Department of Botany & the U.S. National Herbarium

The Plant Press

Smithsonian
National Museum of Natural History

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Botany Profile

Cyberspace Floras and Informational Botany

By Robert DeFilipps

Good morning. As your friend, I think I should tell you something. People have been coming around here and asking me questions about you. They have been making inquiries into your background. Don't worry – I knew you would want me to take care of everything, so I told them all about you. Thanks to me they obtained your name, phone number and e-mail address. These people might be from the government, or maybe from the public: I don't know. Their questions seemed harmless enough. They were wondering about your research, if you know about Brazil or China, if you know Guinea or Ghana from Gabon or Guyana, and if you are conversant with orchids or green medicines or flower-eating bats. So I told them about your specialties. The photo of you doing fieldwork: they downloaded that too. It could be the start of a nice relationship. I just thought I'd mention it."

Who am "I"? I'm the Botany computerized information dissemination system: your Web sites and internet listings. And those people making inquiries about you, as a Department staff member, represent a cross-section of potential interns; Smithsonian Research Training Program (RTP) participants; fellowship scholars and pre- to post-doctoral workers seeking entry information; students at high schools and university undergraduate and graduate schools; U.S. government officials desirous of technical botanical information; volunteers interested in assisting your research; colleagues and co-workers at other herbaria, museums and botanical gardens around the world seeking advice; and members of the public in this country and abroad, with an ever-expanding spectrum of questions about plant life.

The Department has configured a special group of persons who are dedicated to the management and dissemination of electronic information that originates from the staff. In a world that is now more fully equipped than ever with cell phones, laptops, palm pilots, digital cameras, high-definition plasma TVs, CDs and DVDs, people as a whole are becoming more computer-literate, with children sometimes starting to use computers at the age of two years. They grow up to become the sophisticated and inquisitive minds of the future, and their needs must be served, as well as the needs of previous generations of people, in order to move forward with the world's botanical, biodiversity-oriented, and environmental agendas.

The Department's Information Management (IM) group presently consists of five people (three full-time, one half-time and one quarter-time). They all have in common an exceptional prowess on the computer, with a stratospheric level of individual computer literacy as compared to the wiring of the average brain. Their interior mind-monologue is finely attuned to concepts of the causation of things in computer software and hardware, with how, for example, an array of mechanisms causes all the facets of MicroSoft Windows to coincide and work.

A quick introduction to members of the IM team is in order. Supervisor Ellen Farr, a published mycologist and botanical bibliographer, is from Arcata, California and received an M.S. in Botany from Virginia Polytechnic Institute and State University (1974); she began employment at the Smithsonian Institution in 1974. Elaine Haug is from Wilmington, North Carolina and has much experience in biological conservation; she received a Bachelor of Individual Studies (B.I.S.) degree in Environmental Resource Assessment from George Mason University, and started working at the Smithsonian in 1987. Sylvia Stone Orli is from northern Virginia, received a M.S. degree in Wildlife Biology from the University of Arizona, and started in Botany in 1993. Christian ("Chris") Tuccinardi is from Wheaton, Maryland, and has a B.S. in Horticulture from the University of Maryland; he began working at the Smithsonian in 1983. The newest member of the group is John Boggan, originally from Buffalo, New York. John received an M.S. in Systematic Botany from Cornell University in 1991 and began his Smithsonian career that same year. His specialty is Gesneriaceae and he spends half his time working as a research assistant to Emeritus Curator Laurence E. Skog. There is a more or less formal continuity in the "division of labor" among the group members, although their expertise is of a quality that makes interchangeable situations

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Visitors

H. David Clarke, University of North Carolina, Asheville; Guyana plant identifications (1/2-1/6).

Patrick Kaciolek, California Academy of Sciences; Lohman / Andrews and EPA Diatom Collections (1/5-1/9).

Hermilo Quero Rico, Universidad Nacional de Autonoma de Mexico; Arecaceae (1/5-1/7).

Zack Falck, Carnegie Mellon University; Dewey field books in Botany Library (1/8-1/9).

Rob Naczi, Delaware State University; Cyperaceae (1/8-1/9).

Richard Eilers, University of Maryland, Horn Point Lab; Chesapeake Bay Seagrass and *Potamogeton* (1/9; 2/5).

Ann Johnson, ESRI (GIS and mapping software); San Jacinto Mountains Project (1/12).

Tom Wendt, University of Texas; Piperaceae, Polygalaceae (1/12-1/13).

Linda Novitski, California Academy of Sciences; Diatom collection (MSC) (1/14-1/30).

Andrew Henderson, New York Botanical Garden; Arecaceae (1/15-1/16).

Robert Creamer, Independent researcher; Botanical art, specimen scanning (1/16; 1/20-1/23; 1/30; 2/6; 3/11-3/12).

Mary Ann Feist, Illinois Natural History Survey; *Oxypolis, Ptilimnium* (Apiaceae) (1/16).

L. Alan Prather, Michigan State University; Lamiaceae, Polemoniaceae (1/20-7/31).

Karen Kemp, University of Redlands; San Jacinto Mountains Project (1/23).

Matthew Cimino, Salisbury University; *Hypericum* (Hypericaceae) (1/30).

Hal Horwitz, Independent researcher, North Carolina; Orchidaceae (1/30).

Gail Chmura, McGill University; Paleoecology of Florida Everglades (2/10-2/13).

Jay Reichman, Environmental Protection Agency, Western Ecology Division; DNA sampling of *Agrostis* (Poaceae) (2/12-2/13).

Laurie Davies Adams, Coevolution Institute; Plan September 2004 meeting of the North American Pollinator Protection Campaign (NAPPC) (2/13).

Kimberly Winter, North American Pollinator Protection Campaign (NAPPC); Plan September 2004 meeting of the NAPPC (2/13).

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The Plant Press

New Series - Vol. 7 - No. 2

Chair of Botany
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Travel

Pedro Acevedo traveled to Raleigh, North Carolina (2/11) to attend a graduate committee meeting for doctoral student Alexander Krings at North Carolina State University.

Robert DeFilipps traveled to Dominica (3/19 – 3/28) to present illustrated lectures at Dominica State College and the University of the West Indies in Roseau.

Paul DePriest traveled to New Orleans, Louisiana (2/5) to attend a meeting of the National Science Board of the National Science Foundation.

Robert Faden traveled to Bangkok, Thailand (1/6 – 1/28) to do field work and to consult with graduate student Thaweesak Thitimetharoch at the Khon Kaen University; and to London, UK (2/22 – 3/19) to study the collections at the Royal Botanic Gardens, Kew.

Vicki Funk traveled to Shepherdstown, West Virginia (1/4 – 1/7) to attend a board of Governors meeting of the International Biogeography Society; to Norman, Oklahoma (3/7 – 3/10) to present a talk in the George Lynn Cross Lecture series in the Department of Botany and Microbiology at the University of Oklahoma; and to Durham, North Carolina (3/19 – 3/20) to meet with faculty and attend a thesis defense.

W. John Kress traveled to Cali, Colombia (2/18 – 2/21) to attend a workshop on "Investigating Functional Diversity for Investments in Agrobiodiversity;" and to Yunnan, China (2/26 – 3/11) to deliver a paper at a symposium and to conduct field research.

Diane and **Mark Littler** traveled to Bocas del Toro, Panama (2/26 – 3/9) and to Carrie Bow Cay, Belize (3/7 – 4/8) to continue ongoing field research.

Dan Nicolson traveled to Bronx, New York (1/11 – 1/14; 2/16 – 2/19) to conduct research at the New York Botanical Garden.

Paul Peterson traveled throughout Peru (3/18 – 4/28) to collect grass specimens for his research.

Laurence Skog traveled to Sarasota, Florida (2/22 – 3/2) to conduct research at the Selby Botanical Gardens.

Warren Wagner traveled to Lihue, Kaua'i (1/12 – 1/16; 2/28 – 3/6; 3/30 – 4/4) to meet with staff of the National Tropical Botanical Garden, present a lecture, and conduct research; to Telluride, Colorado (2/12 – 2/16) to attend a workshop on the Encyclopedia of Life; and to Kaua'i and O'ahu (3/12 – 3/21) to conduct field research.

What is Sustainable Development?

As world populations expand, natural resources are consumed, and environments significantly changed, people and communities are taking action locally, nationally, and globally. At the international level one of society's responses to the increasing degradation of the environment is the Convention on Biological Diversity (CBD) initiated in Rio de Janeiro in 1992. This treaty represents a revolution in the value placed on biodiversity and the intellectual property rights attached to Nature. According to the Convention biodiversity should be conserved, sustainably used, and its benefits shared among all parties. Worldwide efforts to conserve and share the rights to biodiversity are underway. Of the three objectives of the Convention on Biological Diversity the sustainable use of biodiversity is perhaps the most difficult to define and implement. What is sustainability and can it be achieved?

The CDB defines sustainability as "the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations." This definition and the goal of sustainability is certainly a tall order for a planet whose inhabitants are rapidly growing in numbers and consuming its resources at an ever increasing rate. But it is also a goal that is foremost in everyone's mind. The sustainable use of biodiversity is only a part of the larger goal of sustainable development, the focus of the recent World Summit on Sustainable Development held in Johannesburg, South Africa in September 2002. In Johannesburg discussion and debate called for definitive actions on sustainable development that can comprehensively address the economic, social, and environmental issues confronting the global community. Although the CBD's goals for conservation and benefit sharing were overshadowed by the drive for sustainability, the link between conserving biodiversity and successful sustainable development was recognized. At the Johannesburg summit concrete definitions and goals of sustainability and sustainable development were articulated; progress towards outlining a plan to achieve these goals was limited.

I recently participated in an international conference on "Botanical Gardens and Sustainable Development" held at the Xishuangbanna Tropical Botanical Garden in Yunnan, China. The purpose of the conference was to address how botanists and botanic gardens can develop plans for the sustainable use of plants and habitats. With over 75 participants from ten countries, including representatives from Kew, Edinburgh, Sydney, Singapore, and Missouri as well as most of the major botanic gardens in China, the perspectives varied widely as did the definitions of sustainability and the means of implementation.

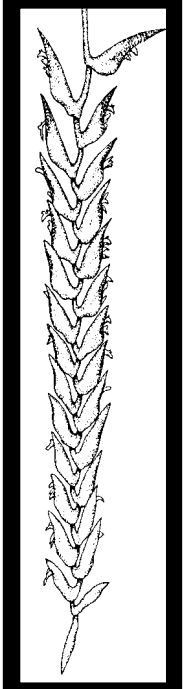
In fact, for many of the presentations at the conference, the notion of sustainability was repeatedly confused with conservation; *ex situ* vs. *in situ* conservation of germplasm, rather than the sustainable use of biodiversity, became the focus of discussion. The interpretations of sustainability approached the absurd when a representative from one of the participating gardens considered that "sustainable development" applied particularly to the financial growth and commercial success of their own institution. Now that's what I call a personal approach to sustainability!

Stephen Blackmore, Director of the Royal Botanic Garden Edinburgh, provided one of the best discussions of sustainability, which he viewed as a dynamic balance between society, economics, and the environment. These three factors can be represented by the three apices of a triangle: an equilateral triangle is a perfect balance among the three. The equilibrium becomes dangerously unstable when the economic apex dominates the societal and the environmental elements of the triangle. The thrust of his argument was that if sustainable development is to succeed, botanic gardens must act to maintain this balance by strengthening the environmental component.

As the only representative from a natural history museum at the conference, I stressed that to sustainably use and manage the Earth's biological riches, we must first know what this biodiversity is and where it is found. The job of plant taxonomists and systematists is to mobilize data on plant diversity, distribution, and classification and provide this information to conservationists, land managers, and local environmentalist as the first steps in sustainable use. Taxonomists rely on the vast natural history collections that have been accumulated over the last 250 years and now housed principally in the world's museums and herbaria as the raw material for their work. The sustainable use of biodiversity and the environment can only succeed if it is based on a sound understanding of the natural world and how humans interact with it. The contributions from scientists at botanic gardens, herbaria, and natural history museums contribute significantly to this understanding and hence the sustainable use and development of natural resources.

At the conclusion of the conference in China the participants agreed that sustainability is neither simple to define nor easy to implement and, perhaps, our actions as individual citizens of the Earth may have in the long-run the most lasting effects.

Chair With A View — W. John Kress

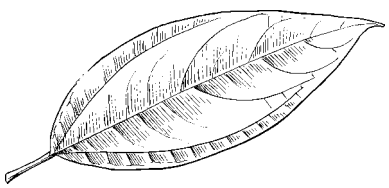


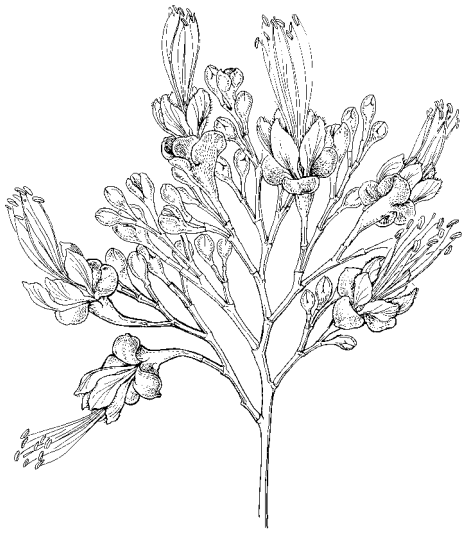
Staff Research & Activities

On 22 March during a visit to Dominica, **Robert DeFilipps** presented two illustrated lectures in Roseau, on the subject of "Ornamental and Medicinal Plants of the Guianas and Dominica," first at Dominica State College to an audience primarily of agricultural students, and in the evening at the University of the West Indies (UWI) Center for Continuing Education to a group of conservationists, environmentalists and local botanists. The UWI group observed that alien weeds were causing a prominent threat to native vegetation in Dominica, particularly citronella grass (*Cymbopogon* sp.) taking over various hillsides, bamboos smothering roadsides, as well as *Miconia calvescens* (Melastomataceae), busy Lizzie (*Impatiens* sp., Balsaminaceae), lantana and guava. Control measures will need to be taken. DeFilipps later participated in a discussion on Dominican environmental concerns held at the Papillote Nature Retreat on the slope of Morne Macaque in the Roseau River Valley. At the meeting were Clayton Shillingford (President, Dominica Academy of Arts and Sciences), Anne Jno. Baptiste (owner of Papillote), and Nancy Osler (Research Coordinator for the Archbold Tropical Research and Education Center at Springfield). After a visit by Shillingford to a pandanetum maintained as a demonstration garden at Rosalie Estate by DeFilipps, several specimens of *Amherstia nobilis* (Pride of Burma, Leguminosae) and *Latania verschaffeltii* (yellow latan palm) were planted there.

Robert Faden spent three weeks in Thailand (7 – 28 January) working with Thaweesak Thitimetharoch, a graduate student at Khon Kaen University who spent five months at the Smithsonian in 2002. Thitimetharoch is working on a Ph.D. degree studying the Commelinaceae of Thailand. Together they visited herbaria in Bangkok (BK and BKF) and in Chiang Mai (CMU and QBG) and did field work in northern Thailand. They visited Doi Inthanon National Park, which includes the highest point in Thailand (2565 m), and Doi Pha Klong National Park in Phrae Province, which has a nature trail going up a jagged limestone hill. On the latter they encountered *Aetheolirion stenolobium*, a monotypic genus of Commelinaceae that is endemic to Thailand. It is a twiner with pod-like capsules to 16 cm long. On Doi Inthanon they found *Streptolirion volubile* and *Porandra scandens*, genera that Faden had never seen in the field before. Thus, the field work, although limited, was highly successful. Faden and Thitimetharoch are planning to write a paper about the four species (in three genera) of the subtribe *Streptoliriinae* in Thailand. DNA samples were collected from three genera of Commelinaceae that have not been sequenced previously. On January 23, Faden presented a seminar in the Biology Department of Khon Kaen University entitled, "Biosystematic studies of Commelinaceae, a tropical family of monocots."

Faden spent four weeks (22 February – 19 March) at the Royal Botanic Gardens, Kew continuing his work on African Commelinaceae, especially for the *Flora of Tropical East Africa*. He was surprised to find that a loan had just been pulled for a student in Madrid who was beginning a revision of the African endemic genus *Palisota*. Both Kew and the Natural History Museum had waited to send out loans of this genus until Faden had a chance to study the specimens he needed for his research. The work was especially challenging, not only because Faden had brought neither the literature nor his notes on the genus, but also because one of the species he had to deal with, *P. mannii*, which can have leaves up to 1.5 m long, is represented in the herbarium mainly by partial and atypical specimens. An important result was the confirmation that *Palisota orientalis* of eastern Tanzania, which is strikingly similar to the Central African *P. ambigua*, is indeed a distinct species. Faden also worked on the African species of *Amischotolype* and on a monograph of the African genus *Polyspatha*.





W. John Kress traveled to Yunnan, China from 26 February – 11 March to attend a symposium on "Botanic Gardens and Sustainable Development" at the Xishuangbanna Tropical Botanical Garden. He delivered a paper entitled "Natural History Museums and Herbaria: Their Role in Sustainable Development." He also spent time on a field project with colleague Qing-Jun Li and students on the pollination biology of gingers.

Kress working with **Stanwyn Shetler**, **Sylvia Stone**, **Rusty Russell**, and Elizabeth Wells (The George Washington University) was awarded a grant from the Washington Biologists' Field Club to develop and apply new taxonomic tools and electronic field guides to the flora of Plummers Island, a small (12-acre) wooded island in the Potomac River in Montgomery County, Maryland. This project is part of the larger NSF-sponsored program in collaboration with the University of Maryland and Columbia University to develop an advanced image recognition system for plant identification.

On 3 March, **Gary Krupnick** gave a presentation "A Test of Conservation Hotspots and Ecoregions Using Taxonomic Data" to a course that is part of the Sustainable Development and Conservation Biology masters program at the University of Maryland at College Park.

Mark and **Diane Littler** gave two invitational lectures (*Waterways and Byways of the Indian River Lagoon*) and a book signing for the 2004 Ocean Science Lecture Series at Harbor Branch Oceanographic Institution in Fort Pierce,

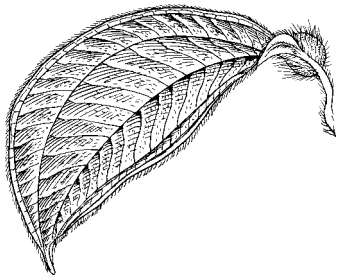
Florida, on 28 January. This presentation highlighted the beauty of the Indian River Lagoon and its interconnected habitats and organisms from the perspective of science, angling and photography.

Dan Nicolson just returned from a trip to Europe (25 February – 8 March). He worked at the Royal Botanic Gardens at Kew for a week, using their biographic and reprint files to update the *Taxonomic Literature edition 2 (TL-2)* text (concerning authors beginning with F and G). The next stop was Munich where Nicolson was one of three invited botanists (the other two were Simon Mayo from Kew and Tom Croat from St. Louis) to speak during the ceremony granting Josef Bogner, a long-time head-gardener at Munich, an honorary Doctorate (Ehrendoktor). The final stop was in Vienna where Nicolson met with Todd Stuessey about International Association for Plant Taxonomy business.

On 21 January, **Rusty Russell** presented a poster entitled "Herbaria as Sources of Historic Land Cover Data" at the Land Cover/Land Use Change Workshop sponsored by NASA at the University of Maryland.

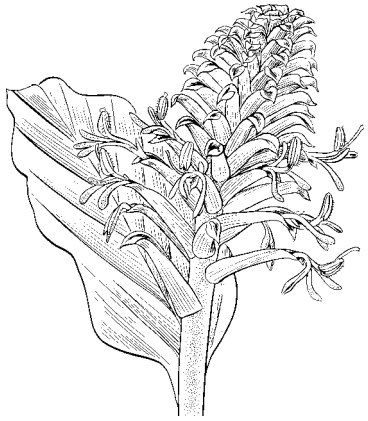
Alain Touwaide has been appointed Associate Editor for the History of Science of the *Journal of the Washington Academy of Sciences*. From now onward, the journal will include in each issue one or more articles on the history of the sciences, including botany.

Revitalizing a longtime interest in the problems of Hawaiian *Cyrtandra*, **Warren Wagner** traveled to Hawai'i from 12 – 21 March to collect specimens with former post-doctoral fellow Eric Roalson, now at Washington State University, and Roalson's new Ph.D. student, John R. Clark. For their preliminary work, they collected about 15 species of *Cyrtandra* as well as a number of hybrids on the islands of Kaua'i and O'ahu.



Awards & Grants

Elizabeth Zimmer received official word that she has been appointed as a Fellow of the Radcliffe Institute for Advanced Study of Harvard University for the Academic Year 2004-2005. The fellowship class of 45 includes scholars from the U.S. and abroad, at different stages of their careers and representing 24 different academic, professional and artistic fields. While there, she will be learning techniques for studying floral developmental evolution, primarily in the early eudicot lineage, the Ranunculaceae.



New Faces

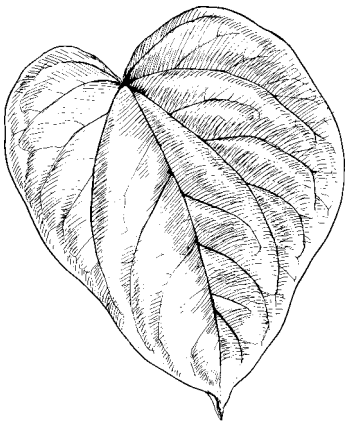
Chelsea D. Specht, a postdoctoral fellow, sponsored by **W. John Kress**, started a fellowship in the Department on 22 March. Specht received her Ph.D. in Biology from New York University with a concentration in evolutionary biology and botany. Dennis Stevenson at New York Botanical Garden and Rob DeSalle of the Molecular Systematics Laboratory at the American Museum of Natural History were her advisors. Her dissertation research concentrated on the family Costaceae. Results from her work on Costaceae indicate that specialized relationships with animal pollinators have led to increased rates of diversification in two bird-pollinated lineages of this family. While at the Smithsonian, Specht will investigate the effect of pollination syndromes on rates of speciation and diversification in monocots with sampling focus on the Zingiberales. Additionally, Specht will work on the phylogeny and evolution of Heliconiaceae and Costaceae.

Dogwood Named After Eyde

A new species, *Cornus eydeana* was recently named for Richard H. Eyde (1928-1990), a curator and plant anatomist in the Department of Botany from 1962 until his death. The paper is by Xiang, Shui and Murrell in *Systematic Botany* (28: 757-764. 2003) and says (p. 759) "Named after the late Dr. Richard H. Eyde to honor his invaluable contributions to our understanding of dogwoods." The species is described as 5-12 m tall, remarkably tall for a dogwood and quite appropriately named for Dick Eyde who was also remarkably tall (over 2 meters).

Botanical Partners Lecture Series

Brent Berlin, Professor of Anthropology at the University of Georgia, continued the Botanical Partners Lecture Series by presenting "Bioprospecting Research, Local Stakeholders, and the Convention on Biological Diversity" on 15 January at the United States Botanic Garden (USBG) Conservatory. The Botanical Partners Lecture Series is a collaboration between the Department and USBG, designed to bring together the Washington scientific community interested in botanical studies. Invited speakers have been chosen to attract participants from a broad spectrum of the local community who are interested in the botanical sciences. An informal reception after the talk was hosted to promote discussion and exchange of ideas. If you have suggestions for future speakers, please contact Gary Krupnick at krupnick.gary@nmnh.si.edu.



Touwaide Reference Collection Details the History of Botany

Alain Touwaide, a recognized and renowned scholar of the history of ancient, medicinal, and Renaissance botany, has been a Research Associate in our Department sponsored by **Dan Nicolson** and **W. John Kress** for a number of years. While in residence, Touwaide has made great use of the library resources in the Department, in the Smithsonian, the Library of the National Institutes of Health, and the Library of Congress in pursuing his research on the history of botany and the transmission of plant knowledge from the ancient Greeks to present time. In addition to receiving outside funding support from the EarthWatch Institute and the Smithsonian Institution's Women's Committee (with Nicolson) Touwaide has been involved in the development of botany exhibits at NMNH, the Library of Medicine, and the Hunt Institute in Pittsburgh. His work has not only brought recognition to himself, but also to the Department of Botany and the Institution.

Touwaide has now brought to the Department his own reference collection of monographs, journals, and microfilms documenting the history of botany. In 2003 Touwaide first made the proposal to Nicolson and Kress to bring this resource to the Department to enhance his research as well as that of the Department's scientists and other scholars in the field. After discussion with the Botany Space Committee, it was decided that "The Cave" on the 5th floor of the National Museum of Natural History was the best space to house the collection in order to make it available to all who would like to use it. At that point an agreement (reviewed by the Office of General Council) was made to house the collection in the Department for a five-year period (with the possibility of renewal) with no liability for damage or loss to us. This arrangement was previously discussed and approved by the Smithsonian Institution Library (SIL). There will not be any impact on the Botany Library. Touwaide will catalogue the collection in collaboration with SIL technical services with a compatible software system.

The Touwaide library collection is a fantastic temporary resource in the Department for understanding the history of botany and it is recommended that those who are interested should make use of it in collaboration with Touwaide. When the cataloguing and arrangement of the volumes are complete later this year, Touwaide will provide a tour of the resource for all those interested in the collection.

Visitors

Continued from page 2

Jim Harle, Independent researcher; Volunteer interview (2/17).

Priscilla Muriel, University of Aarhus, Denmark; *Virola* (Myristicaceae) (2/19-2/26).

Harvey Ballard, Ohio University Environmental & Plant Biology Department; Violaceae (2/23-2/27).

Noel Holmgren, New York Botanical Garden; Brassicaceae (3/3; 3/16).

Sonia Nino S., Independent researcher; Volunteer interview (3/3).

Gretchen Ionta, University of Florida, Florida Museum of Natural History; Apocynaceae Subfamily Periplocoideae of Old World Tropics (3/8-3/9).

Bekka Stone, New York Botanical Garden, Institute of Economic Botany; R.A. Howard Slide Collection, poisonous plants (3/8-3/11).

Mikaila Milton, National Park Service; District of Columbia Herbarium (3/9).

Job Kuijt, University of Victoria; *Psittacanthus, Phthirusa, Arceuthobium* (Loranthaceae) (3/10-3/21).

Lucinda McDade, Academy of Natural Sciences; Costa Rican Acanthaceae (3/11).

Ellery Troyer, Andrews University; Grass identification (3/16-3/18).

Susan Tamulevich, Independent writer; Herbarium visit (3/19).

Kamal Ibrahim, Independent researcher; East African Poaceae (3/23).

Fran Curtis, Independent researcher; Volunteer interview (3/24).

Alan Graham, Missouri Botanical Garden; Lythraceae (3/25-3/26).

Shirley Graham, Missouri Botanical Garden; West Indian *Ginoria, Haitia* (Lythraceae) (3/25-3/26).

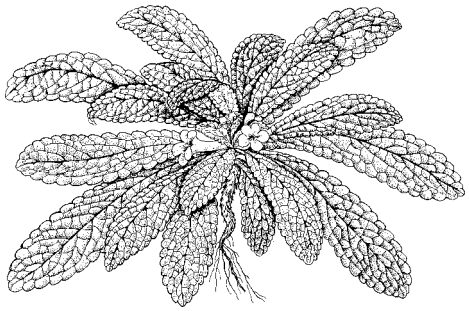
Gerald Stinger Guala, National Science Foundation Biological Databases and Informatics Program and Assembling the Tree of Life Program; Zimbabwe identifications (3/25).

Kentaro Shimizu, North Carolina State University; *Arabidopsis, Cardamine* (Brassicaceae) (3/26).

Gordon Cragg, National Institute of Health, National Cancer Institute; NCI voucher inspection (3/29).

Tran Ngoc Ninh, Institute of Ecology and Biological Resources; NCI voucher inspection (Vietnam) (3/29).

Doel Soejarto, University of Illinois at Chicago; NCI voucher inspection (3/29).



Department Acquires Howard Slide Collection

After months of negotiations with the Estate of Dr. Richard A. Howard, former Director of the Arnold Arboretum and Professor of Botany at Harvard University, the U.S. National Herbarium is pleased to report that it has acquired Howard's photographic slide collection. This collection is a record of Howard's botanical exploits around the world, including such places as Hawaii, Southeast Asia and, most importantly, the Caribbean. In his role as Director of the Arnold Arboretum, he had reason to visit many of the world's most important botanical gardens and arboreta and these he recorded with photographs.

Although he spent much time addressing administration and research, he was ultimately a teacher and many of the slides in the collection were used in both academic and public lectures over the years. Some of these lectures, including the public favorite "A Botanist in Your Grocery Store" are still poised in their respective carousels. Many of his photographs document plant uses, anatomy, morphology, and anthropogenic effects.

It is anticipated that these images will be quite useful to a wide variety of projects and interests in the Department, indeed numerous requests have already been made. The task of organizing, databasing and scanning these image resources has already begun and more than 1,500 of these will be available later this summer when the Department launches the public web application, PIC-Online. Anyone with an interest in these slides should contact Rusty Russell <russell.rusty@nmnh.si.edu>.

Richard Howard's slide collection includes images such as *Pleomele aurea* from Hawaii.

Wilkes Birthday Festival Celebrated at Garden

The United States Botanic Garden (USBG) celebrated the 206th birthday of Admiral Charles Wilkes on 3 April in an event co-sponsored by the Department. The event celebrated Wilkes exploration of the South China Sea by a presentation of lectures, a meet-and-greet with "Admiral Wilkes," and display of the important role that Wilkes played in the early creation of the USBG and the Smithsonian Institution. Two type specimens from the U.S. National Herbarium were selected for exhibit, selected from the U.S. South Pacific Exploring Expedition under the command of Captain Wilkes, U.S.N., 1838-42, collected in the Philippines.

Two lectures were presented at USBG to celebrate the festival. On 2 April, **W. John Kress** shared stories of his explorations of plant research in Southeast Asia with the lecture "Exploring the New Plants in Southeast Asia: From Wilkes to the 21st Century." He spoke about current efforts in Myanmar to promote botanical sciences. On 3 April, **Rusty Russell** presented "The Plants of the U.S. Exploring Expedition Under the Command of Capt. Wilkes, 1838-1842," in which he spoke about the many plants that were collected, pressed, and taken back to the United States for study. Russell described the role that these plants play at the U.S. National Herbarium and the current efforts to preserve these specimens for the future.

Age of Botanical Discovery Captured in Rare and Exclusive Books

In the age of discovery, man's enthusiasm for the environment, art and health was feverishly unleashed among the pages of the first botanical books. The quest of these early botanical explorers, through their writings, was to discover practical ideas and resources for the journey through life.

This spring through fall, the United States Botanic Garden (USBG) and the Chicago Botanic Garden share with visitors the journeys of early European and American writer-scholars through "Plants in Print: The Age of Botanical Discovery" on exhibit in Washington, from 1 April through 15 July, and in Chicago from 18 September through 7 November.

On display will be the remarkably diverse paths of Theophrastus, Carolus Clusius and Francois Andre Michaux; the botanical discoveries that led to the development of a common "plant language" still spoken today; the books that sparked the use of plants in modern medicine; the adventures of botanists and businessmen as they set out from Europe to explore distant lands and their flora. The exhibit features 34 historic books from the rare book collection of the Library of the Chicago Botanic Garden, each selected for exhibition because of its significance in the history of botany and horticulture.

The oldest book in the exhibit – published in Treviso, Italy in 1483 – is "Historia plantarum" by Theophrastus, an ancient Greek philosopher who is today thought of as the father of botany. The volume is one of the first botanical books created with the new technology of the 15th century – the printing press.

"There is magic in these books, a direct connection to the past that ignites the imagination. Our aim is to bring them to a nationwide audience and to underscore that, as in the past, the future of human society is inexorably linked to plants," says Christine Flanagan, manager of public programs at USBG.

An historic collection of rare books is especially valuable to researchers studying the evolution of plants, as well as their cultural importance. Those interested in the development of botanical illustration and the history of landscape design also will find these rare books fascinating. "Plants in Print" takes visitors on a visual journey through four stages: Early Botanical Books, A Common Language for Discovery, Exploring the World, and Discovering America's Plants.

The botanical art featured in "Plants in Print" includes a woodcut illustration that provides a 17th century, European botanist's view of the Garden of Eden ("Paradisi in sole paradisus terrestris" by John Parkinson, 1567-1650); a copper-plate engraving showing Vernicia cordata or Japanese tung oil tree ("Flora Japonica" by Carl Peter Thunberg, 1743-1828); and three, vibrant hand-colored volumes of "The orchid album" (Robert Warner, 1811-1888). As part of a series of 11 volumes, this work set the standard for orchid description and illustration.

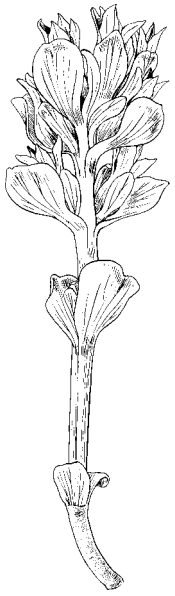
Three Botanists Selected for the 2004 Research Training Program

Three undergraduate students who have been selected to join the Research Training Program (RTP) Class of 2004 will be conducting research in the Department this summer. From an applicant pool of 215, the names of 19 students were selected for the 2004 RTP. The three students in Botany are Xavier Haro, Emily Moran, and Gabriela Salazar.

Xavier Haro is currently a senior at Pontifical Catholic University of Ecuador (PUCE) in Quito, Ecuador, where he is majoring in Botany. He plans to attend graduate school pursuing botanical studies and conservation biology. This summer, he will be working with **Harold Robinson** on the project "Investigation of Two Species of Plants in the Family Asteraceae from Brazil." Haro will assess differences and similarities in two unidentified Vernonieae species and prepare any needed descriptions.

Emily Moran is currently a junior at the University of Michigan in Ann Arbor, Michigan, where she is majoring in Biology with a focus in ecology, evolutionary biology, and botany. She plans to attend graduate school with focused study in botany, particularly plant ecology or the interaction of plants with animals, fungi, and microbes. Working with **Vicki Funk**, her project is titled "A Morphological Characterization of the Genera of the Plant Tribe Liabeae (Compositae)." Moran will learn the basics of data gathering for morphology characters and will use the latest programs for analyzing those data.

Gabriela Salazar is currently a freshman at Cornell University in Ithaca, New York, where she is majoring in Plant Science. She plans to attend graduate school with focused study in Plant Science. She will be working with **Robert Faden** on the project, "*Commelina imberbis* and *Commelina mascarenica*: How Can We Tell Them Apart?" Using primarily herbarium specimens borrowed from the East African Herbarium, National Museums of Kenya, Nairobi, supplemented by other materials, such as living plants of both species growing in the Botany Research Greenhouse, Salazar will be looking for characters that can be used to identify these two species.

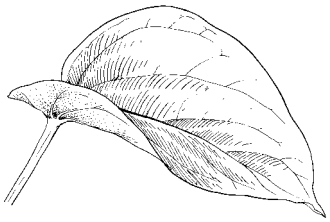


Botanical Symposium Workshop Results in Three Papers

Three papers that appear in the latest issue of *Taxon* are a direct result of a workshop on Linnaean nomenclature that was organized as a follow-up to the first Smithsonian Botanical Symposium, held in 2001 at the National Museum of Natural History (see Publications on page 11). The Symposium, "Linnaean Taxonomy in the 21st Century," focused on the relevance of Linnaean binomials and hierarchical ranks in the light of recent advances in phylogenetic systematics. The symposium was attended by 190 scientists from around the world. Following the symposium a workshop was held 26–28 June 2002, at the Hunt Institute in Pittsburgh, Pennsylvania, which was developed to discuss the integration of phylogenetic information into the current systems of naming plants. A group of 15 taxonomists, including co-moderator **W. John Kress** and participants **Paula DePriest**, **Vicki Funk**, and **Dan Nicolson**, were either invited or selected to attend based on their response to an announcement about the planned workshop.

The first paper (Barkley *et al.*; 53: 153-158) represents a distillation of the discussions and conclusions reached at the workshop. The central problems of the current codes revolve around the concepts of circumscribing taxa, hierarchical ranking, and the use of binomials. The paper identifies the four goals that were used to help focus the discussion during the workshop. The overall conclusion was that Linnaean nomenclature is very flexible, but the authors recognize the need for a manual to guide users. A summary and conclusion in the paper identifies seven major points, such as the fact that the Linnaean system of nomenclature continues to serve well, modifications to the existing system are necessary, misconceptions are prevalent as embodied in the codes of nomenclature, and the *PhyloCode* is unnecessary in order to accommodate phylogenetic principles in classification.

The second paper (Barkley *et al.*; 53: 159-161) addresses the specific articles of the *International Code of Botanical Nomenclature* deemed potentially problematic in relation to phylogenetic classification. The third paper (Moore *et al.*; 53: 214) makes three formal proposals to modify the language of the current *Code*, which will be voted on in July of 2005, at the XVII International Botanical Congress in Vienna, Austria.



Smithsonian Botanical Symposium

6-8 May 2004
National Museum of Natural History

"Botanical Progress, Horticultural Innovations, and Cultural Changes"

In collaboration with Dumbarton Oaks and the United States Botanic Garden, Washington, DC

Lindenbaum by David Kyber, in Hieronymus Bock, *Kreutterbuch*, 1587 [Courtesy of the Smithsonian Institution Libraries, Joseph F. Cullman 3rd Library of Natural History]

How did major developments in botany and horticulture impact gardens, gardening, landscaping, agriculture, and science? How did botany and horticulture contribute to larger changes in social and cultural practices? To examine the potential impact of scientific and cultural practices on the fields of botany and horticulture, presentations at this symposium will offer broad perspectives that relate large botanical and horticultural customs to the cultural, social, economic, and political context throughout history. Major changes in plant introductions, techniques of cultivation, breeding practices, and the naturalization of exotics as they relate to important changes in society will be explored.

The Symposium will begin with the analysis of a number of situations taken in varied historical and geographical domains of culture and proceed to the present. Through invited presentations and a contributed poster session this symposium will explore the social and political conditions under which horticulture and botany gave added cultural significance to nature.

Attendees will be able to register for the Dumbarton Oaks sessions (May 6-7), the Smithsonian session (May 8), or both.

Information and registration at: http://persoon.si.edu/sbs/
Fax: 202-786-2563 – e-mail: sbs@nmnh.si.edu

Information Management

Continued from page 1

possible.

The activities of the IM group revolve around the overseeing and maintenance of the U.S. Herbarium specimen catalog; the migration of pre-existing data to the new Electronic Museum (EMu) system of inventorying under adoption by the National Museum of Natural History (NMNH); support of the development of research databases originating with curators and other personnel; and, the development and maintenance of applications and presentations on the Botany Intranet and Internet, while maintaining the two Web servers needed for those things.

Let us now proceed to clarify the terms *Intra*net and *Inter*net. The Botany *Intra*net is designed only for the *internal* use and information of the Smithsonian Institution staff, its purpose being to provide access to information and be an interface for Web applications that build and maintain databases for Department functions. It also provides links to other Smithsonian Intranet sites. Some examples of things on the *Intra*net are the Botanical Art Catalog, and interfaces that allow the staff to maintain their publications database, to periodically enter their budget requests, and to provide links to shared resources and commonly used sites.

Conversely, the Botany *Inter*net is for the *public*, and it also has many links the same as on the Intranet. Botany Internet's purposes include service to the research community by publishing research products; promotion of research programs; support of collaborative programs involving participants at other institutions (e.g., Myanmar (Burma) exploration and checklist; Zingiberales group research; and Pacific Botany). This Web interface also provides the Smithsonian staff with an easy way to access and update their own research databases, such as those of John Kress on the Myanmar flora, Laurence Dorr on Venezuelan national parks, and Paula DePriest on electronic databases of lichen names in the Parmeliaceae and Cladoniaceae available from the U.S. Herbarium.

This all-encompassing Internet Botany Web site, which the public can visit at <http://www.nmnh.si.edu/botany/>, is the forum for presentation of the US Type Specimen Inventory data and images and other selected specimen databases; for many staff research presentations and publications including a highly useful database of staff publications; the illustrated staff profile pages often surfed by prospective volunteers and interns among others; serves as the home of the Annual Smithsonian Botanical Symposium Web site; and is a portal page for important botanical references and resources of all kinds.

You might want to start your adventure on the Internet Page by selecting the helpful *Site Index* link. From it will pour the enormous wealth of data available from the Department to the public. Too numerous to mention in their entirety, the elements of information are arranged under general titles of broad categories exemplified by: the Algae Home Page; Biological Conservation Newsletter; Botanical Images; Centers of Plant Diversity; Collections – U.S. National Herbarium; DC Flora Home Page; Forster Collections; Gesneriaceae Annotated Bibliography; Grass Home Page; Biological Diversity of the Guianas Home Page; Hawaii; Identification of Harmful Marine Dinoflagellates; Marquesas Flora; Molecular Systematics; Myanmar Research; Plant Conservation Unit; and, Zingiberales.

In order to flesh out a sketch of the "division of labor" among the IM group, it may be noted that, for example, Farr gives much computing support for curators' research work; does much Web site development for not only Web publishing, but also creation of Web applications enabling collaboration on shared research data; and, she builds and maintains the famous on-line index of generic names of plants known as *Index Nominum Genericorum*. Tuccinardi, the Department's Data Manager, standardizes and monitors the quality of data in the Collections Inventory (Catalog), as well as designing and programming of MicroSoft Access applications supporting the collections catalog and management functions; he also is the prime mover for the data migration experience. The specimen inventory of the entire U.S. National Herbarium (4.7 million) is currently about 13 percent complete. The Type register is essentially complete although newly published names provide a steady supply of type records and older type specimens are constantly being found in the general collections.

Tuccinardi's work on the general inventory of all holdings in the National Herbarium has already yielded the conversion of 700,000 records from the general inventory into our new EMu system. MicroSoft's Access and Infodata's INQUIRE are the predecessors of EMu. He still has 100,000 to 200,000 records of databased specimens left to migrate from our original database system into EMu. He also routinely receives many requests for data from outside the Institution, for which printable records are sent by e-mail, or by CD as necessary.

Haug works on data maintenance and standardization for the general collection specimens, and catalog building (updating), including user access, training and support. Boggan authenticates type specimens in the U.S. National Herbarium, and helps to build and maintain the Botanical Type Specimen Register. Stone Orli works on Web site development and maintenance. She is the functional Webmaster, while maintaining the links and rendering some support for the specimen data catalog, especially with the project developed by Stanwyn Shetler and herself on the Flora of the District of Columbia. All members of the IM team are inured to the daily barrage of computer questions directed to them by the staff, which often results in staff members having to learn new applications in order to understand the dimensionality of the demands being placed on the team to obtain the desired streamlined results.

Among the various large computerized projects intended for the future is a searchable databased World Checklist of the Gesneriaceae (the African violet family) by Boggan with Stone Orli and Skog. Kress and colleagues are planning a major upgrade to the current Zingiberales Research section. Lichen research conducted by DePriest will be featured in a checklist of names in the Cladoniaceae, a presentation of lichens of Turkmenistan, and a site portraying her work on the lichens of Mongolia to be accompanied by a video. Other Web sites under development with a geographical focus include Warren Wagner's presentation on

the flora of Hawaii and Dorr's research on a national park in Venezuela and his other work in the Venezuelan Andes.

In late 2003 and early 2004, the whole IM group pitched in to replace obsolete equipment by installing 62 new Dell computers for the Department staff. If you happen to know how to take apart a computer hard drive and put it back together again, you just might qualify for this exclusive team.

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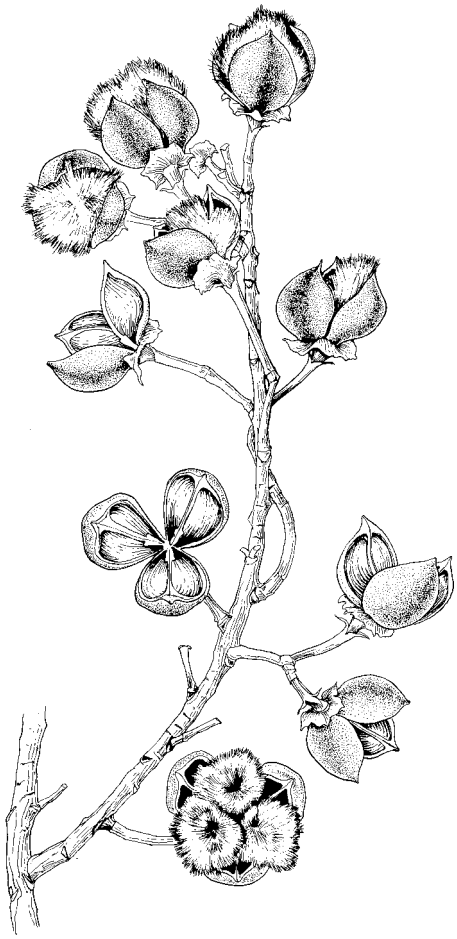

Art by Alice Tangerini

Cornus L.

Springtime in Washington usually means one of two things: cherry blossoms or the flowering of dogwoods. A new species of *Cornus* was recently named for the late Richard H. Eyde (1928-1990), former curator in the Department (see page 5). In 1987, Tangerini drew this image for Eyde's publication on splitting and lumping subgroups within *Cornus* (*Systematic Botany* 12: 505-518). The four main kinds of cornels displayed are: (A) *Cornus mas* (cornelian cherry), (B) *C. sanguinea* (a bractless dogwood), (C) *C. suecica* (a dwarf cornel), and (D) *C. florida* (a big-bracted dogwood).

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