. (703) 841-9771 • Fax (703) 841-9774.

NEW STRI PUBLICATIONS

Acosta Moreno, Luis Alberto. 1992. "Investigaciones en Corales y Arrecifes Coralinos." *Boletín Ecotropica: Ecosistemas Tropicales*, Suplemento 1: Taller de Arrecifes Coralinos. Investigación y Manejo: 29-33.

Aide, T. Mitchell. 1993. "Patterns of Leaf Development and Herbivore in a Tropical Understory Community." *Ecology* 74(2): 455-466.

Augspurger, Carol K. and Kitajima, Kaoru. 1992. "Experimental Studies of Seedling Recruitment from Contrasting Seed Distributions." *Ecology* 73(4): 1270-1284.

Budd, Ann F., Mann, Keith O. and Guzmán, Héctor M. 1993. "Environmental Interpretation Using Insoluble Residues within Reef Coral Skeletons: Problems,

Pitfalls, and Preliminary Results." *Coral Reefs* 12: 31-42.

Cooke, Richard G. 1993. "The Past and Present Distribution of Sea Catfishes [Ariidae] in a Small Estuarine Embayment in Panama: Relevance to Precolumbian Fishing Practices." In: *Explotación de Recursos Faunísticos en Sistemas Adaptativos Americanos*, compiled by José Luis Lanata. *Arqueología Contemporánea* 4: 57-74.

Molofsky, Jane and Fisher, Brian L. 1993. "Habitat and Predation Effects on Seedling Survival and Growth in Shade-Tolerant Tropical Trees." *Ecology* 74(1): 261-265.

Páez, Vivian P., Bock, Brian C. and Rand, A. Stanley. 1993. "Inhibition of Evoked Calling of *Dendrobates pumilio* due to Acoustic Interference from Cicada Calling." *Biotropica* 25(2): 242-245.

Wcislo, William T., Wille, Alvaro and Orozco, Enrique. 1993. "Nesting Biology of Tropical Solitary and Social Sweat Bees, *Lasioglossum (Dialictus) figuerisi* Wcislo and L. (D.) *aeneiventre* (Friese) (Hymenoptera: Halictidae)." *Insect Sociaux* 40: 21-40.

From: 365 Ways to Save our Planet

• Page-a-Day Calendar •

"To waste, to destroy, our natural resources, to skin and exhaust the land instead of using it so as to increase its usefulness, will result in undermining in the days of our children the very prosperity which we ought by right to hand down to them."

Theodore Roosevelt
Message to Congress, Dec 3, 1907



What sloths do when no one's around

Reminder ••• Recorderis

STRI will hold a memorial service for Alan P. Smith, on Monday, Sep 20 at 4:00pm at the Earl S. Tupper Center Auditorium ••• *STRI agradecerá su asistencia a un acto en memoria de Alan P. Smith, a las 4pm del día lunes, 20 de septiembre en el Auditorio del Centro Tupper.*

Coffee Hour

Dr. Robert S. Ridgely, author of the newly translated book *Las Aves de Panamá*, will be at STRI for a coffee hour, to meet with interested persons on September 20, 10:00am, at the Tupper Center Exhibit Hall. Copies of the book will be for sale at the STRI Mini-bookstore.

Surfside to Tupper

Due to remodeling of the Surfside facility at Naos, the E.S.P. staff moved to Tupper this past week for 9 months to a year. Please note their office numbers and telephone extensions: Karl Kaufmann, office 609, ext. 334. Carlos Guevara, Ricardo Thompson and Héctor Guzmán, office 803, ext 245. Gabriel Jácome, Xenia Guerra and Zuleika Pinzón, office 339, ext. 286. We welcome them to the Tupper Center.

Missing ••• Extraviada

Black tape recorder from Exhibit Hall, Tupper Center. If somebody has borrowed it, please return it to Marcela Vargas, Reception Desk ••• *Una casetera negra que se encontraba en el Salón de Exhibiciones del Centro Tupper. Si alguno la ha tomado prestada, favor de devolverla a Marcela Vargas en la Recepción.*

ANNOUNCEMENTS**Secretary Adams to Retire**

Robert McC. Adams announced this week that he would retire next year as head of the Smithsonian Institution, to return to writing, research and teaching. Adams, 67, an anthropologist who was provost of the University of Chicago before joining the Smithsonian in 1984, plans to take a temporary part-time job teaching at the University of California at San Diego, after retirement.

The Chief Justice of the United States, William H. Rehnquist, appointed a committee formed by SI regents to search for a successor for the job, since no front-runners to succeed Adams have emerged. Rehnquist issued a statement praising Secretary Adams for "sustaining the excellence of the Smithsonian's scholarly research, on enhancing the quality of its exhibitions and on expanding its educational programs."

Empleados Nuevos en STRI

- Rolando Pérez fue escogido para ocupar la posición de Asistente de Investigación bajo la supervisión de Richard Condit. Rolando es egresado de la Universidad de Panamá, donde obtuvo su licenciatura en Química y Biología. Anteriormente, se ganó beca Exxon con STRI y trabajó desde 1990 en el Proyecto de Dinámica del Bosque. También trabajó con Kaoru Kitajima en Barro Colorado. Aunque un poco tarde, le damos una cordial bienvenida.
- Ricardo Cajar ocupa la posición de Mecánico para motores fuera de borda en Barro Colorado, desde el 22 de agosto. Ricardo trabajó en Cardoze y Lindo por espacio de 8 años hasta el momento de empezar a trabajar con el Instituto. Felicidades, y mucho éxito en su nuevas funciones.
- Eduardo Sierra fue elegido para trabajar en Barro Colorado con el Proyecto de Dinámica de Bosque a partir del 5 de septiembre. Sierra es conocido de muchos en STRI, ya que anteriormente prestó sus servicios en este Instituto como contratista. Estudió en la Universidad de Panamá donde se graduó de Botánico. Le damos una cordial bienvenida.

Safety News ••• Sobre Seguridad

Employee Report of Unsafe or Unhealthful Working Condition Program. A new safety program to identify deficient working conditions will be effective starting Mon, Sep 20. All employees are invited to fill the forms of unsafe or unhealthy working conditions identifying imminent danger conditions to José Ramón Perurena, STRI safety officer at the Tupper Center. "Executive Order 12196 requires that agency inspections be conducted within 24 hours for employee reports of imminent danger conditions, within three working days for potentially serious conditions and within 20 working days for other than serious safety and health conditions." (29 CFR 1960. 28(d)(3)).

Employee Report of Unsafe or Unhealthful Working Condition forms will be placed at mail rooms, staff lounges, shop bulletin boards and facility offices so that these are available to anyone who might need them. Your cooperation in documenting bona fide reports will be appreciated.

Programa para Reportar Condiciones Laborales Peligrosas o Insalubres: A partir del lunes 20 de septiembre se implementará un nuevo programa de seguridad en STRI para que los empleados que encuentren condiciones laborables peligrosas o insalubres las reporten inmediatamente. Se invita a todos los empleados que llenen los formularios diseñados para este menester y los envíen

a José Ramón Perurena, director de seguridad industrial de STRI, en el Centro Tupper. Todo reporte ha de ser investigado en un período de tiempo menor de 20 días laborales de acuerdo a la ley ejecutiva 12196. Los formularios se encontrarán en las áreas de correo, de recreación, en los murales de talleres y en las oficinas administrativas para que estén al alcance de todos. Se agradecerá el uso de estos formularios en una manera responsable para que el nuevo programa sea exitoso.

NEW STRI PUBLICATIONS

- Coronado Rivera, James. 1993. Estudio Experimental del Parasitismo y Desarrollo de Especies de *Ephuta* (Mutilidae: Hymenoptera) en Panamá. Tesis, Panamá: Universidad de Panamá.
- Ibáñez D., Roberto. 1993. "Female Phonotaxis and Call Overlap in the Neotropical Glassfrog *Centrolenella granulosa*." *Copeia* 1993(3): 846-850.
- Jackson, Jeremy B.C., Jung, Peter, Coates, Anthony G. and Collins, Laurel S. 1993. "Diversity and Extinction of Tropical American Mollusks and Emergence of the Isthmus of Panama." *Science* 260: 1624-1626.
- Johnson, Kenneth G. 1992. "Population Dynamics of a Free-Living Coral: Recruitment, Growth and Survivorship of *Manicina areolata* (Linnaeus) on the Caribbean coast of Panama." *Journal of Experimental Marine Biology and Ecology* 164: 171-191.
- O'Donnell, Sean. 1993. "Interactions of Predaceous Katydid (Orthoptera: Tettigoniidae) with Neotropical Social Wasps (Hymenoptera: Vespidae): Are Wasps a Defense Mechanism or Prey?" *Entomological News* 104(1): 39-42.
- Soong, Keryea and Lang, Judith C. 1992. "Reproductive Integration in Reef Corals." *Biological Bulletin* 183: 418-431.

True Facts on Earthquakes and Tidal Waves

Verdades sobre Terremotos y Maremotos by José Ramón Perurena

Many of you may be aware of the rumors/news about an earthquake and/or tidal wave which is supposed to strike Panama "soon". This "alarm" was sounded by the media based on several statements issued by the office of the "Sistema Nacional de Protección Civil" (National Civil Protection System) and is based mostly on non-scientific evidence.

It is important to note that Abraham Crocamo's main efforts as Director of Panama's National Civil Protection System have focussed on the education and disaster preparedness of all citizens. He hopes to change people's current attitude that Panama is immune to natural disasters. To this end, his office is giving Civil Protection awareness and preparedness seminars around the country. Regretfully, the media, in its typical sensational

style, only highlights Crocamo's "alarmist" statements without broadcasting or publishing the entire story.

The fact is that no earthquake can be accurately forecasted in any reliable scientific manner; only cyclic patterns have been detected that describe the occurrence of these events. Predictions made are not accurate and they cannot be conclusive. Moreover, telluric movements occur on a daily basis because the earth core is a dynamic system. Geoscientists assure us that today in Panama there is no greater probability of the occurrence of a major destructive earthquake than it has been in the past 50 years.

According to Civil Protection there were around 350 telluric movements last year, and thus far this year, over 900 telluric movements have been recorded. This would appear to indicate that something is happening or about to happen. However, according to Eduardo Camacho, seismologist at the University of Panama's Instituto de Geociencias (School of Geoscience, University of Panama), the institute acquired this year new digital equipment with better filters and installed them at six different stations. Last year there was only one such station with older instrumentation. The increase in recorded events was therefore not a big surprise.

How should we then take these reports from the media? We should take them as they were originally meant to be: as a warning and a challenge. Civil Protection is making us aware of our lack of knowledge and readiness to tackle a major disaster, and it seeks to challenge us to become better prepared for such an event, if it were to happen *

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Muchos de nosotros hemos oído los rumores/noticias sobre un terremoto o maremoto que supuestamente ha de afectar al istmo en cualquier momento. Esta "alarma" ha sido activada por los medios de comunicación social, los cuales se basan en las declaraciones del Director del Sistema Nacional de Protección Civil, Abraham Crócamo. El mensaje que este organismo desea comunicar a la población es que los panameños no estamos necesariamente preparados para responder efectivamente a un desastre natural de alta magnitud, y algo debe hacerse.

El Ing. Crócamo tiene entre sus metas el cambiar la idea de que en Panamá ningún desastre natural grande puede ocurrir, ya que Panamá no está inmune a esta clase de siniestros. Su oficina dicta charlas alrededor del país con el objetivo el crear consciencia en la comunidad de que debemos estar preparados. Sin embargo, los medios de comunicación han logrado alarmar a muchos ciudadanos al exagerar ciertas declaraciones.

El hecho es que ningún terremoto puede predecirse con certeza de manera científica. Lo que podemos observar es que estos eventos tienen una periodicidad característica que depende de muchos factores. Además, movimientos telúricos ocurren a diario; ya que la tierra tiene un centro dinámico activo. Sismólogos aseguran que hoy en Panamá

no hay una probabilidad más grande de que ocurra un terremoto destructor, de la que ha habido en los últimos cincuenta años.

De acuerdo con Protección Civil, se detectaron alrededor de 350 movimientos telúricos el año pasado, y de lo que va en este año, han sido detectados más de 900. Aunque esta información parece alarmante, los números pueden engañarnos. De acuerdo con Eduardo Camacho, sismólogo en la escuela de Geociencias de la Universidad de Panamá, el Instituto Sismotectónico adquirió un nuevo equipo digital el cual cuenta con mejores filtros y es capaz de detectar con mejor efectividad las actividades telúricas ocurridas en el istmo. Además, el año pasado, solo existía una estación de medición; hoy cuentan con seis estaciones y mucho mejor equipo.

Entonces, ¿qué podemos concluir de toda esta información? Debemos tomar el mensaje original del Sistema Nacional de Protección Civil como una advertencia y un reto. Protección Civil nos advierte que Panamá no está preparada para afrontar un desastre natural mayor y nos reta a desarrollar conciencia y a tomar pasos para estar mejor preparados en caso de que un evento de esta índole ocurra ♣

NEW STRI BOOKLIST

- Becoming West Indian: culture, self, and nation in St. Vincent / Virginia Heyer Young. F2106.Y64 1993X STRI.
- Colonization and environment: land settlement projects in Central America / Jeffrey R. Jones. HD333.J66 1990X.
- Current Ornithology, v.5-10. QL671.C976 STRI.
- Dunnock behaviour and social evolution / N.B. Davies; with drawings by David Quinn. QL696.P266D38 1992X STRI.
- Ground beetles (Carabidae) of Fennoscandia: a zoogeographic study / Carl H. Lindroth; scientific editor. pt.1. Specific knowledge regarding the species; pt.2. Maps. QL596.C2L313 1992Y STRI.
- Maya history / Tatiana Proskouriakoff; edited by Rosemary A. Joyce. F1435.P76 1993X STRI.
- Modelling ecological change: perspectives from neocology, palaeoecology and environmental archaeology / edited by David R. Harris and Kenneth D. Thomas. CC81.A84 1989 STRI.
- Nitrogen metabolism of plants / edited by K. Mengel and D.J. Pilbeam. QK898.N6N734 1992 STRI.
- Not by timber alone: economics and ecology for sustaining tropical forests / Theodore Panayotou and Peter S. Ashton. SD247.P68 1992X STRI.
- The Oceans and climate: a guide to present needs. QC981.8.C5O15 1991 STRI.

The Persisting ecological constraints of tropical agriculture / Wolfgang Weischedel and Cesar N. Caviedes.

S481.W45 1993X STRI.

Phyllopsora (Bacidiaceae) / by Lois Brako.

QK585.B3B814 1991 STRI.

Plankton regulation dynamics: experiments and models in Rotifer continuous cultures / Norbert Walz, ed.

QL391.R8P58 1993X STRI.

Plant form: an illustrated guide to flowering plant morphology / Adrian D. Bell.

QK641.B45 1991X STRI.

Plant organelles: compartmentation of metabolism in photosynthetic cells / edited by Alyson K. Tobin.

QK725.P572 1992X STRI.

Proceedings of the 8th International Symposium on Insect-Plant Relationships / edited by S.B.J. Menken, J.H. Visser, and P. Harrewijn.

QL469.I57 1992X STRI.

Rare and endangered biota of Florida / Ray E. Ashton, Jr., series editor.

QL84.22.F6R37 1992X STRI.

Resource selection by animals: statistical design and analysis for field studies / Bryan F.J. Manly, Lyman L. McDonald, Dana L. Thomas.

QL756.5.M34 1993X STRI.

Rethinking the Neolithic / Julian Thomas.

GN776.22.G7T48 1991X STRI.

Scallops: biology, ecology, and aquaculture / [edited by] Sandra E. Shumway.

SH372.S28 1991X STRI.

Selected multilateral treaties in the field of the environment: volume two / edited by Iwona Rummel-Bulska and Seth Osafo.

K3583.S45 1991Y vol.2 STRI.

Soil organic matter dynamics and sustainability of tropical agriculture / edited by K. Mulongoy and R. Merckx.

S599.9.T76S68 1993 STRI.

Sustainable harvest and marketing of rain forest products / edited by Mark Plotkin and Lisa Famolare.

SD387.S87S86 1992X STRI.

Transcriptional regulation in cell differentiation and development: proceedings of the joint British Society for Cell Biology - Company of Biologists Symposium, University of Sussex, April 1992 / organized and edited by P.W.J. Rigby, R. Krumlauf and F. Grosveld.

QH607.T77 1992 STRI.

Transgenic plant / edited by Shain-dow Kung, Ray Wu.

SB123.57.T73 1993X STRI.

Periodicals

Advances in botanical research, v.19, 1993.

Advances in ecological research, v.24, 1993.

Progress in botany, v.54, 1993.