Department of Systematic Biology - Botany & the U.S. National Herbarium

The Plant Press

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National Museum of Natural History

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Botany Profile

Botanist Untangles Caribbean Vines

By Robert DeFilipps

Most people are surprised to learn that the largely tropical dicot family Sapindaceae, source of the edible fruit-bearing trees yielding akee (*Blighia*), rambutan (*Nephelium*) and leechee nuts (*Litchi*), also contains a large number of saponin-laden, toxic vines. The New World representatives of these vines are a special focus of research by curator Pedro Acevedo-Rodríguez.

Indeed, a mere look at some of the species epithets in the vine genus *Serjania* Miller, which is now being revised by Acevedo, can give a premonition of the effects of their various chemical constituents. These include plants named *S. inebrians* ("inebriating, intoxicating"), *S. lethalis* ("lethal"), *S. noxia* ("noxious, injurious"), and *S. piscatoria*, the latter an indication of use as a fish poison. A number of Amazonian Amerindian tribes employ the ichthyotoxic vines to catch fish, by introducing the macerated tissues of the crushed plant into rivers to release their stupefying saponins. As a whole, perhaps about 90 percent of Sapindaceae are usable as fish poison.

Besides their fish-numbing virtues, some vining members of the Sapindaceae exhibit unusual anomalous growth, with stems produced as a rope-like structure, and "watch-spring" tendrils that are probably modified lower cincinni of the inflorescences: they coil in one flat plane, instead of being spirally coiled in three dimensions. In addition, many unisexual-flowered members of this family, such as the *Serjania* and *Talisia* being studied by Acevedo, exhibit a peculiar syndrome wherein populations of the plants produce a male-flowered phase, followed by a female phase, and then by another male phase. This little-explored phenomenon has been termed "sequentially monoecious" and "(duo) dichogamy," and is believed by Acevedo to be a natural way to promote gene exchange among populations. Altogether a fascinating array of inquiries are presented by the neotropical vines, but an even larger research subject, studies of the flora of the West Indies and Caribbean Basin, particularly the Greater Antilles, with their varying degrees of plant generic endemism, is also under his purview.

Acevedo was born in San Juan, Puerto Rico. He received a B.S. from the University of Puerto Rico, Mayagüez in 1977, and later held several technical positions with the U.S. Forest Service studying plants in various Puerto Rican forests including the Luquillo National Forest, followed by employment as a specialist with the Department of Natural Resources, Puerto Rico, doing ecological and floristic work in the Rio Abajo Forest. During this period a multitude of vines were observed and collected in the forests, the genesis of a career-wide interest in their taxonomy and distribution. A major manifestation of this interest is the 498-page book which Acevedo has prepared, now in press, entitled "*Bejucos y Plantas Trepadoras de Puerto Rico e Islas Virgenes*" (Vines and Climbing Plants of Puerto Rico and the Virgin Islands), to be published this year by Sheridan Press, Hanover, Pennsylvania. The 387 species of vines treated here are illustrated by Bobbi Angell, one of the most skilled botanical illustrators.

While a research fellow at the New York Botanical Garden from 1983-1989, Acevedo pursued graduate studies, with Scott Mori (NY) as major professor, and received his Ph.D. from the City University of New York in May 1989, writing a dissertation on *Serjania* Sect. *Platycoccus*. As of April 1989 he took up the position of Associate Curator of Botany in the U.S. National Herbarium, and has maintained an active program of scientific research on the systematics and biogeography of tropical plants. Field studies have taken him to Mexico, South America (Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, Venezuela), and the West Indies (Cuba, Dominican Republic, Jamaica, Puerto Rico, and the U.S. and British Virgin Islands). Various collections have resulted in new species, including the Puerto Rican *Piptocoma acevedoi* Pruski (Asteraceae) and *Calyptranthes acevedoi* Liogier (Myrtaceae) being named for him.

Extensive studies in the Caribbean flora in the 1990s culminated in a major publication by Acevedo and collaborators entitled "Flora of St. John, U.S. Virgin Islands," *Memoirs of the New York Botanical Garden* 78: 1-581 (1996). A substantial grant of $73,500 from the Homeland Foundation in California

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Visitors

Bryan Simon, Brisbane Botanic Gardens, Australia; Poaceae (10/3-10/4).

H. David Clarke, University of North Carolina, Asheville; Guyana collections (10/9-10/13; 12/27-12/31).

Erin Tripp, Philadelphia Academy of Natural Sciences; Guyana collections (10/9-10/13; 12/27-12/31).

Myron Kimnach, *Cactus and Succulent Journal*, Editor; Crassulaceae, Cactaceae, Piperaceae (10/14-10/15).

Gregory Plunkett, Virginia Commonwealth University; Araliaceae: *Polyscias* and *Schefflera* (10/14-10/16).

Arthur Edward Salgado, Christian Brothers University; General research (10/15-10/19).

Lynn Gillespie, National Herbarium of Canada, Canadian Museum of Nature; *Poa* (Poaceae) (10/16-10/26).

Jean Burns, Florida State University; Commelinaceae (10/17-10/21).

Jeffrey Johansen, John Carroll University; Drouet Cyanophyta Collection (10/21-10/22).

Terry Macfarlane, Western Australian Herbarium, Department of Conservation and Land Management; Poaceae (10/21-10/24).

Sonia Franco Martinez, Instituto de Biologia, UNAM, Mexico; Mexican Agavaceae (10/23-10/31).

Abisai Garcia Mendoza, Instituto de Biologia, UNAM, Mexico; Mexican Agavaceae (10/23-10/31).

Qingjun Li, Xishuangbamna Tropical Botanical Garden; General research (10/28-11/14).

Grady Webster, University of California-Davis; Euphorbiaceae: *Croton* and *Phyllanthus* (10/28-11/8).

Fabian Michelangeli, New York Botanical Garden; Melastomataceae (11/4-11/5).

Bonnie Crozier, University of Texas, Austin; Cactaceae (11/7-11/13; 12/9-12/15).

Jose Panero, University of Texas, Austin; Asteraceae (11/7-11/13; 12/9-12/15).

Jorge Crisci, Universidad Nacional de La Plata, Argentina; Onagraceae (11/9-12/17).

Liliana Katinas, Universidad Nacional de La Plata, Argentina; Onagraceae (11/9-12/17).

Piero Delprete, New York Botanical Garden; Rubiaceae (11/12-11/16).

Trish Flaster, Botanical Liaisons; Plants as dietary supplements (11/13-11/14).

Geoffrey Levin, Illinois Natural History Survey; Euphorbiaceae: *Acalypha* sp. (11/13-11/15).

Sue duPont, Maryland Department of Agriculture; Herbarium consultation (11/14).

Xochitl Munn, University of Texas, Austin; Flora of Sierra Mazateca, Mexico (11/14).

Rodney Dever, Shepherd College; Herbarium consultation (11/15).

Peter Hoch, Missouri Botanical Garden, St. Louis; Onagraceae (11/24-12/11).

German Carnevali Fernandez-Concha, Centro de Investigacion de Yucatan; Flora de Guaramacal; Flora Mesoamericana (12/2-12/17).

Continued on page 10

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Travel

Dan Nicolson traveled to Cartagena, Colombia (10/11–10/22) to attend the International Association for Plant Taxonomy (IAPT) business meeting as past president during the 8th Latin-American Botanical Congress.

Maria Faust traveled to St. Petersburg, Florida (10/20–10/25) to present a paper at the Xth International Conference on Harmful Algae.

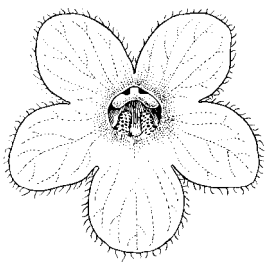
Vicki Funk traveled to Oahu, Hawaii (10/20–11/05) to conduct research on Asteraceae DNA analysis at the University of Hawaii.

W. John Kress traveled to Durham, North Carolina (10/28–10/29) to collaborate with graduate student Kyle Williams and to attend a committee meeting for graduate student Tanya Rehse at Duke University; to Denver, Colorado (11/1–11/2) with **Alice Tangerini** to visit the Denver Art Museum exhibit on "A Passion for Plants" in order to make selections for a future exhibit at NMNH; and to St. Louis, Missouri (12/15–12/17) to attend the "Flora of China" editorial committee meeting.

Paula DePriest traveled to Durham, North Carolina (10/28–10/29) to attend a committee meeting for graduate student Rebecca Yahr at Duke University.

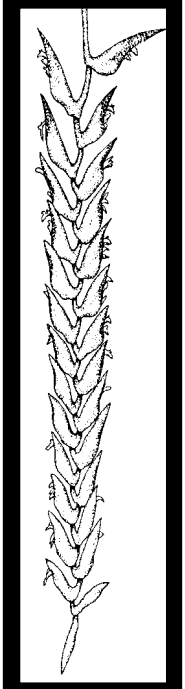
Gary Krupnick traveled to Kolkata, India (12/14–12/21) to present a paper as an invited guest at the International Symposium on Plant Biodiversity: Conservation and Evaluation, at the Bose Institute.

Mark and **Diane Littler** traveled to Ft. Pierce, Florida (12/16–2/21) to conduct ongoing research at the Smithsonian Marine Station (SMS).



"Natural History Research and Collections: An Integrated Enterprise to Inventory Life on Earth"

Chair With A View — W. John Kress



The Smithsonian Institution was started in 1846 to curate the nation's natural history collections of biological, anthropological, and geological specimens. These collections numbering in the thousands originated first from the activities of the Columbia Institute for Science of the 1820s followed by the Wilkes U.S. International Exploring Expedition of the 1840s. Even at that time in the history of our country the potential scientific value of plant and animal collections for understanding our world was recognized. With these natural history collections and the bequest of James Smithson the Smithsonian became the premiere scholarly scientific institute in the nation, not only housing the collections, but promoting research that utilized these specimens.

In the late 1800s the Institution accepted a third mission: to educate the public about science by presenting displays of these collections in the Smithsonian Castle. The public education function came to prominence during the tenure of Secretary S. Dillon Ripley when a host of new museums were initiated on and off the Mall. Science and collections activities continued to grow, but the large measure of resources were directed to public exhibitions and educational programs. During the last two decades the emphasis on public programs has grown disproportionately at the expense of scientific activities at the Smithsonian, especially as the leadership changed from science-based to management-based.

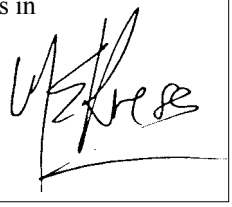
The decline of support for science and collections at the Smithsonian during the last half-century was confirmed by the recent Report of the Smithsonian Science Commission appointed by the Board of Regents. As a result of an extensive review of the research endeavors throughout the Smithsonian, the Science Commission has laid out a plan including 48 specific recommendations to reset the institutional mission to balance science and education activities. Within the scientific ranks at the National Museum of Natural History, we heartily welcome the recommendations of the Science Commission, especially the call to invigorate the leadership in our Museum by establishing in the director's office a firm base in science and research. The appointment of Dr. Cristián Samper as the next director is a tremendously encouraging sign of progress.

In addition to re-asserting science at the core of NMNH, we must also maintain a balance and integration of research and collections activities in the museum. Over the last decade it has not always been apparent that our research and collections pursuits were developing in tandem as integral functions central to our scientific mission. Too often I have heard talk only of our legal responsibility to maintain the national collections with no parallel discussion of our scholarly responsibility to maintain vigorous research as well. Not only are we accountable for the curation and care for our scientific collections, but we must continue to enhance these specimens by placing them at the core of our research activities. The Science Commission Report emphatically supports this integration.

The parallel and intertwined activities of research and collections in natural history science programs are emphasized by the three central themes of the international biodiversity agenda: 1) the inventory of diversity through exploration, discovery, and documentation; 2) the mobilization through bioinformatics of the data contained in the three billion biological collections available worldwide; and 3) assembling the tree of life through phylogenetic analyses of morphological and molecular characters. Scientists at NMNH have taken a leadership role in establishing these priorities, especially through the development and dissemination of *Systematics Agenda 2000* and our efforts and activities surrounding the Convention on Biological Diversity with associated international systematic initiatives, e.g. the Global Biodiversity Information Facility and the Global Taxonomy Initiative. This tripartite biodiversity agenda inextricably combines systematic research and collections with achievable goals and products.

At NMNH we must mobilize our own research forces to tackle these three major objectives and work along with the international community in pursuing bioinformatics, phylogenetic classifications, and biotic inventory. As mentioned above, broad international funding will soon be available for significant bioinformatics progress and the National Science Foundation (and potentially the European science funding agencies) has initiated new resources for assembling the tree of life. Two of the three objectives are now taking on a life of their own with significant international support. A wide-ranging vision and plan for the third goal, the inventory of life, is yet to come.

The scientific community at NMNH needs to take a serious look at how we can assume a leadership role in this third systematics objective: to explore, to discover, to identify, and to describe life in the remaining biodiversity priority areas of the world. The NGO conservation community launched a very successful effort to identify, and in some cases prioritize, biodiversity "hot spots" for major management and preservation action. However, no natural history organization or biodiversity consortium has stepped up to formulate a coherent plan to inventory life in the poorly known regions of the planet. Perhaps it is time that the biodiversity scientists at NMNH with the support of the Science Commission Report and a new director develop and pilot a coordinated strategy to mobilize our efforts in concert with the international taxonomic neighborhood to inventory life on Earth. This endeavor is a legitimate, universally agreed-upon scientific goal. If we, as the largest natural history museum in the world, don't do it, then who will?



Staff Research

John Kress, with former Botany post-doc Linda Prince and current Duke graduate student Kyle Williams, published the cover-story paper in the November issue of the *America Journal of Botany*, the premier botanical journal in the plant sciences. The paper, entitled "The phylogeny and a new classification of the gingers (Zingiberaceae): evidence from molecular data" (*Amer. J. Bot.* 89: 1682-1696) required five years to complete. The investigation presents the first modern classification of the fifty genera in the family Zingiberaceae, an economically important group of medicinal plants found primarily in Southeast Asia.

Alain Touwaide, visiting botanist, published "Arabic *Materia Medica* in Byzantium during the 11th century A.D. and the problems of transfer of knowledge in Medieval science" in *Science and Technology in the Islamic World,* Proceedings of the XXth International Congress of History of Science (Liege, 20-26 July 1997), Volume XXI, edited by S.M. Razaullah Ansari, Turnhout (Belgium): Brepols, 2002, p. 223-247. This work is the 21st volume of the proceedings of the 1997 Meeting of the International Society for the History of Science where Touwaide delivered a paper.

Elizabeth A. Zimmer and her collaborators (Kathleen M. Pryer, Harald Schneider, and Jo Ann Banks) published the cover article "Deciding among green plants for whole genome studies" for the December issue of *Trends in Plant Science* (Vol. 7, No. 12, pp. 550-554). The article argues that plant-genomic efforts can and should extend beyond angiosperm crop and model systems. The use of plant species representative of other crucial evolutionary nodes would produce the comparative information necessary to understand fully the organization, function and evolution of plant genomes. This initiative includes the simultaneous development of genomic tools for green algae, mosses, 'seed-free' vascular plants and gymnosperms. These tools will provide insight into the complex morphological, physiological, reproductive, and biochemical innovations that have characterized the successful transition of green plants to land.

Staff Activities

In October 2002, **Robert DeFilipps** participated as a research proposal evaluator for the United States Department of State regarding India-U.S. projects, and was on a proposal evaluation panel for the National Academy of Sciences regarding USAID-Israel projects.

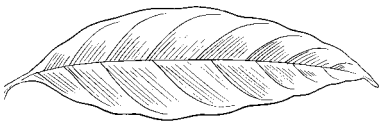
Maria Faust attended the Xth International Conference on Harmful Algae, 21-25 October, in St. Pete Beach, Florida. She presented a paper entitled "The occurrence of harmful dinoflagellates: implications for transport in the Gulf Stream" coauthored with P.A. Tester. The presentation provided evidence that the Gulf Stream apparently acts as the transport mechanism for distributing coastal harmful algal bloom (HAB) dinoflagellates. This discovery suggests that swift moving currents are involved in distributing HAB species between continents.

Gary Krupnick was an invited guest and speaker at the "International Symposium on Plant Biodiversity: Conservation and Evaluation," 17-20 December, at the Bose Institute in Kolkata, India. He presented a paper entitled "Using Natural History Resources to Test Conservation Hotspots and Ecoregions in the Indo-Pacific," co-authored with **W. John Kress**. The meeting featured six invited guests from the U.K. and U.S. as well as numerous presentations from speakers from the Bose Institute and other Indian institutions. The scientific session addressed issues of exploration and benefit sharing; germplasm conservation; evaluation of plant genetic resources for useful secondary metabolites; genome analysis, molecular markers and bioprospecting for useful genes; biotechnological approaches; bio-informatics for database development; and strategy and action plan for biodiversity conservation in West Bengal.

Dan Nicolson visited Cartagena, Colombia from 11-19 October. As the Immediate Past President, Nicolson spent the first day in a meeting of the International Association for Plant Taxonomy Council. He presented a major revision of the IAPT Constitution and Bylaws done by a committee headed by Gerrit Davidse and a 3rd quarter report on IAPT finances. The next day, Enrique Forero treated the council to an all-day trip to the mangroves. Nicolson also attended the week long 8th Latin-American Botanical Congress. They expected 750 delegates and were delighted that 1,200 came, including about 40 from the U.S. There were 907 posters, many courses (such as botanical illustration, botanical Latin, biogeography, Araceae, ethnobotany), hundreds of papers, and a countless number of meetings. Nicolson reports that "it was truly a splendid show in a splendid city, an excellent Botanical Congress."

On 20 October, **Stanwyn Shetler** was the keynote speaker for the Potowmack Chapter of the Virginia Native Plant Society in Annandale, Virginia. The occasion of the annual meeting was the 20th anniversary celebration, and Shetler spoke on the "Role of Native Plant Societies in Grass Roots Conservation." On 28 October, Shetler lectured on "Local Conservation and Biodiversity" in the Johns Hopkins University graduate course, "Biodiversity and Wildlife Conservation," in Washington, D.C.

Alain Touwaide, visiting scholar, attended the History of Science Society meeting, an international venue for scholars from all over the world working on all possible topics in the field of history of science. It was held in Milwaukee, Wisconsin, on 6-10 November. The general theme of this year's meeting was "Crossing Boundaries." In this context, Touwaide organized a panel on "Crossing Boundaries: Translators and Translations in the Middle Ages and the Renaissance." The panel included five papers on subjects as different as botany, philosophy, astronomy, cartography and literature.



Staff on the Move

Maxine Schein, volunteer for **Alice Tangerini** for five years, left to pursue other art interests at her home. Schein had been working steadily every Tuesday since she came to Tangerini's office on 8 September 1998 for a total of 1,444 hours over five years on the Botanical Art Catalog. With a background in graphic design, Schein was

the perfect complement to the project of sorting, mounting, and labeling original illustrations for the Botanical Art Catalog while Tangerini handled the database entry in the computer. Schein understood the techniques necessary to work with delicate art objects and had the artist's eye for composing the artwork on its archival backing. She mounted an entire group of watercolors and ink drawings that came from Marine Fisheries, detailing the preparation of algae into edible products. Many of these were of Japanese origin on fragile rice paper. The main project during her stay was to mount and label (and repair) all 700 plates from the Lyman B. Smith and Jack Downs' "Monograph of the Bromeliaceae" published in three volumes (1974, 1977, 1979) in the *Flora Neotropica* series. This group of drawings came to be the most difficult to handle physically as many of the pieces were glued, taped and even paper clipped to their original backings and were often in some process of deterioration. Some plates had as many as 26 individual small drawings featuring almost as many species and up to five artists represented. These factors led to the reconfiguration of the database entry fields on the Art Catalog web site by **Ellen Farr**. Schein vowed that she would stay to see the final entry which she did on 10 December 2002. A small party was given on her final day. Schein continues to work as a volunteer at the Naturalist Center in Leesburg, Virginia, where her knowledge of design is much appreciated in helping with their exhibit displays.

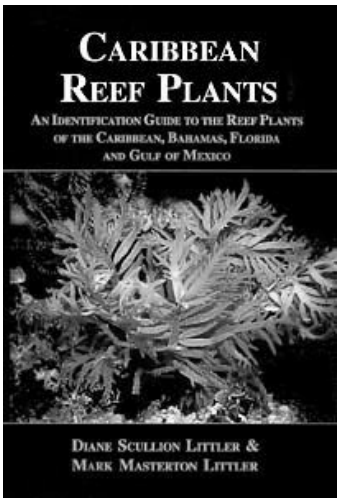
Awards & Grants

Laurence Dorr received one of two 2002 Scholarly Studies Program awards made to scientists at the National Museum of Natural History. The Scholarly Studies Program was established to foster Smithsonian scholarship by providing support for projects that advance knowledge in important and significant ways, including new research initiatives. The successful proposal entitled "Flora de Guaramacal, Venezuela: I" will assist Dorr to complete the first of three projected volumes of this flora of ca. 1,350 species of vascular plants. The first volume will treat ca. 500 species of ferns and fern allies, gymnosperms, and monocots that occur in the 200 km^2 Guaramacal National Park in the Andes of Venezuela.

John Kress, along with collaborators Norman Bourg, a Ph.D. candidate in biology at the University of Maryland, Douglas Gill, a professor of biology at the University of Maryland, and William McShea, a research scientist at the Smithsonian Institution's Conservation and Research Center, has recently received a one-year grant from the National Fish and Wildlife Foundation for their research into the ecology and genetics of a fire-adapted plant. A rare species of lily called mountain asphodel (*Xerophyllum asphodeloides*) or turkeybeard, listed as state-endangered in portions of the Appalachian range, rarely blooms in undisturbed, closed-canopy forests. The research team, however, has documented spectacular mass flowerings in several of the study populations after fires burned through the sites in 1996 and 1999. An episode of fire disturbance increases the chance that an individual plant receives pollen from another turkeybeard plant. Outcrossing produces more fruits and seeds than self-pollination. Thus, habitat disturbance by fire may influence the abundance and distribution of this rare species over the forest landscape. Bourg will be conducting genetic population analyses using isozyme electrophoresis in the Botany laboratory at Smithsonian's Museum Support Center (MSC).

Prescott Prize to Diane and Mark Littler

The Phycological Society of America (PSA), a scientific society that promotes the study of algae, will present its 2002 Gerald W. Prescott Prize to **Diane** and **Mark Littler** for their book *Caribbean Reef Plants: An Identification Guide to the Reef Plants of the Caribbean, Bahamas, Florida and Gulf of Mexico* (2000. OffShore Graphics, Inc., Washington, DC. 542 pp.; http://www.erols.com/offshoregraphics/). The Prescott Prize is an endowed award that honors highly meritorious scholarly work in the form of a book or monograph devoted to the algae and published during the last two years.



The fruit of fifteen years of exploration in the waters of the greater Caribbean, the Littlers' book is being recognized for "its comprehensive treatment of the flora of the Caribbean, the abundance of excellent plates and line drawings, and the detail and editing of the text and keys." The book combines the features of a user-friendly, photographic field guide and a scholarly monograph, with morphological and anatomical information for 565 species of marine plants. More than 700 underwater color photographs illustrate the beauty and diversity of the marine flora. The photos enable the user to "picture-key" specimens initially and then to make a positive identification using the dichotomous keys, along with descriptions of individual species and more than 1,600 line drawings that illustrate morphological and anatomical features. Complementary information for each species includes abundance, geographical distribution, and habitat information. The book is enlivened by numerous captioned photographs that depict interesting reef phenomena, including hidden algal habitats, photosynthetic symbioses, competition for space, herbivory, animal camouflage and gardening behavior, and marine botanists at work.

The marine plants featured in the identification guide are, along with corals, the major photosynthetic producers and builders of reef systems. Members of the award committee appreciated "the widespread need for a reference of this type and the fact that *Caribbean Reef Plants* will be utilized by a wide range of people, including students, researchers, recreational users of the Caribbean marine environment, and reef managers." The committee concluded that "the book will do a great deal to increase appreciation for and knowledge of marine algae and tropical marine environments." The Littlers will formally receive the Prescott Prize in June 2003 at the 57th Annual Meeting of the PSA at the Salishan Resort in Oregon.

Thirteen Speakers to Explore the Botanical Frontiers of Southeast Asia at the 2003 Smithsonian Botanical Symposium

Over the last decade significant new biodiversity discoveries and advances in the plant sciences have been made in the tropical areas of Southeast Asia through the collaborative efforts of local and foreign scientists. Exploration in many remote and poorly surveyed regions in such countries as Laos, Cambodia, and Myanmar is uncovering new taxa of plants and animals and expanding the inventory of biodiversity. At the same time in China, Vietnam, Indonesia, and Malaysia innovative field and laboratory investigations have led to great strides in our understanding of the ecological complexity of habitats as well as the evolutionary history and genetic diversity of plants in this region. Despite these innovations the increasing rate of destruction of pristine environments necessitates rapid conservation action.

The 2003 Smithsonian Botanical Symposium, entitled "Botanical Frontiers in Southeast Asia: from the Discovery of the Earliest Flowering Plants to the Sequencing of the Rice Genome," will explore the numerous new developments in our knowledge of plant diversity in Southeast Asia by bringing together botanists from around the world for discussion and exchange. The Symposium will be held 28-29 March 2003 at the National Museum of Natural History in Washington, D.C. Topics will include recent fossil discoveries of the earliest angiosperms, ethnobotanical surveys, systematics and floristics, forest structure, conservation, and breakthroughs in genome technology.

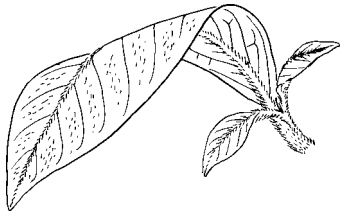
The Symposium will include a day of invited speakers followed by a keynote address, and is being sponsored by the National Museum of Natural History, the Cuatrecasas Family Foundation, the International Association for Plant Taxonomy, the United States Botanic Garden, and Twinings Tea. An opening reception will be held Friday evening, 28 March, in the Conservatory of the U.S. Botanic Garden. The speakers are:

- **Robin Buell**, The Institute for Genomic Research, Rockville, Maryland;
- **Leonardo L. Co**, University of the Philippines;
- **Stuart Davies**, Center for International Development and the Arnold Arboretum, Harvard University;
- **David L. Dilcher**, Florida Museum of Natural History, University of Florida, Gainesville;
- **Ge Sun**, Research Center of Palaeontology, Jilin University, Changchun, China;
- **Nguyen Tien Hiep**, National Center for Science and Technology, Hanoi, Viet Nam;
- **Kuswata Kartawinata**, Center for International Forestry Research (CIFOR), Jakarta, Indonesia;
- **U San Lwin**, Institute of Forestry, Yezin, Union of Myanmar;
- **Daniel A. Lagunzad**, University of the Philippines;
- **Hei Leung**, International Rice Research Institute, Manila, Philippines;
- **Christine Padoch**, Institute of Economic Botany, New York Botanical Garden, Bronx;
- **Jack Regalado**, Vietnam Botanical Conservation Program, Missouri Botanical Garden, St. Louis; and,
- **Christen Wemmer**, Conservation and Research Center, Smithsonian Institution, Front Royal, Virginia.

The third José Cuatrecasas Medal in Tropical Botany will be awarded at the Smithsonian Botanical Symposium. This prestigious award is presented annually to an international scholar who has contributed significantly to advancing the field of tropical botany. The award is named in honor of Dr. José Cuatrecasas, a pioneering botanist who spent many years working in the Department of Botany at the Smithsonian and devoted his career to plant exploration in tropical South America.

Two associated exhibits are planned to open to coincide with the symposium. At the National Museum of Natural History, "A Passion for Plants: Contemporary Art from the Shirley Sherwood Collection" will open in March. "Traditions in Elegance" will open in January at the U.S. Botanical Garden.

For more information and registration, visit the Symposium Web site <http://persoon.si.edu/sbs/> or call 202-357-2534. The registration deadline is 7 March.

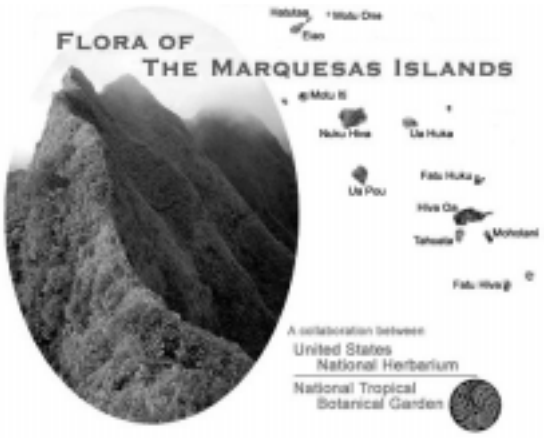


Teapots on Display at the US Botanic Garden

The United States Botanic Garden (USBG) has a new exhibit on display in the East Gallery of the Conservatory, "Traditions in Elegance: 100 Teapots from the Norwich Castle Museum," on view 16 January through 30 March 2003. From simple beverage to social ritual, the tea plant has inspired devotion and charmed craftsmen in many cultures. On display is a selection of 100 teapots from the world's finest collection at Norwich Castle Museum in England. An astounding variety of fanciful, utilitarian, historical, modern, and classical teapots are presented. Also displayed is the world's largest teapot made in 1851 for the Crystal Palace exhibition in London. The debut in Washington is the traveling exhibit's final venue. "Traditions in Elegance" is part of an ongoing collaboration between Botany and the U.S. Botanic Garden. Plant specimens from the U.S. National Herbarium and the living collection at USBG are featured in conjunction with the exhibit. **John Kress** served as an advisor for the exhibit and related educational activities.

Flora of Marquesas Islands Debuts on Web

An isolated group of 12 volcanic hot spot islands in the southeastern Pacific Ocean, the Marquesas Islands are one of five archipelagos of French Polynesia. A number of botanical explorations to the Marquesas Islands have been undertaken since the late 1700s, but none have resulted in a comprehensive treatment of the flora. As a response to this deficiency, **Warren Wagner** and David H. Lorence (National Tropical Botanical Garden) initiated the Flora of the Marquesas Islands project. One result of the project is the release of the new Web site, "Flora of the Marquesas Islan <http://rathbun.si.edu/botany/pacificislandbiodiversity/marquesasflora/index.htm>.



The aim of the Web site is to provide a flexible query tool to access taxonomic and geographical information on Marquesas vascular plants. The overarching goal of the project, however, is to present a framework for preserving the biodiversity of the islands. Of the nearly 714 vascular plant species, 337 species are native, with approximately 45 percent being endemic to the archipelago, including five endemic genera. During the last two decades, roughly 40 new species have been discovered which represents a substantial increase to the native vascular flora, thereby accentuating the need for further field exploration efforts. The present checklist database on the Web consists of 104 families, 364 genera, and 597 taxa of flowering plants and 27 families, 55 genera, and 117 taxa of ferns and related groups. In addition to the available checklist, information can be retrieved on specimens that have been collected in the Marquesas, including a list of herbaria where collections are held.

The topography of the Marquesas Islands is extremely rugged and beautiful, and the collection of images on the Web site attests to that fact. The rugged topography has produced varied habitats on the larger islands ranging from dry on the leeward sides to mesic valleys and cloud covered summits. The searchable image gallery offers over 800 photographs of plants from these varied habitats.

Plans are underway to increase the scope of the Pacific Flora Web site to encompass other island groups. A flora of the Hawaiian Islands is currently available at <http://rathbun.si.edu/botany/pacificislandbiodiversity/hawaiianflora/>. The Flora of the Marquesas Islands is the second module of what will be six over the next three years to cover the vascular plants of the Oceanic Pacific (Hawaiian Islands to Micronesia, to Fiji, to Easter Island).

Data are maintained by Wagner, Lorence, and **Denise Mix**. Jessica Braun prepared photographic images of plant taxa for web presentation and helped maintain the image database, with additional help from Julia Mirabella and Philip Garcia. Royce Oliver, Michael Sisson, Sara Hodapp and Robynn Shannon processed specimens and contributed to initial database development and maintenance. Tim Flynn and Melany Chapin, of the National Tropical Botanical Garden, developed and maintain the NTBG database which has been incorporated with the Smithsonian database.

Herbarium Welcomes Historic Wye Oak Specimens

A partnership between the United States National Herbarium and two State of Maryland agencies becomes part of the final chapter in the story of the great Wye Oak, America's largest white oak (*Quercus alba*). The Maryland Department of Agriculture and the Maryland Department of Natural Resources have combined their efforts to preserve the remains of this champion tree after it crashed to earth during a fierce storm on 6 June 2002. The tree was 382 feet in circumference, 96 feet tall, and a crown spread of 119 feet—covering nearly one-third acre.

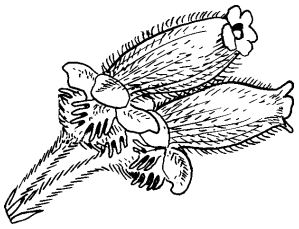
With the assistance of biologists from the University of Maryland, Montgomery College and Anne Arundel Community College, a large amount of herbarium material has been collected and dried and will be stored, along with the last voucher specimens, in the National Herbarium. On 14 November, the herbarium accepted the last voucher specimens.

Estimated to be 460 years old, the Wye Oak was already a mature specimen when, in 1608, Capt. John Smith sailed up the Chesapeake Bay mapping areas for future settlements. He called the area "Brooke's Forest" and the Wye Oak became its most famous and longest living member.

Rediscovering an Unpublished Type

During a recent examination of unpublished types, **Dan Nicolson** came across a Philippine specimen from Mindanao collected by Edgar Mearns in 1904. It was annotated *Hoya schallertiae* by C. M. Burton on 1 April 1982 and "Holotype." Nicolson pondered whether this specimen was named for Botany's librarian, **Ruth Schallert**.

Hoya schallertiae does not appear on the Web site of the International Plant Name Index (IPNI). The Kew Record of Taxonomic Literature under publications by "Burton CM," however, lists number 67 (of 91 publications) as "*Hoya schallertiae* Burton CM *Hoyan* 3(4): 96-97. 1982 (illustr.)." The listing in *The Hoyan* shows a valid Latin description and diagnosis, as well as a citation of the US specimen. Best of all was the dedication: "This hoya ... is named in honor of Mrs. Ruth Schallert, Botany Librarian at Smithsonian Institution in Washington, D.C. U.S.A., who has helped me, (and HSI) far beyond the call of duty, in obtaining *Hoya* research material." Schallert was unaware that a species had been named for her, and she plans to write a thank-you note, twenty years late. Nicolson contacted Rosemary Davies, indexer for *Index Kewensis*, who confirmed that this overlooked name will be added.



Introducing *Hotel Heliconia*

In November, **W. John Kress** introduced a screening of the BBC documentary *Hotel Heliconia* at the National Museum of Natural History Film and Lecture Series. Serving as an advisor to the film, Kress provided natural history anecdotes to producer and director Phil Savoie. The 45-minute film reveals the story of the *Heliconia*, a tropical rain and cloud forest plant with some of the most beautiful flowers on Earth. Both a rainforest "hotel" and "supermarket," it provides a home and food for many fascinating creatures, all of which seem to be using the plant for their own gain. Stunning macro photography reveals how butterflies, bees, ants, hummingbirds, bats and frogs take advantage of the plant's offerings, while unwittingly making a vital contribution to the survival of the plant as pollinators, fertilizers and protectors.

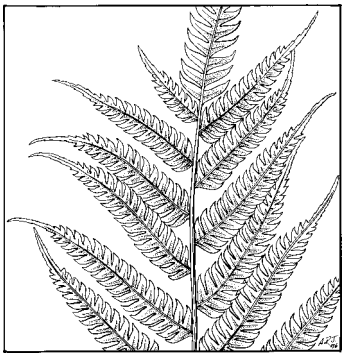
Hidden Treasure Found in the Botany Library

In late November, Botany librarian **Ruth Schallert** found three boxes of hundreds of handwritten slips with journal titles and call numbers of area libraries. The boxes had turned up during construction associated with the library expansion. Schallert had no idea where they came from. She saw no use in keeping the card file and turned them over to **Dan Nicolson**. Nicolson's first guess as to their origin was that they were from the early days of the *Index Nominum Genericorum* (*ING*), a project initiated in 1954 as a compilation of generic names published for all organisms covered by the *International Code of Botanical Nomenclature*. **Ellen Farr**, computer specialist and current co-editor of *ING*, had never seen or used the card file.

Nicolson then chatted with **Laurence Dorr** and they agreed that the card file would best be offered to the Hunt Institute for Botanical Documentation since they published the periodical index *Botanico-Periodicum-Huntianum (BPH)*. Nicolson copied a small selection of files, sent it to Robert Kiger, Director of the Hunt Institute, and asked if they would like to have the collection. It turns out that the Hunt Institute is readying a *BPH* update and Gavin Bridson wants to verify their entries against this card file. **Deborah Bell** packaged the card files and sent the three boxes to the Hunt Institute. Kiger acknowledged receipt of the files in mid-January and said that they were happy to add this resource to their collection.

Web Access to Type Specimen Ferns and Cryptogams Now Available

The complete catalog of type specimens from the United States National Herbarium (US) is now available on the Botany Web site <http://www.nmnh.si.edu/botany/>. For nearly two years a Web interface to type specimens for flowering plants and the growing type specimen image collection (now numbering over 25,000 images) was provided. The type specimen records for ferns and cryptogams, however, were accessible only on the Internet Gopher server application that was set up in 1994. Over 95,000 records for type specimens are now available on the Web.



Staff Lecture Series Continues

The Botany lecture series continued on 8 October with **Laurence J. Dorr** presenting "Guaramacal: Botanical Exploration in the Venezuelan Andes." On 5 November, guest speaker, **Qing-Jun Li**, from the Xishaungbanna Tropical Botanical Garden in Yunnan, China, presented "Research on Flexistyly, a Unique Floral Mechanism in *Alpinia* (Zingiberaceae)." Botany curators will resume delivering research seminars each month at the start of the new year.

Science Commission Proposes New Vision for Science at the Smithsonian

The Smithsonian Science Commission, an 18-member committee established by the Board of Regents, the Institution's governing body, recently released "The Report of the Smithsonian Institution Science Commission," a 15-month study examining all science activities at the Institution. Headed by Jeremy A. Sabloff, Director of the University of Pennsylvania Museum of Archaeology and Anthropology, and including **Warren Wagner** among its members, the Commission called on the Institution to renew its dedication to science by improving leadership, communications and funding.

The Commission proposed a core mission based on four key themes that "will provide a strategic platform for both the short- and long-term growth of science at the Institution, none of which require costly, large-scale administrative reorganization." These themes would provide a blueprint or vision for the future of science at the Smithsonian. The commission calls this vision *Science Smithsonian*, and lists the themes as follows: Origin and Nature of the Universe; Formation and Evolution of the Earth and Similar Planets; Discovering and Understanding Life's Diversity; and, Study of Human Diversity and Culture Change.

Sabloff told the Board of Regents, at its meeting on 6 January, that "the science mission of the Smithsonian is vital to the future of the Institution," and that its collections make the Smithsonian an internationally important resource. But, in recent decades, science has been "unfocused and under-funded." To recapture its prominence in the sciences and once again become a national leader in science will "require strong leadership, setting of Institution-wide priorities that emphasize the four-theme vision…and a reversal of years of declining support through better communication of the importance of scientific research at the Smithsonian."

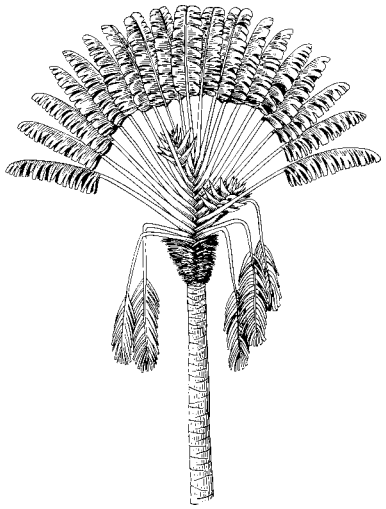
Sabloff described several ways to overcome the financial hurdle: increase efforts to fund scientific activities through private and foundation sources; work with Congress to obtain direct federal funding for research; encourage all Smithsonian scientists to compete for National Science Foundation grants; and seek full funding of mandatory annual salary increases from Congress. The Regents endorsed the commission's report.

In its assessment of the National Museum of Natural History, the commission recognized the importance of the museum's collections (124 million items) and the need to maintain this "vital and unique national resource." A lack of leadership and inadequate funding, however, have taken their toll on the museum. The report makes nine specific recommendations on subjects ranging from department structure to the relationship between science and exhibitions.

The commission recommends that the Smithsonian take up the goal of becoming the world's preeminent science educator, starting at once with the development of an Institution-wide strategic-management and fund-raising plan for science education. Restoration of the Scholarly Studies and Fellowships programs, creation of an education council and establishment of a biannual "Smithsonian Conference" series to showcase emerging matters of public interest should follow quickly.

The challenges facing Smithsonian science today stem, in part, from inadequate communication of the Institution's research, according to the commission. They recommend that the Under Secretary for Science and the Director of Communications and Public Affairs should work together to promote Smithsonian research to many audiences.

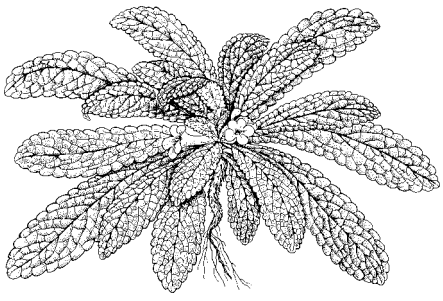
The full text of the science commission report is available at <http://www.Smithsonian.org/sciencecommission>.



Researching the Medicinal Plants of Antiquity

Alain Touwaide, research associate and visiting botanist, has received funding from the Earthwatch Institute for his project entitled "Medicinal Plants of Antiquity." This project consists of analyzing early printed herbals the Renaissance period, the late 15th and 16th century, to increase the database he has built on plants in the ancient Mediterranean world. For the past decade, Touwaide has been investigating therapeutic prescriptions and plant representations in ancient Greek and Arabic manuscripts. Starting next summer, Earthwatch volunteers will work with him at the National Library of Rome, compiling a comprehensive database of ancient therapeutic practices from rare books and archaeological sites.

As part of the first year of Touwaide's project, volunteer field assistants will become intimately familiar with historic texts in the Rare Book Department. Although most of the books are in Latin, field assistants will collect data on plant representations, plant names, and references to ancient texts. Two days will involve visits to archaeological sites, such as Pompeii and Ostia, to research botanical representations found there. The database generated will stimulate progress in many areas, from the integration of traditional medicines to an epidemiology of the ancient world.



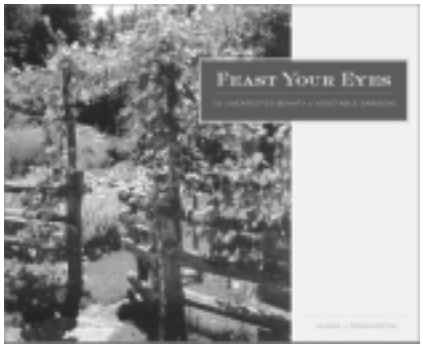
Two New Monographs are Published in *Contributions from the United States National Herbarium*

Maria Faust has published "Identifying Harmful Marine Dinoflagellates" (2002, *Smithsonian Institution, Contributions from the United States National Herbarium* 42: 1-144). The guide is the most comprehensive reference manual for identifying harmful algal bloom (HAB) dinoflagellates. The guide illustrates the morphology of toxin-producing HAB species, which have been implicated to cause red tides, marine life mortality, and seafood-borne human diseases. The taxonomic treatment of species includes nomenclatural types, type locality, synonyms, and etymology. Information is also available on species reproduction ecology, biogeography, distribution, habitat and locality. Species illustrations are presented as SEM and light micrographs and line drawings. A comprehensive glossary and reference section is included. This fully illustrated reference guide is intended for the scientist, instructor and student. It can also serves as a field guide for marine biologists, environmental researchers and health professionals.

Tom Hollowell, Lynn Gillespie (Canadian Museum of Nature, Ottawa), **Vicki Funk**, and **Carol Kelloff** have published "Smithsonian Plant Collections, Guyana: 1989 – 1991, Lynn J. Gillespie" (2003, Smithsonian Institution, *Contributions from the United States National Herbarium* 44: 1-104). This publication details the Guyana collections of Lynn J. Gillespie. It is intended as a comprehensive reference for herbaria holding collections made by the collector and as an aid to taxonomists interested in particular groups of plants. The volume also contains a list of collections of particular interest, a fascinating narrative about the collecting trips, and photographs of localities and plants taken by Gillespie. Part I provides the collector's notes on trips in chronological order. Part II lists collection localities, with collection number ranges, habitat descriptions, geographic coordinates, and assisting collectors. Part III consists of maps of Guyana showing collecting localities. Part IV lists collections in numerical order with identifications and authors. Part V lists collections ordered by determined name. The appendix is a personal account by the collector describing some of her experiences while collecting plants in Guyana. This volume is the second in a series on the Smithsonian Institution's Biological Diversity of the Guianas collectors, the first being on the collections of John J. Pipoly, which is available at <http://www.mnh.si.edu/biodiversity/bdg/collector.html>.

Revealing the Beauty of Vegetable Gardens

Susan Pennington, contractor to **Paul Peterson**, has recently released *Feast Your Eyes: The Unexpected Beauty of Vegetable Gardens*, published by University of California Press, in association with Smithsonian Institution Traveling Exhibition Service. The book examines the historical antecedents of the modern movement of beautifying traditional vegetable gardens as well as the changing perceptions of the beauty of vegetable gardens over time and among different cultures. Generously illustrated with over one hundred historical and contemporary photographs and artwork highlighting material from the Smithsonian Institution's Archives of American Gardens, this book provides a fascinating and wide-ranging discussion of such topics as the vegetable garden at Versailles, Ming dynasty vegetable gardens, the war gardens of World War I, World War II victory gardens—including those of the Japanese American internees—and vegetable still lifes.



As the boundary between vegetable garden and flower garden has become blurred, the same is true for vegetables. Horticulturists have developed popular garden ornamentals from kale, chili peppers, sweet potato, and eggplant. Pennington provides "biographies" of these vegetables and describes new varieties that are being developed for their aesthetic qualities. She shows how this is not a uniquely modern phenomenon but is rooted in the introduction of exotic vegetables to Europe starting as early as the thirteenth century.

Visitors

Continued from page 2

Erika Fernandez Terrazas, Centro de Biodiversidad y Genetica, Universidad Mayor de San Simon, Bolivia; Commelinaceae (12/8-12/20).

Patricia DeAngelis, U.S. Fish & Wildlife Service; *Cimicifuga racemosa* (Ranunculaceae) (12/12; 12/17).

Jeffery Lake, University of Georgia; General research (12/13-12/23).

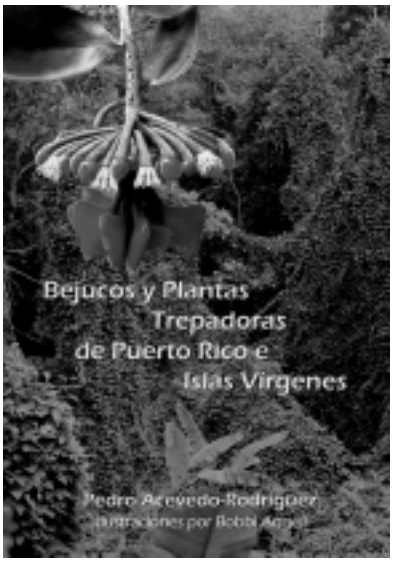
Richard Mack, Washington States University; Poaceae (*Bromus*) and Berberidaceae (*Berberis*) (12/13-12/16).

Jeanmaire Molina, Rutgers University; Apocynaceae: *Neubergia* sp. (12/23-12/23).

Acevedo

Continued from page 1

provided finances for the book, which is fully illustrated by Bobbi Angell. At the present time, Acevedo is deeply involved with projects on floras of the Greater Antilles (Cuba, Jamaica, Hispaniola [Haiti and Dominican Republic], Puerto Rico), as well as the preparation and publication of Sapindaceae treatments for the floras of Venezuelan Guayana (excluding *Paullinia*) and the Guianas (Guyana, Suriname, French Guiana).



Currently, Acevedo is preparing taxonomic treatments of the families Araceae (with Dan H. Nicolson), Dioscoreaceae, Smilacaceae, and Cyperaceae (with research assistant Mark T. Strong) for a publication on "Monocots of Puerto Rico and the Virgin Islands," a project originated by George R. Proctor (Jamaica), and being edited by Acevedo. He is approximately half done with a draft of Sapindaceae for the "Flora of the Guianas," an international project being edited at Utrecht, The Netherlands; eighteen genera are in the Guianan flora. His Sapindaceae account for Scott Mori *et al*.'s "Guide to the Vascular Plants of Central French Guiana" (2002) was recently published, while the Melicocceae (Sapindaceae) is in press for "Flora Neotropica" Volume 87.

Beyond those activities, Acevedo is the Coordinator for Angiosperms, in a consortium of investigators preparing a "Flora of the Greater Antilles." In addition to having a treatment of Sapindaceae underway for that flora, he is compiling a "Checklist of Seed Plants of the Greater Antilles" with the assistance of Strong and various family contributors. A rough draft based on the compilations has been completed, which will facilitate future analyses of generic endemism amongst the islands.

For the series of books on "The Families and Genera of Vascular Plants" edited by Klaus Kubitzki (Universität Hamburg), Acevedo, as senior contributor with three co-authors, has submitted an account of Sapindaceae which is going to pave the way for clarifying and revising the chaotic tribal classification(s) within the family.

Acevedo is strongly committed to the values of biological conservation, and has demonstrated this along several avenues. For example, he studied the effects of the devastating Hurricane Hugo in Puerto Rico in 1990 and produced a video on it; he participated and wrote (as first co-author) the Flora section of a biodiversity assessment of the Lower Urubamba River region of Peru in 1997; and he co-authored with W. John Kress and others (1998, 2000) articles with respect to biotic assessment and conservation priorities on Amazonian biodiversity.

So his work proceeds towards more precise delimitations of the areas of high plant endemism in the Greater Antilles, a region whose natural vegetation (after the Carib and Arawak Indians were demolished) has been under alteration for 500 years since the days of Spanish colonization. In those giant Caribbean islands, as explained by Acevedo, there is much basic floristic work yet to be accomplished before an understanding of the true relationships of the floras from one island to the next can be achieved. By knowing these biotic relationships and floristic complexities in terms of biogeography and phyletic lines, we will be able to better understand the various influences of plant migrations, extinctions, introductions of species through human activities, and the effects of generations of disturbances in the vegetation.

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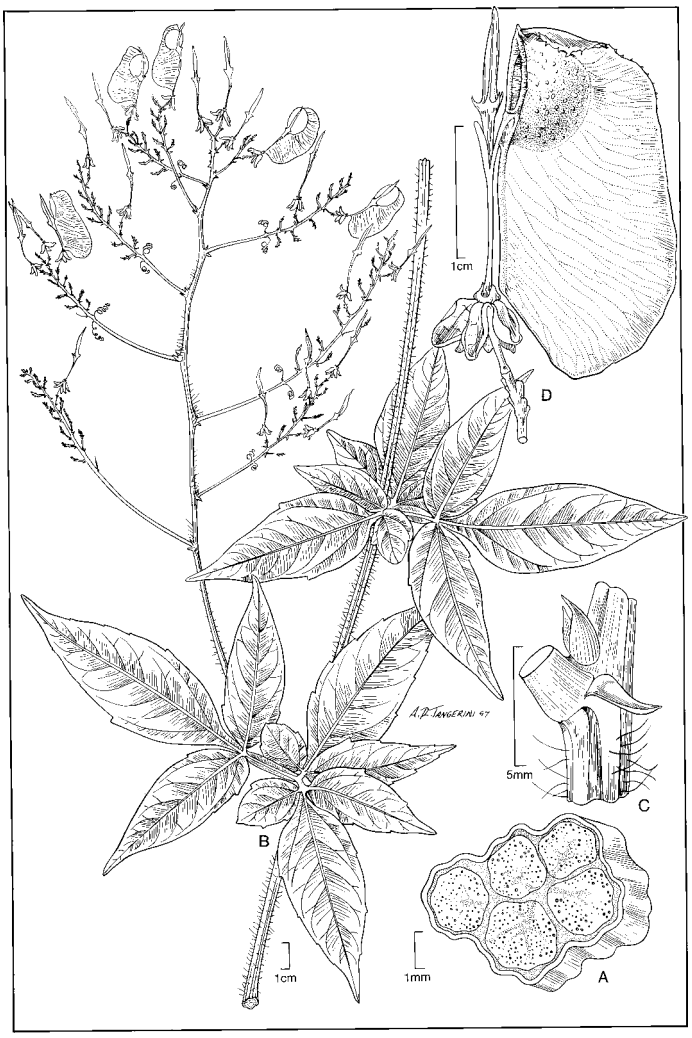
Art by Alice Tangerini

Serjania erythrocaulis Acev.-Rodr. & Somner.

Serjania erythrocaulis Acev.-Rodr. & Somner. is a new *Serjania* species collected by Acevedo and a collaborator whle doing field work in the southeastern states of Brazil. This woody vine has a reddish coloration not known from any other species of *Serjania*. It is known only from the state of Espírito Santo, Brazil.



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