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

The Plant Press

Smithsonian
National Museum of Natural History

New Series - Vol. 4 - No. 3 July-September 2001

Botany Profile

Pinnae for Your Thoughts

By Robert DeFilipps

Ferns and their entourage of "allies" have been on the earth for ages. Related by similarities of their structure and life history as spore-bearing vascular cryptogams, the ancestors of today's ferns, horsetails (*Equisetum*), club-mosses (*Lycopodium*), and spike-mosses (*Selaginella*) once freely cohabited in communities exemplified by now-extinct ferns (such as *Psaronius*), horsetails (*Annularia, Sphenophyllum*), and giant club-mosses (*Lepidodendron*) in the swamp forests of the Carboniferous Age, approximately 300 million years ago. On display in the National Museum of Natural History are fossil impressions of their leaves and stems, preserved in rounded structures known to paleo-botanists as "coal balls," while untold millions of tons of their pressurized remains are burned as coal.

Segments of those plant lineages that evolved and survived through the geological ages, and have come down to us as the living ferns and fern-allies of the New World tropics, are the major research interest of David B. Lellinger, curator of pteridophytes in Botany. Under Lellinger's meticulous supervision at the U.S. National Herbarium is the largest and most diverse fern collection in the Western Hemisphere, in excess of 250,000 specimens, including six full-size cases of precious type material. His predecessors in a century of continuous fern curation were William R. Maxon who started in 1899, followed by Conrad V. Morton who was employed at the Smithsonian from 1926 to1972. Lellinger, who started as a herbarium aide in 1960, has been a full curator since 1987. Morton and Lellinger were co-authoring South American fern articles as early as 1966.

Lellinger was born in Chicago, Illinois, in 1937, and attended the University of Illinois at Urbana (A.B. with Highest Distinction in Botany, 1958) before proceeding to graduate studies at the University of Michigan, Ann Arbor (M.S. 1960; Ph.D. 1965). His botanical beginning was inspired by a chance meeting with Albert Fuller (Milwaukee Public Museum), eventually resulting in an undergraduate thesis on the flora of what is now called Tofts Point Natural Area, Wisconsin, after which G. Neville Jones at Urbana pointed Lellinger in the direction of Michigan's Herb Wagner, who became his major professor.

> *Fern collections are still yielding many interesting novelties*

The structures of ferns require a unique descriptive terminology, the use of which is strongly championed by Lellinger, since the fern "frond," which unrolls from a "crozier" or "fiddlehead," is morphogenetically different in its mode of development from marginal meristems, from that of the angiosperm "leaf." Often delicately compound into divisions known as "pinnae," "pinnules," and "pinnulets," the frond has a "stipe" corresponding to a "petiole," while spore-cases known as "sori" are formed on the underside or on separate fertile fronds.

The special terminology and concepts relating to ferns have recently been clarified by Lellinger in a major work entitled *A Modern Multilingual Glossary for Taxonomic Pteridology* which covers approximately 1,100 terms and synonyms in English, Spanish, French, and Portuguese. It will be published this year by the American Fern Society in *Pteridologia*, a leading journal of which Lellinger is currently editor and business manager.

One of Lellinger's abiding interests has been the pteridophyte flora of the region comprising Costa Rica, Panama, and the Chocó in Colombia, where he conducted fieldwork in various years from 1967 to 1987. In southeastern Panama-northwestern Colombia this area embraces the notorious Darién Gap, a nearly roadless isthmian configuration of mountains and swamps. The Panamanian portion is home to the Emberá, Wounaan, and Kuna Indians, and the vantage point from which the Spanish explorer Vasco Núñez de Balboa was, in 1513, the first European to see the Pacific Ocean.

In Part 1 (*Pteridologia* 2A. 1989) of his account, Lellinger reported 562 species of ferns and fern-allies from the area of Costa Rica through the Chocó. His fern collections furnished material for many taxonomic studies by various investigators, while examination of gatherings of other plant groups resulted in three new species of Colombian angiosperms named for him: *Guzmania lellingeri* L.B. Smith & R.W. Read

Continued on page 7

Visitors

Isidro Sanchez-Vega, Universidad Nacional de Cajamarca, Peru; *Eragrostis* (Poaceae) (4/30-6/4).

Dorothy Brazis, National Park Service; Endangered species at Monocacy (5/1).

Larry Fowler, USDA, APHIS, PPQ; *Echinochloa pyramidalis* (Poaceae) (5/8).

Saul Hahn, Organization of American States, OST; Herbarium information (5/8).

Ronald Ochoa, USDA; *Cirsium* mites (5/17).

John Lydon, USDA; *Cirsium* mites (5/17).

Nobuyuki Tanaka, Kochi Prefectural Makino Botanical Garden; Cannaceae (5/18-5/19).

Benjamin Torke, Missouri Botanical Garden (MO); *Swartzia* (Fabaceae) (5/21-5/22).

Steven Clemants, Brooklyn Botanic Garden; North American *Chenopodium* (5/21-5/22).

Alicia Massa, Utah State University; *Bromus* (Poaceae) (5/21-5/25).

Terry O'Brien, Rowan University; Mosses (5/29).

Rosaura Grether G., Univ. Autonoma Metropolitana Izatapalapa; Mimosaceae (5/31-6/5).

Alejandra Correa, Univ. Nacional de Colombia; Asteraceae (6/5-6/15).

Susan Nasr, USDA, Mycology Laboratory; *Vaccinium* (Ericaceae) (6/7).

John Janovec, New York Botanical Garden (NY); Myristicaceae (6/11-6/12).

Polly Lehtonen, USDA; Mexican weeds (6/11).

Mac Alford, Bailey Hortorium, Cornell University; Flacourtiaceae (6/20-6/27).

Cathryn Meegan, Arizona State University; Syria and Turkey plants (6/25).

John Nelson, University of South Carolina; *Stachys* (Lamiaceae) (6/26).

Lynn Clark, Iowa State University; Poaceae (6/26-6/27).

Alexander Krings, North Carolina State University; Herbarium research (6/28).

Mary Stensvold, U.S. Forest Service; *Botrychium* ferns (6/29).

Eric Christenson, Selby Botanic Gardens, Florida; Orchidaceae (6/30-7/2).

David Mabberley, Royal Botanic Gardens, Sydney, Australia; IAPT (7/8-7/9).

Elizabeth Rollins, Scientific American Magazine; Educational film programs (7/10).

Darin Pennys, University of Florida, Gainesville; Melastomataceae of Guianas (7/10-7/13).

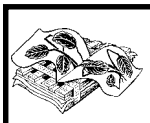
Amanda Neill, New York Botanical Garden (NY); Cucurbitaceae (7/11-7/12).

Tania Wendt, Federal University; Bromeliaceae (7/15-7/25).

Gery Allan, Arcadia University; Fabaceae, Rutaceae (7/16-7/30).

Petr Sklenar, New York Botanical Garden (NY); Paramo vegetation (7/16-7/20).

Michael Nee, New York Botanical Garden (NY); Solanaceae (7/23).



The Plant Press

New Series - Vol. 4 - No. 3

Head of Botany
W. John Kress
(kress.john@nmnh.si.edu)

EDITORIAL STAFF

Co-Editors
Gary Krupnick
(krupnick.gary@nmnh.si.edu)
Robert DeFilipps
(defilipps.robert@nmnh.si.edu)

Circulation Manager
Shirley Maina
(maina.shirley@nmnh.si.edu)

News Contacts
Robert Faden, Ellen Farr, George Russell, Alice Tangerini, and Elizabeth Zimmer

The Plant Press is a quarterly publication provided free of charge. If you would like to be added to the mailing list, contact Shirley Maina at: Department of Systematic Biology - Botany, MRC-166, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560-0166, or by e-mail: maina.shirley@nmnh.si.edu.

Web site: http://www.nmnh.si.edu/botany

Travel

Vicki Funk traveled to New Orleans, Louisiana (4/5-4/9) to attend a meeting of the Association of Southeastern Biologists, where she gave a talk on the herbaria of Southeast US; Durham, North Carolina (5/9-5/21) to meet with a graduate student at Duke University; and Montreal, Canada (6/10-6/17) to conduct research at McGill University.

W. John Kress traveled to London, England (5/15-5/19) to attend an Informal Consultation held at the Royal Society on a Global Strategy for Plant Conservation to be presented to the Convention on Biological Diveristy; Myanmar (6/4-6/23) to collect gingers and work on the checklist of plants of that country; Kunming, China (6/23-6/26) to sit on the Ph.D. dissertation defense of Ai-Zhong Liu at the Kunming Institute of Botany; and Bangalore, India (7/13-7/24) to attend a meeting as Executive Director of the Association for Tropical Biology.

Paula DePriest (5/28-6/15) traveled to Brisbane and Canberra, Australia to collect lichens for the PEET Project, with graduate students Rebecca Yahr and Niki Hoffman, and Sam Hammer (Boston University) and his four undergraduate interns.

Mark Littler, **Diane Littler**, and **Barrett Brooks** (6/5-7/31) traveled to Fort Pierce, Florida to continue ongoing research on the Marine Flora of the Indian River Lagoon, Florida.

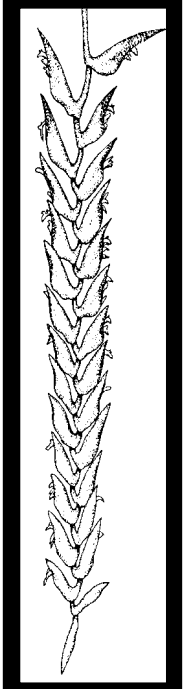
Laurence Dorr (6/9-6/21) traveled to Venezuela (see extended report in this issue, page 5).

Pedro Acevedo (6/20-8/22) traveled to Puerto Rico and the Dominican Republic to attend a meeting of the "Flora of the Greater Antilles" project.

Walter Adey (7/12-9/7) traveled to Bangor, Maine; Gandor, Newfoundland, Canada and Quebec, Canada to continue ongoing research.

Basic Research in the Century of the Environment

Chair With A View — W. John Kress



Many biologists are now calling the next one hundred years the "Century of the Environment." But has this epithet been applied because the next hundred years will be our last chance to preserve the remaining large tracts of undisturbed natural habitats on the planet? Or is it because we only have 100 years to discover the remaining organic diversity on the planet, document where it is distributed, and understand how it has evolved before the current mass extinction is complete? As natural history biologists we must decide how we are going to expend our research energies over the next decades.

Like many systematic biologists, I began my career with an intense fascination for the natural world and a passion for botanical exploration and discovery. My occupations throughout undergraduate and graduate school focused on learning everything I could about systematics, evolution, and ecology as well as traveling to as many faraway tropical lands as a graduate student could afford. I have continued this trajectory through post-docs, first jobs, and my curatorial work at the Smithsonian.

A not so subtle transition occurred in both the field of biology and my career perspective during the 1980s as the pristine tropical forests became more and more difficult to find and the forests that I had already explored were being degraded in a rapid and irreversible fashion. Not so suddenly I awoke to realize that the message on environmental crisis that Peter Raven had been preaching for years was indeed true, was global in scope, and was directly transforming the way I worked as a scientist. Not only was it a crisis of nature and society, but, selfishly, it was a personal crisis that affected the way I was able to practice tropical botany and systematics. My idealized quest for understanding the natural world was being brought to a halt by the disappearance of the very natural environments I wanted to study. Moreover, I was been forced to abandon basic research in exchange for a more proactive conservation program. It was paradoxical as well as disturbing.

Since that realization I have spent at least one-third, if not more, of my time and energy on environmental and conservation issues. This effort included conservation research as well as outreach and public relations activities to promote the conservation of tropical biodiversity. I am certainly not alone among my colleagues in the redirection of my professional efforts from scientific research to conservation advocacy. What else can we do?

I recently heard Dobzhansky's classic statement on the relationship of biology and evolution rephrased as "nothing in biology makes sense except in the light of conservation." Alas, it may be true, but unlike Dobzhansky's original version of that statement, the sequel is not an enlightening thought. As biologists in the 21st century we must at least frame our studies and investigations within the context of biodiversity conservation. But are we obliged to pursue only research that has conservation implications? I believe we are not.

The recent meeting of the Association for Tropical Biology (ATB), convened in Bangalore, India, in affiliation with the Ashoka Trust for Research in Ecology and the Environment, was entitled "Tropical Ecosystems: Structure, Diversity and Human Welfare." With over 400 attendees, the papers and posters covered a range of topics on tropical biology. However, there was a clear predominance of presentations on human interactions with the environment. It seemed that the "cool stories" about the evolution and ecology of tropical organisms took a back seat to documentation of the human threats to the environment. Here, too, was evident the change from an emphasis on basic tropical biology, which is a hallmark of ATB, to the environmental sciences.

So what has happened to "the increase and diffusion of knowledge?" Have our efforts to increase knowledge now been displaced by our zeal for salvaging the natural world as it is being savaged by human populations? If, as believed by some, the environmental battle has already been lost, are our efforts to save biodiversity in vain? Should we not be more concerned with documenting what remains of the natural world than expending our time and efforts in attempts to conserve it? If by chance we do preserve the remaining intact natural habitats over the next hundred years, how will we manage pristine but poorly understood habitats? These questions are difficult to answer.

As biologists trained in the natural history sciences, we must balance our efforts between basic research and conservation activities and not wait to see if we win the environmental battle. Time and resources are too short to do anything less. Knowing what plants, animals, and microorganisms are out there, where they occur, and how they work regardless of their "value" to humankind must still be our priority. The information we collect on the natural world will be a permanent record of our planet for centuries to come whether or not the remaining natural habitats are maintained for future generations to experience, to use, and to appreciate. In the Century of the Environment nothing makes sense in biology except in the light of understanding the natural world and preserving our knowledge of it.

Staff Research

Paul Peterson traveled to Rancho Santa Ana Botanic Garden in Claremont, California, (6-12 May) to work with Travis Columbus, Rosa Cerros Tlatilpa, and Michael Kinney on the phylogeny of the Muhlenbergiinae (Poaceae). Preliminary results based on ITS DNA sequences suggest that nine genera (*Aegopogon, Bealia, Blepharoneuron, Chaboissaea, Lycurus, Pereilema, Redfieldia, Shaffnerella,* and *Schedonnardus*) are nested within a paraphyletic *Muhlenbergia* clade. These results will be reported at the upcoming Botany 2001 meeting in Albuquerque, New Mexico. At Claremont, Peterson also presented a seminar titled "A New Look at the Muhlenbergiinae."

Gene Rosenberg visited Colombia on 12-17 May and the Azores Islands of Portugal on 16-26 June. The trip to Colombia, with Lisa Palmer of the Division of Fishes (NMNH) and Fernando Bretos of the Center for Marine Conservation (Washington, D.C.), covered the Caribbean coast from Cartagena to Santa Marta. In Santa Marta, the team carried out a preservation assessment of the collections of marine organisms at the Institute for Marine and Coastal Research (INVEMAR). The trip to the Azores, with Rick Wunderman and Tom Simkin of the Department of Mineral Sciences (NMNH), included the islands of São Miguel and Terceira, a site of recent underwater volcanism. With colleagues from the University of the Azores and the University of Lisbon, the Smithsonian scientists participated in a workshop to plan for a visit of the U.S. Navy research submersible NR-1 during the summer of 2002. The use of NR-1 will offer new capabilities for *in situ* underwater sampling in this geologically and biologically fascinating archipelago.

Staff Activities

Stanwyn Shetler led the annual trip to the New Jersey Pine Barrens for the Audubon Naturalist Society on 16 June. In the East Plains of the pygmy forest, which is a military reservation, the surprised participants found that a large area had been burned just a few days earlier, the fire set by an exploding practice bomb. Shetler and **Joan Nowicke** were among 70 persons who took part in the annual Northeastern Joint Botanical Field Meetings on 24-27 June, held this year on the Eastern Shore around Dover, Delaware.

Dan Nicolson has returned to the Committee for Spermatophyta of the International Association for Plant Taxonomy (IAPT), having resigned in 1987 to become secretary of the General Committee. He replaces William R. Anderson, who replaced Nicolson in 1987.

Professor V. H. Heywood, president of the International Council on Medicinal and Aromatic Plants (ICMAP), has appointed **Robert DeFilipps** to be Reviews Editor of ICMAP News.

New Faces

David Erickson, NSF-funded postdoctoral fellow working with **Elizabeth Zimmer** at the Laboratory of Molecular Systematics (LMS) and Charles Fenster at the University of Maryland, is investigating QTL mapping in the legume *Chamaecrista fasciculata*. He hopes to use an experimental crossing design to elucidate the number and relative effects of genes that promote adaptation to different habitats.

Rachel A. Levin, a postdoctoral fellow working with **Warren Wagner**, **Elizabeth Zimmer** and Mellon fellows Peter Hoch, Jorge Crisci, and Ken Sytsma, is interested in using phylogenetic techniques to address questions about character evolution in plants, especially fragrance evolution. Levin plans to study phylogenetic relationships within Nyctaginaceae. She received her Ph.D. from the University of Arizona, Tucson, with Lucinda McDade as her advisor. Her dissertation research focused on the phylogenetic relationships among Southwestern species in the family Nyctaginaceae and the evolution of fragrance within this group of mainly hawkmoth-pollinated taxa.

There are two Botany participants in the Research Training Program this summer. **Jeffery Saarela** (jeff_saarela@hotmail.com) is from Manitou, Canada. He recently graduated from the University of Manitoba, and wrote an honors dissertation on the taxonomy of the *Carex backii* species complex. He is working with **Paul Peterson** on the taxonomy of *Brachyelytrum erectum* (Poaceae) in North America.

Also in the Research Training Program is **Katarina Topalov** (katia@ptt.yu), from Novi Sad, Serbia. She is currently a third year undergraduate at the University of Novi Sad, and is particularly interested in forest ecosystems and vegetation of the Fruska Gora Mountain near Novi Sad. Her research project is an evaluation of plant diversity on the Guiana Shield, under the guidance of **Vicki Funk**.

Departures

Amanda Boone, former secretary in Botany, has accepted a position with the Environmental Protection Agency, Washington, D.C.

Jing-Ping Liao has returned to the South China Institute of Botany, Guangzhou, after conducting an SEM study of the pollen of Zingiberales.

Postdoctoral fellow **Molly Nepokroeff** has accepted an assistant professor position in the Biology Department at the University of South Dakota, Vermillion, effective in August.

Postdoctoral fellow **Linda Prince** has left to take up a postdoctoral fellowship at Rancho Santa Ana Botanic Garden, Claremont, California.

Eric Roalson will be concluding his postdoctoral fellowship research in molecular evolution on 19 August, to begin an assistant professor position in the School of Biological Sciences, Washington State University, Pullman.

In the Venezuelan Páramo

In this essay, **Laurence Dorr** recounts his recent adventures in the Venezuelan field.

"The first sign was the patch of rabbit fur, later the scat with animal bones, and finally the half-eaten 'mapache,' and I was convinced that there were puma roaming the Páramo de Guaramacal. At least the one (or ones) with whom we kept crossing paths was well fed and that lessened the anxiety that I might otherwise have felt. We also saw ample evidence of the presence of spectacled bear in the páramo. The clearest evidence of the latter were the fairly common patches of leaves left after the bear had dined on *Puya aristeguietae*, which conveniently for the botanist was in full flower.

"While the presence of these large mammals added some degree of excitement, the purpose of my recent trip was to collect plants in areas of Guaramacal National Park that had not been adequately explored before and to collect in seasons that had been neglected. We therefore found ourselves on top of Guaramacal in the middle of the rainy season. Civil Defense of Trujillo state lent us a large tent for use as a kitchen and pressing area, and TeleBoconó allowed us to use a small hut near their broadcast antenna where we could bunk sheltered from the wind, rain, and cold. Both tent and hut were greatly appreciated, especially since this 'tropical' field trip included night-time temperatures as low as 3°C.

"We collected along a transect from the summit (3,100 m) of the Páramo de Guaramacal northeast to the Fila Los Recostaderos, essentially completing a loop that earlier had included a hike from El Cafenol to the Fila. Our little stroll in the páramo had us drop from 3,100 to 2,400 m and then climb back up the 700 m we had lost. While my rain pants, rain jacket, and poncho kept the rain from making me wet, I nonetheless became soaked by the sweat from my exertion and thoroughly exhausted by the end of the day. Another transect took us from the summit of Guaramacal southwest to the Páramo El Pumar. As with the Fila, we had also climbed last winter from about 1,800 m to El Pumar at 2,600 m. We did not find anything that was new on this trip. Last winter we collected quite a few plants in El Pumar that we had not seen previously in the park.

"The páramo collecting, apart from a number of parasitic Loranthaceae that could not be identified in the field, did not yield anything that was unexpected. The best collecting of this trip was above El Cafenol where we walked through a 'potrero' along the edge of cloud forest from about 1,700 to 2,200 m. A number of these collections, including a narrow-leaved *Piper*, were species that neither I nor Basil Stergios and Miguel Niño could recall having seen before. Alas, our 'Catalogue of the Flora of Guaramacal' is rapidly becoming outdated. The last two trips (December-January and June) have produced a total of 21 genera and 51 species not previously reported from Guaramacal. When all of the material is worked up we may well have records of 1,500 species of vascular plants in the park.

"Before returning to Washington, Stergios took me on a quick day-trip to see one of the last vestiges of montane vegetation in Portuguesa state. We drove northwest of Guanare, forded the Río Suruguapo, and climbed to the Fila de San José de la Montaña on the border with Lara state. Many of the plants were familiar from Guaramacal, including *Croizatia brevipetiolata* (Euphorbiaceae), a species that was scarcely known a few years ago but is now appearing in almost all of the cloud forests examined at 1,600 to 1,800 m."

Merrill's *Species Blancoanae*

Dan Nicolson, whose first child was born in the Philippines while he was doing doctoral research, has always had an interest in the Philippine flora. While Dawn Arculus, formerly in Botany, was working on new types, she noted that some of our specimens of Merrill's *Species Blancoanae* had become isoneotypes. Nicolson knew that Blanco had published an early *Flora Filipinas* in 1837 (two subsequent editions), that no Blanco materials were extant, and that Merrill had recollected and distributed duplicates, which he, long before the term "neotype," called "illustrative specimens." Nicolson was unaware that the first set of these "illustrative specimens" was deposited at US, a fact that was discovered from the original correspondence between Merrill and the head curator at that time, William R. Maxon.

The US specimens frequently (about 50 percent of the time) have field information and early text sometimes differing from what Merrill published in 1917 in his "Species Blancoanae" citing his "Species Blancoanae" illustrative specimens as a series running from 1-1064. Nicolson decided to track down the illustrative specimens representing new species established, and to make information available on the Botany Website concerning these specimens, including which ones have field labels. Ultimately Nicolson would like to have these "first stage neotypes" made available on the Web, as an encouragement to workers dealing with these Philippine taxa to chose the US sheets as second stage neotypes. A paper documenting the provenance of the US Species Blancoanae, their original labels and texts, is expected to be published in the August 2001 issue of *Taxon*.

The Conservation Column

By Gary A. Krupnick

The Plant Conservation Unit has recently revised the Web site of the *Biological Conservation Newsletter*, which is now available at <http://rathbun.si.edu/bcn> (please note the new URL). The revised Web site includes a new searchable "*BCN* Bibliography," which consists of over 15,500 references to literature on conservation biology (both plant and animal biology). The citations come from the "Current Literature" section of *BCN*, dating back from 1983 to the present. These references have been obtained from a weekly review of new journals and books received by the National Museum of Natural History libraries, from a monthly scan of *Current Contents*, and from suggestions submitted by subscribers to the newsletter.

The bibliography currently includes over 14,200 article titles and 1,300 book titles. The article citations come from nearly 940 different scientific journals, newsletters, bulletins and newspapers. A searchable interface allows visitors to look for a particular article by selecting the title, author, or keyword field and entering a keyword, phrase, or name. Many articles link directly to their corresponding journal's homepage, where some journals allow non-subscribers to view abstracts and/or articles. New citations can easily be added to the bibliography by contacting the *BCN* editor at krupnick.gary@nmnh.si.edu.

Botany Web Site Update

A new Web interface is available for the Index Nominum Genericorum (ING) database. Speed is much improved and new options for searching and reporting are provided. The full ING record will be displayed if fewer than 100 records are found. Otherwise a list will be returned and one or more records can be selected for display of the complete record. The database can now be searched by family, author, or the name/basionym of the type. The help file on the new search form and the introduction on the ING home page give additional search tips and describe the limitations of the ING database.

The new URL for the Web version of ING is <http://rathbun.si.edu/botany/ing/ingForm.cfm>. Your suggestions and corrections are welcome. Contact information is available on the search page.

Two new sections, "Events and Activities" and "References and Tools," have been added to the Botany Web site <http://www.nmnh.si.edu/departments/botany.html>. We hope this makes it easier to find the content we are providing. Under "Events and Activities" find announcements and archives for meetings and symposia, and special events such as the awarding of the first Cuatrecasas Medal. "References and Tools" highlights information resources we are making available. Some of this material is also listed under "Research" or "Publications" but the new section organizes resources by general topic independently of research projects.

The section on "Useful Web Site References" has been moved from the page on type specimens under "Collections" to a new presentation, "Botanical Links," listed under "References and Tools." Many useful Web resources with links are found here. One popular feature is the list of herbaria with Web sites. If you know of one that is not listed, please inform the Webmaster by e-mail <stone.sylvia@nmnh.si.edu>.

Guyana Plant Diversity Documented

The plant diversity of a pristine and previously undocumented lowland rainforest of the Guiana Shield in South America has been documented and described by a group of scientists from Botany. H. David Clarke (now with the University of North Carolina at Asheville), **Vicki Funk**, and **Tom Hollowell** of the Biological Diversity of the Guianas Program have published "Using Checklists and Collections Data to Investigate Plant Diversity: I: A Comparative Checklist of the Plant Diversity of the Iwokrama Forest, Guyana" in *Sida, Botanical Miscellany*.

The work presents the results of floristic research conducted as part of the collection of baseline data for this 360,000 hectare area in central Guyana, an area that has been set aside for rainforest conservation and sustainable development. Extensive field work was carried out to make the plant collections that provide the basis for this flora and are detailed along with discussion of ecology and habitats, regional context, and comparison with four other recent floristic works of areas of comparable size on and adjacent to the Guiana Shield in northeastern South America. The combined checklist of 4,659 species indicates that there is considerable floristic heterogeneity among even adjacent sites and will prove useful to botanists, conservation biologists, ecologists, and planners working in northeastern South America. Copies of the publication are available for purchase from the Botanical Research Institute of Texas, 509 Pecan St., Fort Worth, Texas 76102-4060, USA, or visit <http://www.brit.org/sida/sbm/sbm21toc.htm>.

Vacancy for a Guyana Collector

The Biological Diversity of the Guianas Program, of the U.S. National Herbarium, has an opening for a plant collector. Beginning in January 2002, the individual selected will spend a year in Guyana, South America collecting plant specimens (minimum of 12 months in the Guianas), and one to two months in Washington, D.C., helping to identify these collections.

The position is a one-year contract and contains an active program of fieldwork performed by the contractor to include no less than five to six field trips of three to four weeks (minimum) duration per trip into the interior of Guyana. Location of the trips is developed in consultation with the program director.

For additional information, please contact: Carol L. Kelloff, Biological Diversity of the Guianas Program, U.S. National Herbarium – MRC 166, Smithsonian Institution, Washington, D.C., 20560-0166 U.S.A. Telephone: (202) 786-2518; Fax: (202) 786-2563; E-mail: kelloff.carol@nmnh.si.edu. This position is open to all qualified individuals and will remain open until a suitable person is found. The Smithsonian Institution is an affirmative action/equal opportunity employer.

Lellinger

Continued from page 1

(Bromeliaceae); *Fleischmannia lellingeri* King & Robinson and *Hebeclinium lellingeri* King & Robinson, both Asteraceae. He is presently finishing Part 2 of the overall publication, while simultaneously coordinating the preparation of a Warren H. Wagner memorial issue of the *American Fern Journal*.

Occasionally a scientist will be accorded the pleasure of being the namesake of a small new genus, but few have been the recipient of a large one. The grammitid fern genus *Lellingeria* A.R. Smith & R.C. Moran came into being when three genera or "grades" were fractionated into seven or eight genera, and *Lellingeria* was created to contain approximately 60 species occurring in tropical America, Africa, Madagascar, and Hawaii.

In the past few centuries, different groups of desirable plants were subjected to surges of acquisition by obsessed but often well-intentioned fanciers, gardeners, and speculators in various parts of the world. Perhaps the most recent example was the "Cactus Craze" involving endangered species, but the most famous were "Tulipomania" and "Orchidomania." Our diminutive friends the ferns, however, did not escape such attention during the period from 1830 to 1860 in Victorian England, when the verdant countryside was scoured for cristates and other mutants destined for incarceration in Wardian cases, a pastime soon to become known as the "Victorian Fern Craze," or "Pteridomania." The rise and fall of that movement has recently been elaborated by Robbin Moran (*Fiddlehead Forum* 28(2): 11-14. 2001).

In today's world, fern collections are still yielding many interesting novelties, but in a spirit of vastly more controlled levels of collecting and a high regard for the conservation of remaining plant populations of the tropics. Recent work is exemplified by, among many others, Gregory S. McKee, who has assisted Lellinger in Botany since 1998, and has with Carol L. Kelloff of the Smithsonian's Biological Diversity of the Guianas Program, discovered a remarkable new species named *Hecistopteris kaieteurensis* from Kaieteur National Park in Guyana. The forked fronds of this epiphyte attain a length of only 2 cm (less than 1 inch). Other fern people, who have been long-term visitors or on fellowships recently in Lellinger's laboratory, include Julie Barcelona of the Philippines, and the Brazilians Jefferson Prado who is working on Adiantaceae and Paulo Windisch, who is undertaking a fern flora of the sprawling state of Mato Grosso.

Lellinger's future plans include not only preparation of the second edition of his landmark book, *A Field Manual of the Ferns & Fern-Allies of the United States and Canada* (Smithsonian Institution Press, 1985), but also a color-illustrated photographic field guide to the ferns and fern-allies of the northern Netherlands Antilles (Dutch West Indies), in collaboration with his wife.

Publications

Abu-Asab, M.S., **Peterson, P.M.**, **Shetler, S.G.** and **S.S. Orli**. 2001. Earlier plant flowering in spring as a response to global warming in the Washington, DC, area. *Biodiversity and Conservation* 10: 597-612.

Barker, N.P., **Faden, R.B.**, Brink, E. and A.P. Dold. 2001. Notes on African plants. Commelinaceae. Rediscovery of *Triceratella drummondii*, and comments on its relationships and position within the family. *Bothalia* 31: 37-39.

Beltrán, H. and **J.F. Pruski**. 2000. *Talamancalia* y *Rolandra* (Asteraceae): dos nuevos registros para el Perú. *Arnaldoa* 7(1-2): 13-18.

Clarke, H.D., **Funk, V.A.** and **T. Hollowell**. 2001. Plant Diversity of the Iwokrama Forest, Guyana. *Sida, Botanical Miscellany* 21: 1-86.

Faden, R.B. 2001. New taxa of *Murdannia* (Commelinaceae) from Sri Lanka. *Novon* 11: 22-30.

Faden, R.B. 2001. A new species of *Tradescantia* (Commelinaceae) from Costa Rica. *Novon* 11: 31-35.

Faden, R.B. and M.H. Alford. 2001. A new species of *Commelina* (Commelinaceae) from Tanzania. *Novon* 11: 16-21.

Funk, V.A. and **H. Robinson**. 2001. A bully new genus from the Andes (Compositae: Liabeae). *Systematic Botany* 26: 216-225.

Funk, V.A. 2001. SSZ 1970-1989: A view of the years of conflict. *Systematic Biology* 50: 153-155.

Littler, M.M. and **D.S. Littler**. 2001. Living stromatolites, built by the cyanobacterium *Schizothrix gebeleinii*, form enduring modern reef structures. *Coral Reefs* 19: 258.

Puente, R. and **R.B. Faden**. 2001. Vascular Plants of Arizona: Commelinaceae. *J. Arizona-Nevada Acad. Sci.* 33: 19-26.

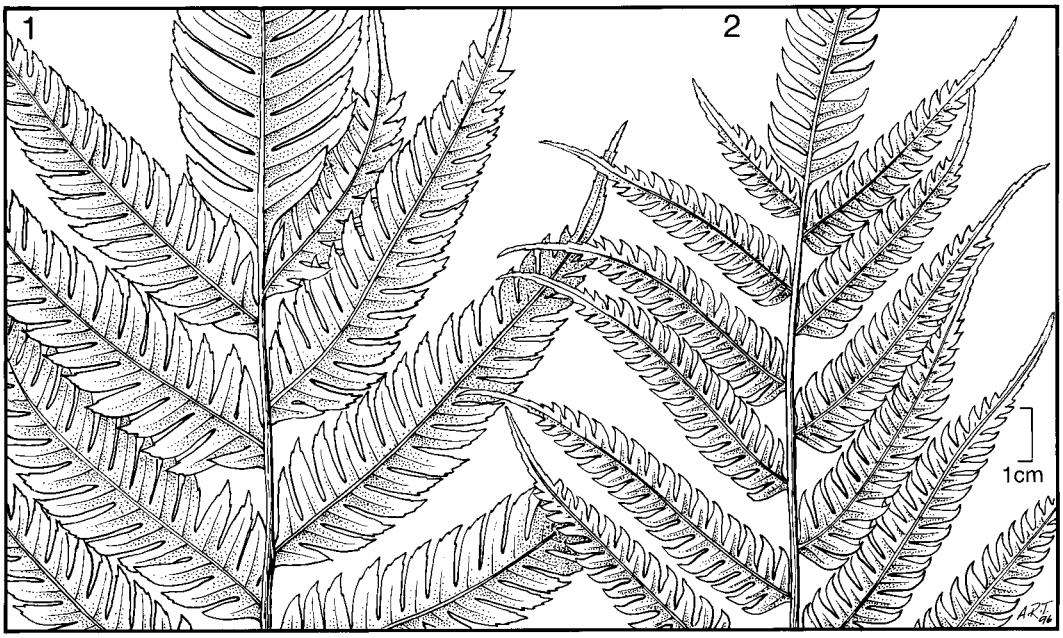
Shetler, S.G. and **S.S. Orli**. 2000. *Annotated Checklist of the Vascular Plants of the Washington-Baltimore Area. Part 1. Ferns, Fern Allies, Gymnosperms and Dicotyledons*. Washington, D.C.: Smithsonian Institution. 188 pp. [Duplicated]

Wagner, W.L. and D.H. Lorence. 2001. Albert Charles Smith (1906-1999): a monumental botanist. *Allertonia* 8: 329-339.

Wagner, W.L., Wood, K.R. and D.H. Lorence. 2001. A new species of *Cyrtandra* from Kaua'i, Hawaiian Islands. *Novon* 11: 146-152.

Art by Alice Tangerini

Pteris polita Link and *P. deflexa* Link



Pteris polita (left) and *P. deflexa* (right) from South America have often been confused or synonymized because of their similarity in frond form. However, *Pteris polita* has asymmetrical, decurrent subapical pinnae and *P. deflexa* has symmetrical, non-decurrent subapical pinnae. Differences in rhizome diameter, basal pinnule width, and costa indument further distinguish the species. For further details, see Lellinger (1997. *Amer. Fern J.* 87: 66-70).

Smithsonian
National Museum of Natural History

Department of Systematic Biology-Botany, MRC-166
Washington DC 20560-0166

Official Business
Penalty for Private Use $300

First-Class Mail
Postage & Fees
- PAID -
Smithsonian
Institution
G-94