

The Plant Press



Smithsonian
National Museum of Natural History

Special Symposium Issue - see page 9

New Series - Vol. 7 - No. 3

July-September 2004

Botany Profile

Flowers: Provocative Agents of Cultural Change

By Robert DeFilipps[†]

At one point John Kress, the Chair of Botany, felt compelled to remind speakers that the Smithsonian is a non-partisan organization. A few lecturers had given the audience a personal opinion about the politics involved in official United States reactions to world biodiversity treaties. But the incident was just a fleeting ray in the constellation of ideas exchanged at the Fourth Annual Smithsonian Botanical Symposium, held May 6-8 in Washington, DC.

A contingent of botanists, horticulturists, garden historians and landscape designers met under the aegis of the Smithsonian Institution, in collaboration with Dumbarton Oaks and the United States Botanic Garden, to hear and question the experts on the broad topic of "Botanical Progress, Horticultural Innovations, and Cultural Changes." Laid out in advance were the concepts to be devoured by the attendees, such as: "How did major developments in botany and horticulture impact gardens, gardening, landscaping, agriculture, and science?", and "How did botany and horticulture contribute to larger changes in social and cultural practices?" The spatiotemporal context of those questions was easy to grasp: the entire history of the known world.

The lectures of the first two days were held at Dumbarton Oaks, a 19th century mansion in Georgetown, tastefully furnished in classical and medieval style, surrounded by 10 acres of impeccably kept lawns and gardens. To the uninitiated, its quiet, almost reverential,

atmosphere is reminiscent of a monastic retreat. The Welcome and Introduction to the Symposium was provided by Michel Conan, Director of Garden and Landscape Studies at Dumbarton. From Conan's remarks could be sensed the first inkling, by unwary botanists, that many researchers of gardens and landscapes are so deeply immersed in the classical literature, that they employ vocabularies replete with ethereal imagery and figurative allegory in order to praise the beauty, fragrance, contours and alluring desirability of plants. This form of sincere admiration is virtually never expressed in the field of taxonomic botany.

The Dumbarton lectures thus took "the language of flowers" to the limit, and were pleasantly peppered throughout with French, Arabic or other "foreign" phrases, reflecting a patrimony of investigation going back to ancient Europe, Africa and Asia. The aspirations of the Dumbarton garden lecturers are clearly beyond the realm of mulch, cow manure, weed-whips, and personal tractors. The third day of activities was held in Baird Auditorium of the National Museum of Natural History, Smithsonian Institution.

Sydney H. Aufrère (Université Paul Valéry, Montpellier, France) led the list of first-day speakers, and lectured on "The Vegetable Universe of Ancient Egypt, its Symbiosis and Religious Reinterpretation." The ancient Egyptians were a very religious people, in a land where the Nile

River is reborn in flooding every year, and their culture seemed to be a symbiosis engineered by the Egyptian deities, including pleasure gardens that were a universe fulfilling the wishes of the people. The ancient Egyptian sacred

tree reservations provided a contact with the divine, and included *Balanites* (Zy-

gophyllaceae), 3 species of *Acacia*, and the branching doum palm (*Hyphaene*); the trees grew on sacred mounds, for example at the catacomb of Osiris at Karnak.

Maria Subtelny (University of Toronto, Canada) presented a lecture on "Visionary Rose: Metaphorical Application of Horticultural Practice in Persian Culture," demonstrating a connection between medieval Persian garden culture and Perso-Islamic Mysticism. In Persia (present-day Iran) of the 13th century, the highly prized rose varieties included the eglantine, dog, red, 5-petaled, bi-colored, and musk roses; additionally, the most popular at the time was the cabbage rose (*Rosa centifolia*). *Rosa damascena*, the damask rose, was the source for making rosewater in Shiraz, Persia, which was exported to Syria, India, Egypt and then north to Europe. Rosewater was locally used in medieval Persia as a scent applied before handling the Koran. Roses in those days were grown for their scent, truly an example of, in



Smithsonian
Botanical Symposium

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Travel

Warren Wagner traveled to Kaua'i, Hawai'i (3/30 – 4/4) to participate in a strategic directions workshop at the National Tropical Botanical Garden.

Alain Touwaide traveled to Manhattan, New York (4/1 – 4/4) to attend the annual meeting of the Renaissance Society of America and to deliver a talk at the New York Academy of Medicine; to Canterbury, United Kingdom (6/12 – 6/17) to attend the International Conference on Ethnoscience, jointly organized by the International Society of Ethnoscience and the Society for Economic Botany, at the University of Kent; to New Haven, Connecticut (4/15 – 4/17) to deliver a paper at the conference "The Art of Medicine: Image-making and Communication" at Yale University; and to Rome, Italy (6/20 – 7/21) to conduct research.

Dan Nicolson traveled to Bronx, New York (4/1 – 4/4; 5/12 – 5/15; 6/22 – 6/23) to conduct research at the New York Botanical Garden.

Walter Adey traveled to Bar Harbor, Maine (4/15 – 4/19) to conduct research.

Vicki Funk traveled to Barcelona, Spain (4/15 – 4/19) to attend the Interna-

tional Botanical Garden Conference and an organizational meeting for the Program Committee of the International Compositae Alliance; to the Mohave Desert, California (4/21 – 4/27), with her South African colleague, Marinda Koekemoer, to examine the spring bloom; to Las Vegas, Nevada (5/6 – 5/9; 6/4 – 6/7) to collect Asteraceae; to Oklahoma City, Oklahoma (5/30 – 6/2) for an NSF Workshop; to Death Valley, California (6/4 – 6/7) with **Carol Kelloff** and Emily Moran to look for *Hecastocleis*; and to Fort Collins, Colorado (6/27 – 7/1) to present a paper at "Evolution 2004," the annual meeting of the Society for the Study of Evolution and the Society of Systematic Biologists at Colorado State University.

Elizabeth Zimmer traveled to Atlanta, Georgia (4/15 – 4/18) to serve as a judge in a national science competition; to University Park, Pennsylvania (6/17 – 6/20) to attend the Society for Molecular Biology and Evolution conference on "Genomes and Evolution" at the Pennsylvania State University; and to Fort Collins, Colorado (6/26 – 7/1) to attend "Evolution 2004."

Robert Faden traveled to Khon Kaen,

Thailand (4/18 – 5/2) to conduct ongoing research and for the doctoral defense of Thaweesak Thitimetharoch at Khon Kaen University.

Pedro Acevedo traveled to Puerto Rico (4/19 – 4/26) and the Dominican Republic (5/17 – 6/3) to conduct field work.

Laurence Skog traveled to Sarasota, Florida (4/25 – 5/4) to conduct research at the Selby Botanical Gardens.

Rusty Russell traveled to Redlands, California (4/29 – 4/30) to facilitate the workshop, "Accessing Historic Collections with GIS for Effective Land Management and Stewardship."

Maria Faust traveled to Belize City, Belize (5/5 – 5/20) to conduct ongoing research on dinoflagellate algae.

Linda Hollenberg and **Deborah Bell** traveled to Manhattan, New York (5/11 – 5/16) to attend the annual meeting of the Society for the Preservation of Natural History Collections (SPNHC) at the American Museum of Natural History.

W. John Kress traveled to the Lesser Antilles (5/13 – 6/5) to conduct research; and to Kunming and Beijing, China (6/19 – 6/30) to attend a Flora of China editorial board meeting and to conduct research.

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Visitors

Teodardo Calles, North Carolina State University; Venezuelan *Stylosanthes* (Fabaceae) (4/5-4/8).

Ching-I Peng, Academia Sinica, Institute of Botany; Asian *Begonia* (4/5-4/8).

David Spooner, University of Wisconsin, Herbarium; Central American *Solanum* sect. *Petota* (Solanaceae) (4/5).

Mohammad Fayyaz, Director, University of Wisconsin Botany Greenhouses and Botanical Garden (4/6).

Jerry Saltzman, Independent researcher; Volunteer interview (4/6).

Heather York, University of Kansas; *Vitex rotundifolia* (Verbenaceae) (4/7-4/9).

David Werier, Cornell University consultant; *Carex* (Cyperaceae) (4/9-4/12).

Marc Johnson, University of Toronto; Plant-arthropod interactions (4/20-4/23).

Margarita Gospodinova, Independent researcher; Volunteer interview (4/23).

Melissa Luckow, Cornell University; Mimosoid Legumes (4/23-4/29).

Michael Sundue, New York Botanical Garden; *Adiantum* (Adiantaceae) (4/26).

Charles Zartman, Duke University; Epiphyllous bryophytes at the Biological Dynamics of Forest Fragmentation Project, Manaus, Brazil (4/27).

Marinda Koekemoer, National Botanical Institute of South Africa; Southern African Asteraceae (tribe Gnaphalieae) (4/28).

Bruce Bennett, NatureServe; Plants of the Yukon Territory (5/3-5/5).

Karen Wilson, National Herbarium of New South Wales; South American Cyperaceae (5/3-5/7).

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Nature's Diversity: From Immense and Infinite to Finite and Threatened

At the start of the great age of exploration by European naturalists in the 18th and 19th centuries, Nature seemed mysterious, immense, and infinite. Expeditions to explore uncharted regions of the world were sent out by governments, monarchies, and wealthy patrons to survey and acquire new lands, to bring back new plant products, such as spices and medicines, and to collect natural history specimens for newly established national museums as well as private collections. Most of the preserved and living specimens of plants that were brought back from Africa, South America, and Asia to museums and botanic gardens by such explorers as Alexander von Humboldt, James Cook, Charles Darwin, and Charles Wilkes, to name only a few, were new to science. Discovery and description of biodiversity proceeded at a pace as if the natural world was limitless, enduring, and permanent. Botanists at botanic gardens, at natural history museums, and at universities advanced at a frenzied pace in describing new species of plants, especially from the tropical regions of the world. The great age of exploration starting in the 18th century resulted in an explosion of discovery and documentation of biodiversity in the 19th and early 20th centuries.

The tremendous influx of new species being described required an overhaul of the earlier classification system of Linnaeus in the 1700s and major new classification systems for plants were proposed to incorporate the new discoveries first by the French botanist de Jussieu (1789), followed by the British taxonomists Bentham and Hooker (1862-1883), and later the Germans Engler and Prantl (1887-1915). Yet at the beginning of the 20th century a different set of biologists were occupied with Darwin's theory of evolution through natural selection and the developing field of genetics. In the 1940s and 1950s a significant decrease took place in the description of new species of plants, perhaps as a result of the international effects of World War II. This decrease of new discoveries was coupled with an increase in the reanalysis of the taxonomic hierarchy and relationships of taxa to reflect new ideas on the nature of species. The intense interest by evolutionary biologists, such as Ernst Mayr and George Ledyard Stebbins, in understanding how species are related to each other, i.e., phylogenetics, has persisted to the present day.

At the same time that taxonomists and evolutionists were trying to understand the evolution and classification of plants, ecologists and environmentalists were beginning to assess the relationship of people to natural habitats. Aldo Leopold and others in the 1940s were early advocates who clearly saw the threat of unbridled human expansion to natural environments and the species that inhabited them. It was not until the 1970s that a significant realization was made by most

biologists, ecologists and taxonomists that the natural world was under threat and in trouble. In the last three decades of the 20th century the urgent need to understand and protect the Earth's habitats and organisms has resulted in an explosion of new academic programs aimed at studying the environment, professional societies, and local activist groups to unite scientists and citizens in taking action, and even legislation to turn concern for the environment into law. It has become clear to biologists, conservationists, and a significant segment of the general public that a major extinction of plants, animals, and microorganisms caused by human activities is not only possible but probable unless immediate action is taken.

New international laws regulating the use of Nature and biodiversity coupled with increased species extinction has significantly changed the way that modern-day plant explorers and taxonomists pursue their activities. As habitat destruction accelerates, the pace of discovery, identification, and description of new species of plants has also speeded up. The number of newly described species of plants significantly increased in the 1980s and 1990s over the previous four decades. Unlike the predominant perceptions of the 17th and 18th centuries that Nature and species were infinite and limitless, we now know this is not true. Estimates of the number of plant species currently present on Earth range from 220,000 to over 420,000. By extrapolation from what we have already described and what we estimate to be present it is possible that at least 10 percent of all vascular plants are still to be discovered and described (W. J. Kress and E. Farr, unpubl.). This number suggests that a considerable amount of work still needs to be done by botanists to find them, but the job is not without end.

The application of advanced technology to the field of taxonomy is leading to the development of novel tools with the potential to transform current methods of plant collecting. Applications, such as image recognition software for use in electronic field guides and on-the-spot rapid DNA sequencing, termed DNA barcoding, for species identification, are on the taxonomists' drawing board. These technological dreams are now being converted into reality by designing new plant explorers of the future. The documentation of the remaining species of plants with the aid of these new tools will provide a solid basis for the precise identification of the species-rich areas of the world for immediate assessment, conservation, and protection. The social, economic, political, and technological changes of the last few decades have ushered in the final age of plant exploration and conservation in the 21st century. We predict that the last new species of plants on the Earth

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Chair

With

A

View

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W.

**John
Kress**



Staff Research & Activities

Robert Faden traveled to Thailand (18 April to 2 May) for the Ph.D. defense of Thaweesak Thitimetharoch at Khon Kaen University in northeastern Thailand. Thitimetharoch had spent five months at the Smithsonian in 2002 doing part of his dissertation research. His thesis was entitled "Taxonomic studies of the family Commelinaceae in Thailand," which he successfully defended on 28 April. While in Thailand Faden discussed the possibility of doing field work in connection with a floristic treatment of Commelinaceae for the Flora of Thailand. He was encouraged by these discussions. It was an excellent season for fruits, and the markets were full of durian, mangosteen, rambutan and many other lesser known ones. The three most commonly served fruits in hotels are pineapple, papaya and watermelon.

W. John Kress presented a lecture to the New Scotland Garden Club in Georgetown on 13 April entitled "Plants, Culture, and Religion in the Golden Land of Burma."

On 9 April, **Dan Nicolson** presented his lecture "Collecting Aroids in Southeast Asia Over 40 Years Ago" at the United States Botanic Garden. With an illustrated slide program, Nicolson spoke about his experiences and research in studying the plants of Southeast Asia.

Nicolson's work on the *Taxonomic Literature* edition 2 (TL-2) text (concerning authors beginning with F and G) turned up an unexpected surprise about a place in recent news. While trying to track down the dates and full name of Evan Rhuvon Guest (1902-1992), author of an incomplete Flora of Iraq, Nicolson came across an IAPT questionnaire for specialists in the taxonomy of plants that was filled out by Guest in 1956. Guest was then in the Ministry of Agriculture at the Abu Ghraib Experiment Station, about 20 miles west of Baghdad. This suburb is now infamous for a prison that must have been constructed after Guest left Iraq for Kew in 1958.

Paul Peterson traveled to central and southern Peru (18 March to 28 April) to collect Andean grasses. Asuncion Cano Echevarria, Maria Isabel La Torre, and Irayda Salinas Hajar all from Museo Historia Natural, San Marcos (USM), and Nancy Refulio Rodriguez from Rancho Santa Ana Botanic Garden (RSA) traveled with Peterson to remote locations in Departments Ancash, Arequipa, Ayacucho, Huancavelica, Moquegua, Pasco, and Puno. Four hundred seventy-five numbers of grasses were gathered and it appears that at least two collections of *Bromus* are undescribed. One of these new species of *Bromus* was first elucidated by Jeffrey Saarela, a PhD student at the University of British Columbia and former Research Training Program intern, who is investigating the molecular phylogenetics of the genus. *Tovarochloa peruviana*, a diminutive annual with culms 0.5-2 cm tall, was relocated after not having been collected for over 45 years.

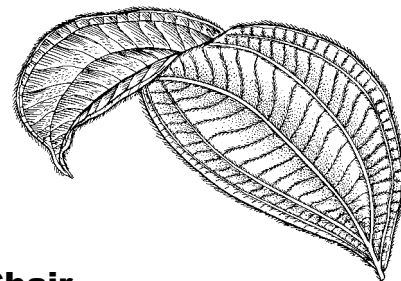
Stanwyn Shetler and his wife, Elaine, were among 70 participants in the annual Joint Botanical Field Meeting (JBFM) of the Northeastern Section of the Botanical Society of America, Torrey Botanical Society, and Philadelphia Botanical Society, held this year on the Bruce Peninsula of Ontario, Canada, 12-17 June. The JBFM was first held on the Bruce in 1995 in a meeting organized by former Botany curator **Joan Nowicke**. The Shetlers returned to Washington, D.C., by way of Manitoulin Island and Michigan, making a stop, among others, to join a very successful half-day U. S. Fish and Wildlife tour out of Grayling, Michigan, to see the rare Kirtland's warbler.

Laurence Skog has been appointed to a 3-year term as Research Associate at the Marie Selby Botanical Garden in Sarasota, Florida. Skog has been traveling to Selby Gardens about every other month since retiring last October to work in the collections at Selby and to work with them in developing a Gesneriad Identification Center similar to the Orchid Identification Center and the Bromeliad Identification Center already established for many years at Selby. Selby Gardens recently obtained the herbarium collections of Gesneriaceae from the Gesneriad Research Foundation (GRF), and Skog has been working with Selby to identify specimens

in preparation for the GRF collections being inserted into the Selby herbarium.

On 11 May, **Alain Touwaide** presented a talk "Plants and Men in Antiquity" on the occasion of the annual dinner of the Washington Academy of Sciences. Touwaide's lecture was a synthesis of the research he has been conducting for more than thirty years on the history of plants and their uses in the cultures of the Mediterranean world from Antiquity to the Renaissance. It included a discussion on the sources on ancient botany, his research methods, and some highlights from his results. Touwaide also presented a lecture at the United States Botanic Garden on "Botanical Books from Classical Antiquity" on 20 May. The lecture was presented in conjunction with the opening of the USBG exhibit *Plants in Print: The Age of Botanical Discovery*.

Elizabeth Zimmer attended the Society for Molecular Biology and Evolution conference on "Genomes and Evolution" from 17-20 June, at the Pennsylvania State University. Zimmer also attended "Evolution 2004" the annual meeting of the Society for the Study of Evolution and the Society of Systematic Biologists, at Colorado State University, from 26 June to 1 July. While there, she co-hosted a session on Undergraduate Mentoring in Environmental Biology with Scott Edwards of Harvard University.



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may well be discovered and described before the middle of the current century. Natural history museums will continue to play a central role in both the documentation and the conservation of biodiversity.

[note: This essay was adapted from the concluding chapter of "Plant Conservation: A Natural History Approach" edited by G. A. Krupnick and W. J. Kress being published by the University of Chicago Press]

Awards & Grants

On 18 May, **Pedro Acevedo** received the 2003 NMNH Science Achievement Award. His two papers, "Meliococceae (Sapindaceae): *Melicococcus* and *Talisia*" (*Flora Neotropica*, Monograph 87; 2003) and "Bejucos y Plantas Trepadoras de Puerto Rico e Islas Virgenes" (Smithsonian Institution; 2003), were recognized as outstanding taxonomic reviews, the latter volume being geared toward both professional botanists and beginners. The award was established to recognize the five most important scientific publications during the previous year and was selected by a committee from nominations submitted through the scientific departments of the museum.

Maria Faust will be receiving the Phycological Society of America's Award of Excellence at the 58th annual meeting of the Phycological Society of America (PSA), to be held August 7-12, 2004 in Williamsburg, Virginia. The PSA Award of Excellence has been established to recognize phycologists who have demonstrated sustained scholarly contributions and impact on the field of Phycology over their careers. These individuals have also provided service to PSA as well as other Phycological societies.

Alain Touwaide, Botany research associate, has received a \$100,000 grant from the Earthwatch Institute for his project entitled "Medicinal Plants of Antiquity." This project consists of analyzing early printed herbals from 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. From 20 June to 21 July and from 20 September to 26 October, 50 Earthwatch volunteers from all over the world will work with him at the National Library of Rome, compiling a comprehensive database of ancient therapeutic practices from rare books. They will also conduct archeological work in search for plant representations and remains at the archeological site of Ostia Antica, the ancient harbor of Rome.

Smithsonian Initiates Center for Botanical Art and Illustration

On 14 April, the Department and the Director's Office hosted a dinner for a number of museum staff and outside guests to discuss the establishment of a "Smithsonian Center for Botanical Art and Illustration," a new initiative in the Department. The idea for such a center grew out of discussions between **John Kress**, **Alice Tangerini**, Cristián Samper, Lucy Dorick, and Shirley Sherwood (museum board member and supporter of the Department) over the last few months. The Department maintains a large collection of botanical art work and scientific illustrations that are under the curation of Tangerini. This collection is important for the research of the Department as well as that of other scientists and includes work from the original 1842 Wilkes Expedition up to the present. It is a useful and valuable collection, but it is in great need of more extensive care and curation.

To establish such a center the Department initiated a discussion with its botanical partners at the United States Botanical Garden (USBG), the Corcoran College of Art and Design that teaches classes on botanical art at the USBG, and the National Gallery of Art which provides expertise in the curation of works of art. These discussions culminated in the dinner to launch joint efforts by these organizations to develop and fund this new center. A number of botanical artists also joined in on the dinner discussion.

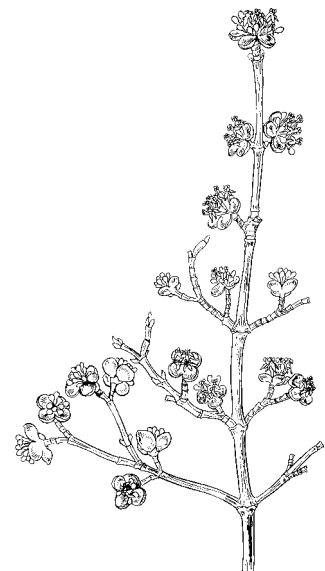
At present the activities of the Center will include the following:

- **The Botanical Art and Illustration Archives.** This new division of the U.S. National Herbarium includes historical volumes, art works, scientific documents, and other objects related to botanical art and scholarship.
- **Smithsonian Endowed Chair in Botanical Art and Illustration.** This curator will advance the field of botanical art, safeguard the archives, and share the richness of these collections with the public and scholars.
- **Smithsonian Botanical Arts Workshop.** This international conference, held at the National Museum of Natural History, brings artists, illustra-

tors and scientists together to share advances in science and encourage artistic growth and collaboration in the field of botanical arts.

- **Smithsonian Award for Excellence in Botanical Art and Illustration.** This award honors and encourages excellence in the field of botanical art and scholarship.
- **Smithsonian Botanical Exploration.** Each year, pioneering work is undertaken by Smithsonian botanists in sites around the world. Researchers discover and document species in Burma, Mongolia, Guyana and other under-explored regions rich in plant life. The Center supports these expeditions, critical to the art inspired by their scientific discoveries, and in some cases, enables artists to accompany and record these research expeditions.
- **Public Learning.** Events, programs and exhibits in Washington, across the nation, and online share the history of botanical art and science as well as recent discoveries from the field.

With this Center the Department has a unique opportunity to move the field of botanical art and illustration forward as well as to properly curate and develop its own holdings. Enthusiasm and excitement was high during the dinner discussion. The next steps are to appoint a core group to further develop a strategy for establishing the center and raising the funds to make it a reality.



The Conservation Column

A fast-growing collective of concerned government agencies, landowners, conservation groups, scientists, and private businesses from across the continent have rallied around the critical issue of pollinator conservation to form the North American Pollinator Protection Campaign (NAPPC). This summer, NAPPC and the United States Botanic Garden (USBG) are co-sponsors of "The Great Pollinator Partnership" which includes an exhibit, demonstration gardens, and educational programs at the Conservatory on Capitol Hill in Washington, D.C.

Gary Krupnick, the NAPPC Smithsonian Institution representative and a recently-elected member of the NAPPC Steering Committee, worked with the USBG exhibit task force to bring *Dancing with Flowers: The Pollination Connection* to the Garden Terrace. Twelve pollination gardens, each devoted to a different theme, demonstrate who visits whom, when, and how. Individual gardens feature plants that attract bats, bees, butterflies, and other pollinator groups. It is designed to help the viewer understand why the future, the global economy, and the survival of fine dining depend on pollinators.

Inside the USBG West Orangerie is an exhibit entitled *Dynamic Duos: Plants and Pollinators*, a photographic journey that invites the public to examine closely the subtle magic that occurs when pollinator meets plant. Created from over 400 entries submitted by world-renowned photographers, these images are a tribute to the bees, butterflies, beetles, birds, bats, flies, wasps, and other species that perform the prodigious and vital work of



A solitary bee (*Melissodes* sp.) fills its hind sacs with sunflower pollen. (Photo by Edward S. Ross)

transferring pollen. The Department of Botany staff at NMNH assisted in identifying the scientific names of several flowers that appear in the photographs. The exhibit and the demonstration gardens run until October 2004.

Comprehensive scientific documentation and assessment of current knowledge on the status of pollinators are essential to understanding pollination issues. Reports of pollinator declines have come from across the country in addition to Europe, Asia, Central and South America, Africa, and Australia. Many vertebrates and an unknown number of invertebrate pollinators are reported to have become extinct in recent decades, with other pollinators threatened with decline. In the future, NAPPC plans to address such subjects as the status of pollinator populations and communities, the threats to their health, and the socio-economic issues that affect pollinators and their beneficiaries.



Visitors

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Tina Brown, Independent researcher; Herbarium visit (5/5).

Melanie Choukas-Bradley, Independent researcher; Herbarium visit (5/5).

Tom Wendt, University of Texas; Piperaceae and Polygalaceae (5/6-5/7).

Frank Axelrod, University of Puerto Rico; Flora of Puerto Rico (5/10-5/13).

George Proctor, Institute of Jamaica, Herbarium; Flora of Cayman Islands (5/10-5/11; 6/28-7/2).

William Vargas, Instituto Alexander von Humboldt; Colombian plants from La Planada (5/17-5/20).

Charles Fenster, University of Maryland; *Campanula rotundifolia* (Campanulaceae) (5/20-5/21).

Johanna Maad, Trondheim University; *Campanula rotundifolia* (Campanulaceae) (5/20-5/21).

Ann Pinzl, Nevada State Museum; Literature research (5/24).

Walter Holmes, Baylor University; Central and South American *Mikania* (Asteraceae) and *Koeberlinia* (Koeber-

liniaceae) (6/1-6/17).

Gary Breckon, University of Puerto Rico, Mayagüez Campus; Floras of Mona, Caja de Muertos and Vieques Islands, Puerto Rico (6/6-6/17).

Ricardo Santiago-Garcia, University of Puerto Rico, Mayagüez Campus; Agustin Stahl watercolors (6/6-6/17).

Leyda Rodriguez, Herbario Nacional de Venezuela, Fundación Instituto Botánico de Venezuela; Flora of Guaramacal, Venezuela (6/7-7/7).

J. Carlos Trejo-Torres, Ciudadanos del Karso, Inc.; Plants of the Northern Karst of Puerto Rico (6/7-6/11).

Michael Mayer, University of San Diego; Brassicaceae (Thelypodieae) (6/8-6/15).

Ross McCauley, Ohio University; Amaranthaceae (6/8-6/9).

Harvey Kupferberg, Independent researcher; Volunteer interview (6/9).

Ed Smithline, Independent researcher; Volunteer interview (6/10).

Duane Zepeda, Independent researcher; Volunteer interview (6/10).

Lynn Clark, Iowa State University; Bamboos (Poaceae) (6/16-6/17).

Anna Kephart, Independent researcher; Volunteer interview (6/17).

Monique Ifill, The Barbados Museum; Collections management training (6/20-7/3).

Randall Scott, Northern Arizona University, Deaver Herbarium; *Brickellia* (Asteraceae) (6/21).

Heather Axen, Cornell College; Tephridid fly/sunflower interaction (6/28-6/30).

Marty Condon, Cornell College; Cucurbitaceae (6/28-6/30).

Jessica Harrison, Cornell College; Tephridid fly/sunflower interaction (6/28-6/30).

Keiko Igawa, Independent researcher; Volunteer interview (6/28).

Peter Jørgensen, Missouri Botanical Garden; Colombian *Passiflora* (6/28-6/29).

Susan Swensen, Ithaca College; Cucurbitaceae (6/28-6/30).

Tree Planted to Commemorate the 100th Anniversary of the Natural History Building Groundbreaking

The Smithsonian Institution commemorated the 100th anniversary of the groundbreaking for the National Museum of Natural History Building with a public ceremony on 15 June, hosted by NMNH Director, Cristián Samper. Special tribute was paid to the memory of Solomon G. Brown, the Smithsonian's first African-American employee. Brown, who was present at the 1904 groundbreaking, was a self-taught natural historian and prolific poet who worked for the Smithsonian for more than 50 years. Smithsonian Anacostia Museum historian Gail Lowe read one of his poems at the ceremony. Smithsonian Under Secretary David Evans and descendants and relatives of Brown also participated in the event, during which a Cedar of Lebanon, a tree species that was removed in 1904 in order to erect the building, was planted on the northwest lawn. Accounts of the anniversary and stories about Brown appeared in newspapers throughout the country.

The new tree planted in front of the Natural History Building is listed in the program as a Cedar of Lebanon (*Cedrus libani*). There is some question as to its correct identity. **Dan Nicolson** and **Robert Faden**, at the request of Botany chair **W. John Kress**, have undertaken a

study of the tree, comparative specimens in the U.S. National Herbarium, and the literature on the genus *Cedrus* and its taxa.

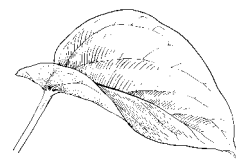
The genus *Cedrus* (cedar, not to be confused with red cedar (*Juniperus virginiana*) or white cedar (*Chamaecyparis thyoides*)) ranges from the Atlas Mountains of North Africa to the foothills of the western Himalayas. Authorities agree that there are five taxa and that one of them, the Deodar or Himalayan Cedar (*Cedrus deodara*), is a distinct species. The other four taxa have been treated as one to three species, but most commonly as two species, the Cedar of Lebanon from the Middle East, Turkey and Cyprus, with three subspecies or varieties, and the Atlas Cedar (*Cedrus atlantica*) from the Atlas Mountains of North Africa.

In the Washington-Baltimore area, all three common species of *Cedrus* are grown. The Deodar with its long leaves and branches that hang down is quite distinctive, and the museum tree does not belong to this species. The characters generally used to separate the remaining two species, the Cedar of Lebanon and Atlas Cedar, are length of the leaves, the hairiness of the young twigs and the size of the female cones. Unfortunately, the

leaf and pubescence characters are difficult to use because the leaf dimensions in the two species broadly overlap and both the Cedar of Lebanon and the Atlas Cedar may have hairy twigs (although those of the Cedar of Lebanon may also lack hairs).

From various keys and descriptions, Nicolson and Faden concluded that the museum tree is an Atlas Cedar, not a Cedar of Lebanon, because of its generally short leaves, hairy twigs and especially the blue color of much of the foliage. The last feature is common in Atlas cedars, but seems to be lacking in the Cedar of Lebanon.

While checking the cone collections of *Cedrus* in the herbarium, Nicolson discovered a collection of *C. libani* made from the Smithsonian grounds in 1896. While the indications are that this newly planted young tree probably is an Atlas Cedar (*C. atlantica*), the identity will not be certain until the tree matures and sets cones.



Travel

Continued from page 2

Mark and Diane Littler traveled to Ft. Pierce and Key West, Florida (5/31 – 7/31) to conduct research.

Paula DePriest, Deborah Bell, and Gregory McKee traveled to Mongolia (5/26 – 6/28) to conduct field work.

Stanwyn Shetler traveled to Ontario, Canada (6/12 – 6/17) to attend the annual Joint Botanical Field Meeting (JBFM) of the Northeastern Section of the Botanical Society of America, Torrey Botanical Society, and Philadelphia Botanical Society.

Ellen Farr and Tom Hollowell traveled to Campinas, Brazil (6/20 – 6/27) to meet with the staff of the Reference Center on Environmental Information (CRIA) about potential collaboration on web-based data presentation and geographic modeling, and to give talks at CRIA and the Herbarium at the Universidade Estadual de Campinas (UEC).



From left: Darryl Brandon Payne and Clara Ellis Payne (descendants of Solomon Brown); Samper, NMNH Director; Evans, SI Under Secretary for Science; Speaking: Lowe, Senior Historian, SI Anacostia Museum and Center for African American History and Culture.

■ ■ Smithsonian Expedition in Mongolia

William Fitzhugh, Bruno Frohlich, **Paula DePriest** and six other Smithsonian Institution specialists participated in a four-week multi-disciplinary expedition in Mongolia in June that produced major accomplishments in outreach, education, science, and humanitarian aid.

Funded by grants from the Trust for Mutual Understanding and the State Department, "Project Deer Stone" began with a week of seminars and workshops that brought together more than sixty Mongolian researchers and museum curators from fifteen institutions in Ulaanbaatar, Mongolia. The conference and workshops—the first museum training ever conducted in Mongolia—were facilitated by the Council of American Overseas Research Centers' (CAORC) new American Center for Mongolian Studies directed by Peter Marsh. The tremendous public response emphasized the urgent need for training Mongolian museum and research specialists in museum curation, conservation, and collection management, as well as in specialized research techniques.

Smithsonian field projects were equally successful, with major accomplishments in archaeology, ethnography, and botany. High-tech surveys of ancient burial mounds and excavations at Neolithic and Bronze Age 'deer stone' sites suggest early Mongolian cultures played important roles in cultural developments in Central Asia between 5,000-2,000 years ago, long before the 13th century empire begun by Genghis Khan. Botanical work resulted in more than 300 samples of newly-documented lichens and vascular plants from one of the least-known regions of northern Mongolia. Ethnographic and geographic studies of the Tsaatan reindeer herders produced new evidence of their remarkable adaptation and their tenacity in maintaining a way of life that originated more than 2,000 years ago, when their ancestors were likely the first people ever to domesticate reindeer.

Perhaps the most exciting moment of the expedition was the expedition team's final meeting with the Tsaatan, who rode out of the mountains for a final 'goodbye' and gift-exchange. The Tsaatan gave the expedition team antler and soapstone carvings and good luck charms; the team gave them knives, clothes, children's toys,



A reindeer of a Tsaatan herder eagerly munches reindeer lichen (*Cladonia arbuscula*) offered by Paula DePriest. (Photo by Deborah Bell)

and photos of the team's 2003 visit. This year each Tsaatan family received 40 meters of new tent canvas and sacks of flour and other provisions provided by the US military and aid programs, through the US Embassy. The translator's Mormon Church in Ulaanbaatar went one step further, donating scores of rubber boots and winter foot-gear, as well as some surprise items—fancy high-heeled ladies' shoes that the Tsaatan immediately dubbed "marrying shoes." Much to the team's surprise, this produced a flurry of excitement as the Tsaatan began to debate who would be the first to try them out into town. Another coup for science: Style ranks, even in remote northern Mongolia.

This year's American participants included William Fitzhugh, Bruno Frohlich, David Hunt, and intern Andrea Neighbors from Anthropology; Paula DePriest, **Deborah Bell**, and **Gregory McKee** from Botany; Paul Rhymer from National Museum of Natural History Exhibits; Carolyn Thome from the Smithsonian's Office of Exhibits Central; and Rae Beaubien from the Smithsonian Center for Materials Research and Education. Mongolian participants included twenty-two students, researchers, drivers, Tsaatan horsemen and guides, and cooks.

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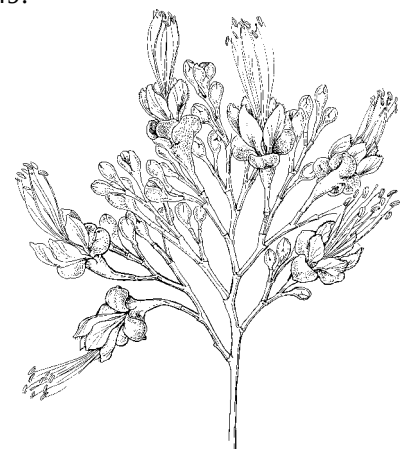
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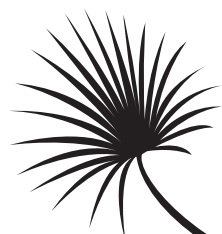
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Smithsonian

Botanical Symposium

David Mabberley Receives Fourth Cuatrecasas Medal

David Mabberley of the University of Leiden, The Netherlands, and the Royal Botanic Gardens, Sydney, received the Cuatrecasas Medal at the 4th Annual Smithsonian Botanical Symposium. The medal is in honor of José Cuatrecasas, a pioneering botanist and taxonomist who spent nearly a half-century working in Botany at the Smithsonian Institution. Cuatrecasas' research, especially in the flowering plant family Asteraceae, was devoted to the classification, biogeography, exploration, and ecology of plants of the paramo and subparamo regions of Andean South America. Out of enduring respect and admiration, the José Cuatrecasas Medal for Excellence in Tropical Botany was established. This medal is presented annually to a botanist

and scholar of international stature who has contributed significantly to advancing the field of tropical botany. The award serves to keep vibrant the accomplishments and memory of this outstanding scientist.

The recipient of the Cuatrecasas Medal is selected by a committee made up of botanists on the staff at the National Museum of Natural History, in consultation with other local plant scientists in the Washington area. This year the Committee was composed of **Laurence Dorr** (Chair), **Pedro Acevedo**, Alan Whittemore, and Pat Herendeen. Nominations for the Medal are accepted from all scientists in Botany at the Museum. The award consists of a bronze medal bearing an image of José Cuatrecasas on the front



David Mabberley (right), recipient of the José Cuatrecasas Medal for Excellence in Tropical Botany, receives his award from W. John Kress. (Photo by Ida Lopez)



Speakers and sponsors (left to right): David Mabberley, Maria Subtelny, Saúl Alcántara Onofre, Susan Toby Evans, Yizhar Hirschfeld, W. John Kress, Daniel Martín Varisco, Holly H. Shimizu, Wybe Kuitert, Michel Conan, Georges Métaillé, Therese O'Malley, Sydney H. Aufrère, Alain Touwaide, Mauro Ambrosoli, and Nurhan Atasoy. (Photo by Ida Lopez)

with the recipient's name and date of presentation on the back.

The selection committee was impressed by the many important contributions that Mabberley has made to tropical botany over his long and distinguished career. These contributions include a revision of the tropical genus *Chisocheton* (Meliaceae) (1979), the book entitled *Tropical Rainforest Ecology* (1983, 1992), a monograph of *Melia* in Asia and the Pacific (1984), numerous articles on pachycaul trees in Africa (and elsewhere), a treatment of Meliaceae for *Flora Malesiana* (1995), and a revision of Malagasy *Grewia* (1999). In addition, while not strictly speaking a contribution to tropical botany, Mabberley's *The Plant-Book* is seen as an invaluable aid to those studying tropical plants.

Profile

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Subtelny's words, "sensory correspondences as they relate to olfactory perceptions."

The scented Persian rose, a king (not queen) of beauty, was often paired with the bulbul (nightingale) bird in paintings, in order to characterize a form of spiritual intoxication called *souk*, in which the rose is the perfectly unattainable lover of the nightingale, but only the rose understands the plight of the nightingale's love. According to the insight of the Persian Sufi mystics, every rose contains something of the secrets of "the All," while in the Zoroastrian religion the *dana* is a rose, being the female deity of religion: flowers of *Rosa centifolia* thus were held to be the receptacle of the celestial deities. The gardens of Muslim Spain are direct descendants of the more ancient Persian rose gardens.

Elliot Wolfson (New York University) was unable to attend, so his paper on "The

Rose in Jewish Culture in Medieval Spain" was read by Peter Jacobs of Dumbarton Oaks. In it he noted that the rose appears as a spiritual Eros, having to do with carnal sexuality, in three monotheistic religions: Muslim, plus the two Abrahamic faiths, Judaism and Christianity. The medieval Kabbala, in the Mantua edition of Zohar (1558), comments that the community of Israel has judgment and mercy, and the rose has attributes of mercy also. Thus, there is conceived the development of a link between females, mercy, and roses. The mystical medieval Jews believed that the rose has the ability to metamorphose, as does a woman, and thus the fluctuating character of the red-and-white rose became equated with the fluctuations of the female between menstrual and non-menstrual cycles; menstruating women were forbidden to their husbands. And, in the Kabbala, the perceived androgyny of the female (in terms of duplicity and instability) was taken as the equivalent of a rose.

Nurhan Atasoy (Istanbul University, Turkey) presented her lecture on "Links Between the Ottoman and the Western Worlds in Floriculture and Gardening," in which she mentioned the Ottoman festival parades featuring paper yellow-flowered tulips 30-feet high shown by members of the florists guild; trays of flowers so beautiful they were sometimes used in bribery; and models of gardens made of sugar in commemoration of the circumcision of the sons of the Sultan. To the Ottoman Turks, the top of a cypress (*Cupressus*) tree was seen to be naturally bent at its apex, like the letter "A," the same as in "Aleph" which is the name for God, and in fact, in the year 1458 during the reign of Mehmet II, the Topkapi Palace was planted with 20,000 cypress trees. An astonishing influx of Turkish bulbs from Constantinople (Istanbul), such as lilies, tulips and crown imperials, found their way into depictions in European herbals.

Susan Toby Evans (Pennsylvania State University) delivered a lecture on the topic of "Precious Beauty: The Aesthetic and Economic Value of Aztec Gardens," among them being Chapultepec Park (named for a grasshopper) established by the Aztecs in the year 1420. Later the conquistadors and viceroys of Mexico used it as a pleasure palace, which was already in disrepair when the ill-fated team of Emperor Maximilian and his wife



David Lellinger (right), recipient of the IAPT Frans A. Stafleu Medal, receives his award from Dan Nicolson. (Photo by Elaine Haug)

Carlotta appeared for their short term French-supported reign. Evans mentioned the concept of *mimesis* in garden design, which is evident in the Chapultepec dynastic park since it has a mimetic effect that echoes the physical environment: terraces and stairs of the park are mimicking the topographical gradients of the surrounding area.

In zoos during the years 1470-1500, plants from throughout the Aztec empire were on display, such as at Tenochitlan. The Aztecs can be credited with developing the first ethnic theme park, an urban amusement park where albinos of all kinds, including human, were on show as an "Albino Whiteness Exhibit." Aztec kings controlled medicinal plants, and the Spaniard Hernandez is known to have collected some of them.

Yizar Hirschfeld (Hebrew University of Jerusalem, Israel) spoke on "Perfume and Power from the Ancient Near East to Late Antiquities," observing that the true botanical identity of one of the most famous cultivated perfume plants in the ancient Near East, the *balsam*, is today disputed and unknown, since it became extinct in cultivation in the early 6th and 7th centuries. No physical remains of archaeological balsam exist, although it is postulated to have actually been a species of either *Boswellia* (frankincense) or *Commiphora* (myrrh, balm of Gilead), both members of the family Burseraceae.

Mohammed El Faiz (Cedimes University, Morocco), unable to attend, had his

Acknowledgments

The success of the Symposium was due to the significant time and efforts of the following people:

Organizers

- Michel Conan, Co-Convener
- Laurence Dorr
- Mary Ann Apicelli
- Patricia Davis
- Ellen Farr
- Sheila Gagen
- Gary Krupnick
- Rosy Lum
- Sue Lutz

Core Collections Management Staff

Symposium dinner

- Holly Shimizu and the United States Botanic Garden staff

Photographers

- Elaine Haug
- Ida Lopez

Plant material

- Nancy Bechtol, Barbara Faust, and the Horticulture Services Division at the Smithsonian Institution

And many others who had helped in a myriad number of ways.

paper read by Rosy Lum of Dumbarton Oaks, entitled “Horticultural Changes and Political Upheavals in Middle-Age Andalusia.” He noted that botany and agronomy were auxiliary sciences that stimulated the Andalusian school of hydraulics, which was involved with constructing dams, weirs and aqueducts. These hydraulic schemes in Spanish Andalusian gardens allowed many fruit trees to be grown. From the East, sugar cane and bananas were acclimatized by Arabs in Andalusia, in fact constituting the first instance of acclimatization of tropical plants in Europe (= Spain). A specialty was developed in grafted citrus trees, such as the lime and Seville orange. Plants from wet monsoonal Asia such as rice were also tried out in the dry Arabic Spain of Andalusia. The audience learned that, to the lore of historical plant crazes such as the Victorian Fern Craze, Tulipomania and Orchidomania, can now be added the “Citrus Mania” that was spread by Arabs decorating their gardens in tune with the spread of different species and varieties of acclimatized *Citrus*.

Wybe Kuitert (Kyoto University of Art and Design, Japan) spoke on “Political Change and Cultural Values of Plants: Origins of Cherry Hybridization in Medieval Japan.” From the 7th century to the present time, pilgrims throughout Japan have made votive plantings of cherries (*Prunus serotina*, *Prunus serrulata* var. *spontanea*), which are indigenous to the secondary forests of middle-Japan: fertile double-flowered plants also occur there in the wild. In the 8th century the capital of Japan was moved from Mara to Kyoto, giving rise to the Edo period of 300 years of peace and gardening leisure among the nobility, attended by much poetry devoted to cherries.

An article relating to Kuitert’s presentation demonstrates an insight into the Japanese veneration of the cherry, since it analyzes in detail the fact that “militarization of mass consciousness through the appropriation of the *cherry blossom symbol* was intensified during the 1920s and 1930s, after the military seized power” and continues on through the cherry blossom effect on the subsequent motivations of kamikaze suicide pilots (Emiko Ohnuki-Tierney. 2004. Betrayal by idealism and aesthetics. *Anthropology Today* 20 (2): 15-21).

Georges Métaillé (Museum d’Histoire

Naturelle, Paris) spoke on “Grafting as an Agricultural and Cultural Practice in Ancient China.” The acutely observant ancient Chinese noticed the occurrence of natural, spontaneous grafting of trees that had grown into each other, and parlayed the phenomenon into an acknowledgement by Heaven of the relationship of the Chinese sovereign (symbolized by the “stock”) to the millions of people (scions) leaning on him for support. Very adept in grafting pears, peonies and even golden lotuses, the Chinese had access since the year 1273 AD to a book that was ordered to be written by Emperor Kublai Khan, entitled “Essentials of Agriculture and Sericulture,” which contained two chapters on grafting.

As Métaillé pointed out, Chinese philosophy recognizes different degrees of *consciousness*, not different degrees of *nature*, allowing for the perception of equilibrium between “yin” and “yang,” between host (stock) and scion (guest). Grafting was further transformed, based on those views, into a symbolization of the entry (or insertion) of a person into a clan. So, when a foreign emperor began to reign in China, it was accepted by some as a noble instance of grafting of the foreign emperor as guest or scion, onto the old stock of Chinese people. Very accommodating of them to do so, one must admit.

Saúl Alcántara Onofre (Tlalnepantla,

Mexico) spoke on “The Chinampas Before and After the Encounter with Europe.” The Mexica group of Aztecs who tended floating gardens (chinampas) in the lake of Mexico City cultivated a multitude of plants including corn (maize), chili peppers (*Capsicum annuum* and *C. frutescens*), beans, soybeans, squash, garlic, six species of tomato, and willows (*Salix bonplandiana*). Other specialties of the early chinampas were the sapodilla *Manilkara (Achras) zapota*, sweet potatoes, jicama, quince, bottle gourds, *Dahlia coccinea* (national flower of Mexico) and the native marigolds (*Tagetes*). The Aztec God of Water, master of the chinampas, was Tlaloc-teuctli.

Spanish conquistadors who later dominated the scene were afraid of flooding and they drained the lagoons (which supported the floating chinampas), in order to preserve Mexico City from the dangers of flooding. The Spanish then introduced European food plants such as crucifers, cereals and legumes, and flowers. It is felt that the chinampas were enriched by having Mexican flowers growing next to the introduced European ones. As the European vegetables introduced via Spain, such as lettuce, cucumbers and cabbage, became very popular they were eventually included among the plants grown in chinampas. Another result of Spanish intervention was that the

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Clem Hamilton spoke on “Urban Eco-for-ticulture in Modern Society” at the Smithsonian Botanical Symposium. (Photo by Elaine Haug)

Profile

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foreign flowers helped to obfuscate the cultural memories of the original flowers grown in the chinampas.

Mauro Ambrosoli (Università degli Studi di Udine, Italy) spoke on "The Contribution of Italian Peasants and Gardeners to the Conservation and Propagation of Species Diversity: An Investigation for the XVI-XVII Centuries." Peasant gardeners, as defined in this study, are tenant people who earn a living through manual work, whether in a small or large garden, regardless of their income. On feudal Italian estates and orchards in the 15th century, such people planted mulberry trees for silk, walnuts, apples, peaches, cherries, hazelnuts, pears and apples. Around the late 1400s, asparagus and artichokes were much in demand, and thus were also grown in the gardens. Among plant interchanges at the time were three kinds of cauliflower sent from France to Italy for cultivation. But as the economic plants of the New World became better known and appreciated, production of neotropical vegetables (such as chili peppers, beans and tomatoes) became reserved for the profit of the larger, richer houses who controlled the endeavors of the peasants.

Michel Conan (Dumbarton Oaks) delivered a lecture on "Horticultural Utopianism in Late 18th Century France." In the philosophical climate of 18th century France, the practice of horticulture brought men together for the common good of all. So-called "agricultural improvers" attempted to isolate the chemicals in plants. One of the improvers



Symposium participants enjoy a catered lunch in the garden of Dumbarton Oaks. (Photo by Ida Lopez)

was the father of modern chemistry, Antoine Lavoisier (1743-1794), who is credited with, among other things, discovering that diamond is a crystalline form of carbon; he lost his life in the French Revolution, an upheaval that itself stimulated the shared knowledge of the French Enlightenment.

One of the most influential persons of the age was André Thouin (1747-1824), horticulturist and botanist, who succeeded his father as head gardener at the Jardin des Plantes, Paris, and produced books on grafting and gardening. The numerous French botanists who traversed the New World in the 1700s sent seeds and plants back to Thouin in Paris. His dreams for a better world included a plant naturalization project to cultivate coffee trees in France, and he proposed to make an experimental farm for the universal naturalization of the world's useful plants. The horticultural Utopia fostered by Thouin had hopes of being useful for the benefit of all mankind. He is commemorated by the genus *Thouinia* Poiteau (1804, *nom. cons.*), a group of Mexican and Caribbean vines in the family Sapindaceae.

Daniel Martin Varisco (Hofstra University, Hempstead, New York) spoke on the subject of "Turning Over a New Leaf: The Impact of Qat in Yemeni Horticulture." The plant under consideration is qat, botanically *Catha edulis* (Celastraceae), which is cultivated in

Ethiopia, Somalia and Yemen for the stimulating properties of alkaloids in the newly formed young leaves. Sufi mystics originally used qat, which is kept (stored) in the side of the mouth like chewing tobacco, to stay awake while reciting prayers. Today, qat is a social phenomenon that is utilized as a group activity in order to variously enhance mental alertness, endure sleeplessness, and lessen the desire for food and sex. A marker of the Yemeni national identity, this non-narcotic stimulant, which works like an amphetamine, is now an important cash crop in Yemen.

At the beginning of the third day of events, which was held at the National Museum of Natural History around the theme of "Contemporary Botany and Horticulture in a Changing World," the José Cuatrecasas Medal for Excellence in Tropical Botany was presented to David J. Mabberley, the renowned British botanist and author of *The Plant-Book*. His internationally renowned publication, which is a handbook-dictionary of the vascular plants, is known or owned by every plant taxonomist in the world. Mabberley's first major research was on the pachycaul Compositae (Asteraceae) of Africa, and the coincidence was noted that Cuatrecasas had extensively studied the pachycaul Compositae of South America.

Next, Alain Touwaide (Department of Botany, Smithsonian Institution) delivered

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- Cuatrecasas Family Foundation
- Dumbarton Oaks
- International Association for Plant Taxonomy
- National Museum of Natural History, Smithsonian Institution
- Office of the Associate Director for Research and Collections, NMNH
- United States Botanic Garden

a lecture entitled “From Dêmêtêr to Iris: Perception and Ordering of the Vegetal World in Antiquity.” A fountain of untapped originality, Touwaide is the first scholar to observe that Roman gardens of the 1st century selected and arranged the plants according to a system of botanical classification associated with Theophrastus, who had classified plants according to their leaf shape. The Greek writer of histories of Rome, Polybius, constitutes a link for the study of interconnections related to Touwaide’s conclusions. Gradually, Roman gardens that had started by simply growing cabbages were transferred from the countryside into the city, and gardens became an image in miniature of the Roman Empire.

Therese O’Malley (National Gallery of Art, Washington) presented a lecture on “Horticulture in Philadelphia during the American Revolution.” She observed that early Republican America had a great enthusiasm for gardening, and gardens belonged to the elite of society, for whom plants were the subject of conversation in genteel homes in cities such as Philadelphia, which was then in the midst of a scientific and aesthetic efflorescence.

Clem Hamilton (Rancho Santa Ana Botanical Garden, Claremont, California) spoke on “Urban Eco-for-ticulture in Modern Society,” pointing out the basic



Peter Del Tredici delivers his lecture “Horticulture in a Changing World.” (Photo by Elaine Haug)

concept that Urban Horticulture, Environmental Horticulture, Urban Ecology and Urban Forestry are four terms for the same thing. Fields that are allied to Urban Horticulture include environmental engineering and landscape architecture, while the subfields of Urban Horticulture include horticultural taxonomy, landscape design, and even environmental psychology (Why do we feel good while walking in a garden?). He recommended that a homeoclimatic approach to gardening should be taken and native plants used if at all possible, while noting in that context, that only 0.1 percent of plants sold in Southern California nurseries are native plants. Hamilton’s research has indicated that, of the several suffocating, kudzu-like kinds of English Ivy that are now damaging the natural biodiversity of urban America, *Hedera helix* causes the worst damage, while conversely *Hedera algeriensis* ‘Gloire de Marengo’ may be planted as among the least likely ivy to naturally spread on a rampage.

Next came the awarding of the International Association for Plant Taxonomy (IAPT) Stafleu Medal, which went to David B. Lellinger, Emeritus Curator of Botany, National Museum of Natural History. His most recent comprehensive publication is “A Modern Multilingual Glossary for Taxonomic Pteridology” (*Pteridologia* 3: 2002). Lellinger remarked on the diversity of fern life cycles which caused a need for expanded terminologies, and noted that a Chinese language version of his Glossary is being prepared.

Peter Del Tredici (Arnold Arboretum of Harvard University, Jamaica Plain, Massachusetts) spoke on the topic of “Horticulture in a Changing World,” and observed that we humans as a whole are so readily adaptable to change, that we have become dangerously complacent about global (warming) climate change, while at the same time urban areas are a convenient window into the future because cities are much warmer and drier than other places. He recommended that the palate of different plants that gardeners choose to grow should be varied to include introduced species from various provenances, for as Del Tredici has noted elsewhere, “What I find particularly depressing about the ‘native species only’ argument is that it ends up denying the



Dan Hinckley delivers his talk “A Nurseryman’s Perspective on Bio-Invasion.” (Photo by Elaine Haug)

inevitability of ecological change” (see Del Tredici, P. 2004. Neocreationism and the illusion of ecological restoration. *Harvard Design Magazine* Spring/Summer: 87-89).

The next lecturer was Daniel Hinckley (Heronswood Nursery, Kingston, Washington) who addressed the topic of “New Plants for Research and Horticulture: The Problem of Invasive Species.” He started by saying that he only grows native plants in his garden—native to Earth! This spokesman of plant exploration seemed to radiate the special sort of transcendental enthusiasm that is typical of an ascended master of the Temple of Flora. He proceeded to discuss various plants that had been tracked down over the years for Heronswood Nursery and the USDA. On Hinckley’s travels he has encountered the submersed *Loudinia rossii* (Saxifragaceae) in Korea; seen vast variations amid acres of Turkish *Colchicum speciosum*; found groves of *Cornus mas* in Turkey being cultivated according to sizes of their fruits (Carnelian cherries); and met up with *Epimedium chlorandrum*, an endemic orchid of Szechuan, China, that produces different taxonomic varieties in different valleys, but which was extirpated by plant vendors in just six years due to

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Profile

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its reputation as an aphrodisiac. Perhaps the most bizarre of the plants he has observed is the strangely shaped *Rheum nobile* of the rocky Himalayas, a plant whose sloping growth habit resembles a pink traffic cone, and is botanically a relative of rhubarb.

To combat the problem of plant invasiveness in your garden, Hinckley suggested the use of sterile plants (e.g. *Hydrangea* “mopheads”); planting fewer clones and using those known to have reduced seed viability; and planting unisexual species that will afford fewer opportunities for breeding. Taking Del Tredici’s and Hinckley’s lectures together, with just a touch of Mabberley (see below), as a study-unit if you will, one cannot help but surmise that much of current ethical and evolutionary philosophy tends to advocate, in the words of Stephen Jay Gould (1941-2002), “supporting a sensitive cultivation of all plants, whatever their geographic origin, that can enhance nature and bring both delight and utility to humans” (Gould, S.J. 1998. An evolutionary perspective on strengths, fallacies and confusions in the concept of native plants. *Arnoldia* 58 (1): 2-10).

W. John Kress (Chair, Department of Botany, Smithsonian), penultimate speaker on the third day, informed the audience concerning “Plant Exploration in the 21st Century: Intellectual Property Rights, Globalization, and Technological Tools.” He reported that the decade of 1890-1899 experienced the discovery and scientific description of more plants (ca. 65,000 species) than in any other decade for which *Index Kewensis* statistics are available. That decade roughly corresponds to the final decade



Discussions were plentiful during a coffee break on the Terrace at Dumbarton Oaks during the Smithsonian Botanical Symposium. (Photo by Ida Lopez)

of the Victorian Age (1891-1901), the twilight of an extended heyday of worldwide plant collecting and geographical exploration stimulated by government-sponsored expeditions as well as mass collectors in the employ of private commercial nursery establishments. A secondary spike in the publication of plant descriptions in previous centuries occurred around 1910-1924.

More recently, there has been an upsurge in the number of analyzed and re-named plants, undoubtedly stimulated by new waves of interest in discovering and deciphering the entire natural world as a precursor to conservation of the dwindling biodiversity now represented in it. This Age of the Environment has seen the publication of the 1997 *IUCN Red List of Threatened Plants*, with coverage accounting as far as possible for every endangered, threatened, vulnerable and extinct vascular plant species in the world. Sadly, 12 percent of plant species are now considered threatened with extinction. Hotspots of biodiversity on the world’s surface have been discerned, and are being investigated. Yet, as Kress postulates, the 21st century is the Final Age of Plants, for sometime around the year 2032 the last plants will have been described before the complete degradation and devastation of the world’s natural habitats will have been achieved by the actions of humanity. However, by extrapo-

lation Kress also predicted that 35,000 plant species are yet to be described, before the year 2032 when virtually all terrestrial plant species will have become known to science, i.e., described before it becomes impossible to find any more novel plants in the field. Some comfort may be taken in the fact that 80,000 species are now growing worldwide in botanical gardens, where they are being conserved and the mysteries of their existence are being probed in efforts to propagate them, and repatriate them into their original localities when feasible.

DNA sequencing technology (i.e., DNA barcoding of plants) will be coming to the fore in attempts to build a DNA Library of Sequences to help implement and facilitate the instantaneous identification of plants. And surprisingly, it should be only five years from now before handheld DNA sequencers the size of a cell phone may be in use. So the scientific world has been on a long and continuing sequential journey to locate and describe species, to evaluate their relationships, to investigate and utilize their qualities for the benefit of humanity, and to conserve them.

The final speaker of the Symposium was David Mabberley (University of Leiden, The Netherlands and Royal Botanic Gardens, Sydney, Australia) whose lecture was entitled “Summary and Conclusions: The Way Ahead.” He

summarized the scope and contents of the three-day meetings, while intercalating much additional knowledge of the subjects gleaned from his experiences around the world. The participants were asked to recall that plants have been used over time as symbols of power, wealth, and gentility, as well as for their beauty and scientific values. Mabberley introduced the new conceptual terminology (new to most taxonomists, anyway) of “vegiculture,” referring to the growing of plants such as taro (*Alocasia*, Araceae) by means of shifting cultivation, and “semeculture” (“seed”-culture) which refers to settled cultivation such as practiced by Europeans and colonials.

Mabberley observed that the landscape of the whole world is due to, has been shaped by, human activity. That fact, when coupled with all the extensive human migrations and centuries of plant interchanges that have taken place across the globe, indicates that it is often impossible to tell whether the species in a given locality are native (indigenous) or introduced. Becoming slightly provocative (as he admitted it might be), Mabberley then remarked that allopolyploidy and evolution have shaped both wild and cultivated plants, yet significantly we still have different codes of nomenclature for the wild, as opposed to the cultivated, plants (rye and oats were once weeds of wheat, but “by stealth” became crops



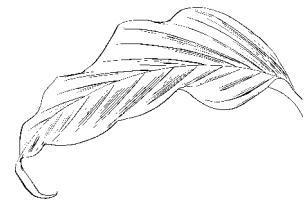
Yizhar Hirschfeld (left), Alain Touwaide, and Emanuela Appetiti at a reception during the Symposium. (Photo by Ida Lopez)

themselves). He concluded, based on the above premise, by suggesting that it is a “folly” that some published floras expunge introduced plants from the environment by means of excluding the introduced species from listing in the flora, and thereby pretending they do not exist in the range (environment) of the flora.

In the evening the official Reception and Dinner were held at the United States Botanic Garden, putting the perfect cap

on a very successful and inspirational symposium.

[†]As this issue of the *Plant Press* went into press, we received the sad news that Robert DeFilipps had passed away. DeFilipps was a member of Botany for almost 30 years, fulfilling many roles during his tenure at the Smithsonian Institution. More information will be provided in the next issue of the *Plant Press*.



Supplementary Symposium Links on the Web

The Web site to the 4th Annual Smithsonian Botanical Symposium <<http://persoon.si.edu/sbsarchives/sbs2004/>> has many links and documents related to the conference. Included on the Web site is a full list of the participants, abstracts of the talks, and selected images from the various events. Additional items related to the symposium can be added to the list of links and documents by sending an E-mail to sbs@nmnh.si.edu.

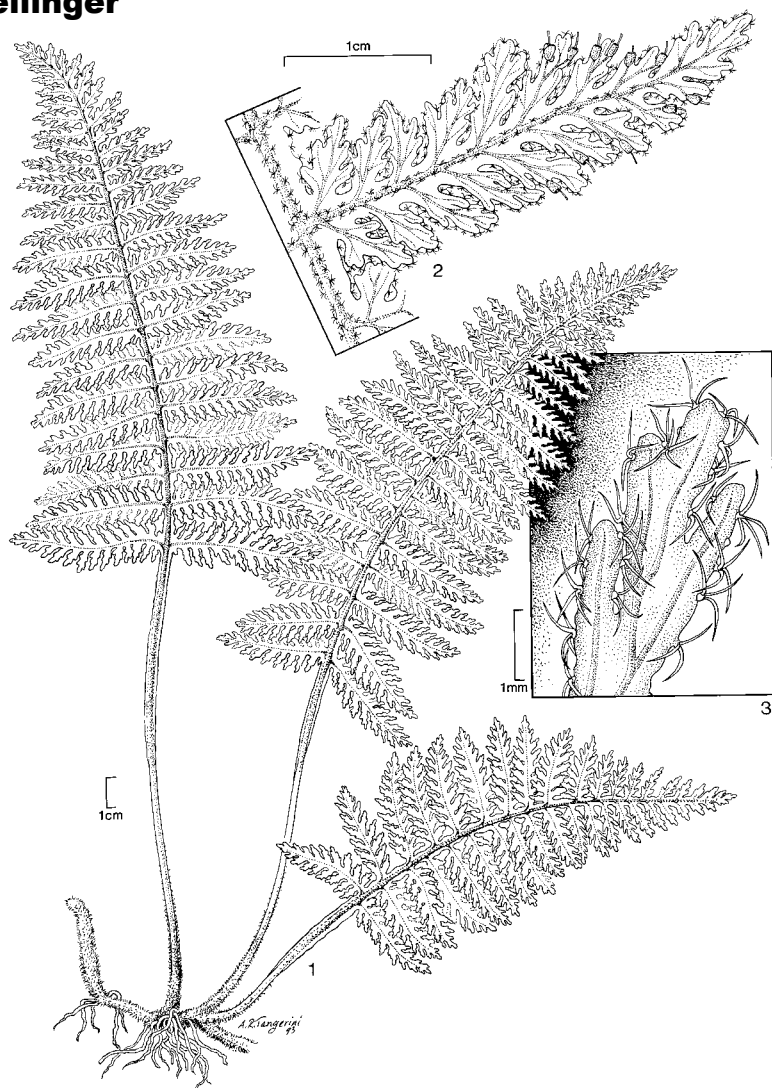


Clem Hamilton (right) talks with Holly Shimizu and Daniel Martin Varisco during a reception at the United States Botanic Garden. (Photo by Elaine Haug)

***Trichomanes caliginum* Lellinger**

Emeritus Curator David B. Lellinger was the recipient of the first IAPT Stafleu Medal, presented at the 4th Annual Smithsonian Botanical Symposium.

The award honors those who produce an outstanding publication on historical, bibliographic, or nomenclatural aspects of plant systematics, such as Lellinger's comprehensive publication, "A Modern Multilingual Glossary for Taxonomic Pteridology." This image of *Trichomanes caliginum* was drawn from a specimen collected in a Venezuelan cloud forest by the late John Wurdack, and described by Lellinger in the *American Fern Journal* (84: 1-4; 1994).



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