Department of Botany & the U.S. National Herbarium

The Plant Press

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Botany Profile

Artists Have to Draw the Line Somewhere

By Robert DeFilipps

Mother Nature seems to be rather frugal when it comes to randomly bestowing natural talents. The majority of us are not profoundly endowed with skills for the pursuit of advanced mathematics, music, poetry, ballet, modern dance, or art. We must hasten to acknowledge, however, that there indeed have been some notably skilled botanists who were also gifted artists, among them Sir William Jackson Hooker (1785-1865), director of the Royal Botanic Gardens Kew, who published 1,800 of his own plant drawings, and the agrostologist Mary Agnes Chase (1869-1963) who provided 1,000 drawings for A.S. Hitchcock's *Manual of the Grasses of the United States*. Most taxonomic botanists, however, are not blessed with the duality of both botanical and artistic expertise, and are thus obliged to rely upon the services of a professional botanical illustrator.

Many people who are interested in natural history have been exposed to the famous classical flower- and plant-painters whose works leap from the canvas in glowing colors, such as Margaret Mee (English, 1909-1989, working from nature in the Brazilian forests); Marianne North (English, 1830-1890, Victorian plant painter who traversed the world); Maria Sibylla Merian (German, 1647-1715, painter of Suriname flora and insects); and Pierre-Joseph Redouté (Belgian, 1759-1840), who brought us sumptuous roses and lilies, and fatally succumbed to a stroke while examining a lily he had been commissioned to paint. Georgia O'Keeffe made famous depictions of a number of plants including her readily identifiable *Zantedeschia* calla lily and *Neoregelia* bromeliad; calla lilies also figure in the corpus of the well-known female painter who preferred to be known only by the uninomial "Gluck."

Let us now attempt to carefully isolate from the world's pool of botanical illustrators and representational artists, that small cadre of people who specialize in producing one particular form of art. This form may be defined as "a scientific black-and-white line illustration, drawn to scale;" in other words, "botanical line art." A line drawing cannot aspire to be greater than its own dimensions; it must be an exact likeness. Armed with those thoughts, we may foray into the realm of Alice Tangerini, botanical illustrator in the Department of Botany, National Museum of Natural History.

Born with a superb ability to create, basically as a reconstruction, highly detailed depictions of plants by means of coordination between the eyes, the brain, and the pen in hand, Alice Ruth Tangerini (whose initials happen to spell "ART") has a talent akin to perfect pitch or a photographic memory, which are as infrequently manifested in the human population as a buttoned collar and necktie at Disneyland.

Tangerini, who has been drawing since she was 4 years old, was born in Takoma Park, Maryland and educated at Virginia Commonwealth University, from which she received a BFA (Bachelor of Fine Arts) degree in 1972. She took up the position of Staff Illustrator in Botany in 1972, encouraged by bromeliad specialist Lyman B. Smith, to whom she had been introduced in 1968, and her first drawing for Smith was the Venezuelan bromeliad *Ayensua uaipanensis*. Since then, her eagle-eye and ability to discern distinguishing characteristics between closely related taxa, features that botanists can sometimes overlook even after the closest scrutiny of a specimen, has stood her in good stead with the curators of botany, her almost exclusive clientele: that is how the bromeliad of Venezuelan Guayana, *Navia aliceae* (named for her) came to be taxonomically distinguishable from its nearest relative *Navia nubicola*. She is not often asked to make watercolor drawings, since the dried herbarium specimens from which she draws are lacking in color anyway, and color processing is currently too expensive for most botanical journals to reproduce.

Away from the drawing boards, waterproof Indian ink, translucent tracing film, drafting film, Windsor-Newton brushes, pressure-sensitive pen quills, dissecting and compound microscopes, and the camera lucida, all of which are used in her work, Tangerini's personal preference is for Surrealism, with its combination of reality and fantasy. A variant of surrealism can be found in the one-man school of Primitivism created by Henri Rousseau (French, 1844-1910), who based many of his floral subjects, such as the *Nelumbo* water lotus in his series of imaginary "jungle paintings," on a book of drawings of plants growing in the Paris Jardin des Plantes (botanical

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Visitors

Jesus Rodrigo Botina P., Universidad del Valle; Smilacaceae (10/3-10/15).

George Ziobro, Food and Drug Administration, Division of Natural Products; *Illicium* (Illiciaceae) (10/7; 10/22).

German Carnevalli, Centro de Investigación Científica de Yucatán, A.C. (10/16-10/30).

Wayne Cozzolino, Systems Solution, Inc.; Digital Camera Demonstration (10/16).

Basil Stergios, UNELLEZ, Guanare, Venezuela; Monocotyledons of Guaramacal (10/16-11/16).

Guild of Natural Science Illustrators, District of Columbia GNSI; Greenhouse Tour and Demonstrations (10/18).

Gale Largey, Mansfield University, Pennsylvania; Lester Ward collections of *Salix caroliniana* (Salicaceae) (10/20).

Holly Shimizu, United States Botanic Garden (10/22).

Emily Gillespie, Appalachian State University; *Carex* (Cyperaceae) (10/23).

Alexander Krings, North Carolina State University; Asclepiadaceae (10/23).

Maria Moreno, Miami University; *Piper* Sect. *Macrostachys* (Piperaceae) (10/23-10/24).

Eric Tepe, Miami University; *Piper* Sect. *Macrostachys* (Piperaceae) (10/23-10/24).

Scott Mori, New York Botanical Garden; Lecythidaceae (10/24).

Richard Spjut, World Botanical Associates; Herbarium and Library (10/24).

Eleanor Pardini, University of Georgia; *Albizia* (Leguminosae) (10/27).

Chelsea Specht, University of Vermont; Costaceae (10/27-11/26).

Lynn Gillespie, Canadian Museum of Nature; *Poa* (Poaceae) (11/6-11/21).

Tom Wendt, University of Texas; Piperaceae, Polygalaceae (11/10-11/13).

Roger Troutman, Private Researcher; *Liatris* (Asteraceae) (11/12-11/29).

Mark Tebbitt, Brooklyn Botanic Garden; Begoniaceae (11/17-11/21).

Harvey Ballard, Miami University (Ohio); Violaceae (11/24-11/28).

Elisabeth Porscher, University of Arizona, Office of Arid Land Studies; Flora of St. Paul Is., Alaska (11/28-12/5).

Anja Amtoft, SUNY and NY; Lichens *Dermatocarpon* (Lichens) (12/2).

Fabian Michelangeli, New York Botanical Garden; Melastomataceae (12/2-12/3).

Kyle Williams, Duke University; *Globba* (Zingiberaceae) (12/3-12/5).

Sharon Anderson, USDA, Agricultural Research Service, Foreign Disease-Weed Science Research Unit; *Centaurea* (Compositae) (12/9).

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Chair of Botany
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Web site: http://www.nmnh.si.edu/botany

Travel

Mark and **Diane Littler** traveled to Panama City, Panama (9/4–9/19) to conduct ongoing research.

Pedro Acevedo traveled to Brazil (9/18–9/23) to conduct ongoing research.

Vicki Funk traveled to Cambridge, Massachusetts (9/25–9/26) to attend a strategic planning meeting with the Center for Tropical Forests (CTFS); to Argentina (10/17–10/27) to speak at the Argentina Botanical Society; and to Gainesville, Florida (11/9–11/13) to attend a workshop at the University of Florida.

Laurence Skog traveled to Duluth, Minnesota (9/25–9/28) to give a lecture at the Biology Department of the University of Minnesota at Duluth and to be inducted into the Academy of Science and Engineering; and to Boulder, Colorado (10/1–10/5) to conduct research at the University of Colorado, Museum of Natural History.

W. John Kress traveled to Manhattan, New York (10/3–10/4) for the dissertation defense of Chelsea Specht at New York University; to Durham, North Carolina (10/8–10/9) for the dissertation defense of Kyle Williams at Duke University; to Amherst, Massachusetts (10/27–10/28) to speak at Amherst College; and to Yunnan, China (11/17–12/2) to conduct ginger pollination research at the Xishuangbanna Tropical Botanical Garden.

Dan Nicolson traveled to Bronx, New York (10/7–10/10) to continue work on the *Taxonomic Literature edition 2 (TL-2)* at the library of the New York Botanical Garden.

Maria Faust traveled to Corpus Christi, Texas (10/14–10/16) to attend an organizational meeting to study the biodiversity of the Gulf of Mexico, sponsored by the Harte Research Institute; and to Ft. Pierce, Florida (12/14–12/17) to present a paper at a conference on the Twin Cays mangrove ecosystem in Belize

Alain Touwaide traveled to Cambridge, Massachusetts (11/6–11/8) to attend the annual Earthwatch Conference where he presented a poster and delivered the lecture "Medicinal Plants of Antiquity."

Alice Tangerini traveled to Richmond, Virginia (11/16–11/18) to teach a class at Virginia Commonwealth University.

Warren Wagner traveled to Kaua'i, Hawai'i (12/1–12/9) to meet with the staff of the National Tropical Botanical Garden to begin preparations for tenure as McBryde Chair.

The Smithsonian's Department of Botany – Once Again!

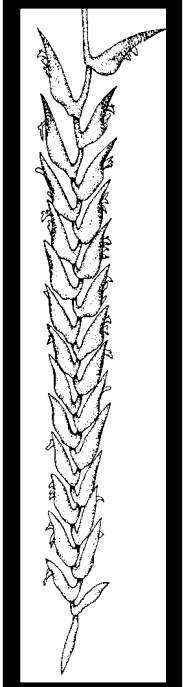
Chair With A View — W. John Kress

After over 100 years of productive activity, the Department of Botany at the Smithsonian in February of 2001 was subsumed as a "section" (along with the Departments of Vertebrate Zoology, Invertebrate Zoology, and Entomology) within a newly formed mega-Department of Systematic Biology. This administrative consolidation by the Director's Office was made without discussion nor planning by the participant departments which for the most part did not perceive this as a positive step. With much reservation in Botany, we changed our address labels and business cards to reflect the new organization and plowed ahead with our research and collections work. Still something did not seem right as the administrative realignments and reassignments were just not working. Botany as a department had established over the years a very solid identity in the botanical world, we had built a significant reputation as a leading international center of plant research with the United States National Herbarium at its core, and we had generated considerable scientific momentum during the last decade by setting-up endowments, hosting symposia, and raising our scholarly profile. It is not necessary to recount here the "trials and tribulations" of the ensuing three years that we endured as the Botany Section. The bottom line was that as a result of this reorganization Botany, as a scientific enterprise in the Museum, had lost its seat at the Director's Table.

It is great news for all of us that as of 1 February 2004, the Department of Botany will be reinstated at the National Museum of Natural History. Due to a number of reasons, including the lack of planning and the lack of resources, the Department of Systematic Biology did not achieve its administrative objectives. Most notably the Smithsonian Science Commission also made it clear in their report that this large mega-Department was not working and needed to be reassessed. Our new Museum Director, Dr. Cristián Samper, did the right thing in critically reevaluating the departmental structure through the work of a task force and lengthy discussions, debates, and evaluations within the Museum. The conclusion was that Botany as a science and an administrative entity was a robust component of the Museum with its own strengths, constituents, and priorities. It is fitting that the Department of Botany, along with the Department of Entomology and a new Department of Zoology, has its seat back at the Director's Table.

Through this three-year period of administrative malaise and uncertainty as a "botany section," the curators and staff in Botany continued to forge ahead with our programs of research, collections, and outreach. We published hundreds of research papers and books, conducted field work in twenty countries around the world, joined with outside organizations in a number of collaborative conservation projects, submitted proposals and raised funds for research and collections projects, added tens of thousands of specimens to the U. S. National Herbarium and our living collections, convened international symposia, trained future scientists, initiated and designed plant-oriented exhibits in the Museum, expanded our library capabilities and holdings, pushed our information management infrastructure and capabilities forward, and expanded our presence on the web and our communication with the botanical community world wide. The details of our accomplishments can be gleaned from the pages of the *Plant Press* published over this time period.

Now that we are once again recognized and active as the Department of Botany at the Smithsonian we have much to do to continue these activities. With the encouragement and support of Director Samper we will continue to demonstrate our leadership position in the community of botanical institutions, increase fund raising activities to enhance our research capabilities, build a strong scientific program through new curatorial and support staff recruits, and solidify our management and administration structure in the Department. We must also actively improve the maintenance and utilization of the 4.7 million specimens in the U.S. National Herbarium, which will always serve as the basis for our research efforts, through improved methods of care, compactorization, informatics, and digitization capabilities. However, these efforts can only succeed if each member of the Department of Botany participates in the planning and execution of these goals and objectives. Now that we are a Department once again, with a seat at the Director's Table and Cristián Samper's strong support, I am confident that we will continue to move ahead and excel in our work. I am looking forward to the next three years as the Chairman of the Department of Botany and I will do everything within my capabilities to move us ahead in each of these areas.



Linnaea borealis

Staff Research

Mark and Diane Littler have published a new field guide entitled "Waterways and Byways of the Indian River Lagoon." This book is a comprehensive sportsman's guide, with 51 high-resolution double-page aerial photographs encompassing 156 miles of prime boating, sport fishing, birding, photography and spoil islands, shoals, dredged holes and channels, natural waterways and hidden byways of the intricate Indian River Lagoon estuary. Key landmarks, boat ramps, compass headings, size scales and Global Positioning System (GPS) locations are labeled for orientation. This guide book is replete with personal notes and insights from five decades of flats angling experience, including twenty years in and on the Indian River Lagoon. Illustrations and stunning photographs of the major fishes, birds, mammals and plant life facilitate quick and easy identification.

Alain Touwaide has recently written two new books. "Healing Kidney Diseases in Antiquity. Plants from Dioscorides's De materia medica with Illustrations from Greek and Arabic Manuscripts (A.D. 512 - 15th century)," is about the treatment of renal diseases in Antiquity. This book was written in collaboration with three Italian nephrologists (Natale Gaspare de Santo, Guido Bellinghieri, and Vincenzo Savica) interested in the history of medicine. The book contains many botanical illustrations from original manuscripts.

The second book, "Le piante medicinali del 'Corpus Hippocraticum'" (published by Guerini e Associati), was written in collaboration with two Italian botanists (Giovanni Aliotta and Antonino Pollio) and an Italian pharmacologist, professor at the University of California Irvine (Daniele Piomelli). The book is an inventory of all the plants used for therapeutic purpose in the Corpus Hippocraticum (the writings by, or attributed to, Hippocrates [460 - between 375 and 351 B.C.]), with the inventory of the medical conditions for the treatment of which they were used. To these textual data, the work adds botanical identification and descriptions, together with the references to pharmacological literature.

Staff Activities

Robert DeFilipps delivered an illustrated talk on "Ornamental and Medicinal Plants of the Guianas" at the U.S. Botanical Garden on 16 January. DeFilipps spoke about plants he recommends for ornamental and medicinal use from the Guianas.

Mark and Diane Littler presented a talk entitled "Ecology and taxonomy of siphonalean green algae at Twin Cays" at The Twin Cays Mangrove Ecosystem, Belize: Biodiversity, Geological History, and Two Decades of Change conference held in Fort Pierce, Florida, 14-17 December. **Maria Faust** also presented an invited paper at the meeting, "The dinoflagellates of Twin Cays: Biodiversity, distribution, and vulnerability." Proceedings of the meeting will be published in a special volume of the *Atoll Research Bulletin*. It will summarize all important research activities conducted at Twin Cays, Belize during the last 20 years.

On 20 October, Curator Emeritus **Stanwyn Shetler** led Gale Largey, Professor of Sociology at Mansfield University of Pennsylvania, on a field-trip along the Potomac River to videotape native, living shrubs of Ward's willow, where Lester Ward first collected the new species in the late 1800s. Largey is doing a video documentary of Ward's life. Ward was a local botanist and paleobotanist in Washington in the late 19th and early 20th centuries, who then turned to sociology. After the Potomac River field-trip, Shetler brought Largey to the U.S. National Herbarium, where he videotaped several preserved specimens collected by Ward himself.

On 30 October, **Warren Wagner** presented a lecture, "Understanding Extinction in Hawaiian Plants," at the United States Botanic Garden. With more than a third of the native plants of the Hawaiian Islands at risk of extinction, Wagner's studies of the relationships of species and ecological aspects of each lineage show why one lineage may be predestined for extinction over another.

Staff Retirements

In October 2003, two curators of the Department officially retired from the Smithsonian Institution. **Laurence E. Skog**, specialist in Gesneriaceae, and **Dieter C. Wasshausen**, specialist in Acanthaceae and Begoniaceae, each had 30 or more years of consecutive federal service in the Department. Both were previously profiled in the *Plant Press*. (Skog: 3(2), 2000; Wasshausen: 5(4), 2002).

New Faces

Four new volunteers have begun assisting the Core Collections Management team. **Herrick Brown** recently obtained his M.S. in Herpetology at the University of South Carolina and is helping with outreach activities. He is also spending time with George Zug in Invertebrate Zoology. **Lizzie McGee** is working toward her degree and hoping to supplement her skill set by working on different imaging projects. **Elizabeth Sandifer** has quite a varied background, including owning her own business. She is working on transaction management documentation and assisting Deborah Bell with conservation tasks. **Heijia Wheeler** has recently retired from college administration duties (she has a Ph.D. in Botany and she is Louis Wheeler's niece) and will be assisting on a number of collections projects. We are very fortunate to have these accomplished and selfless individuals volunteering their time for us in Botany.

Awards & Grants

The Indian Association for Angiosperm Taxonomy has honored **Dan Nicolson** with a certificate nominating him as an Honorary Fellow in recognition of his contributions in the field of angiosperm taxonomy.

Nicolson was also selected as President of the Nomenclature Section for the XVII International Botanical Congress to be held in Vienna, Austria on 17-23 July 2005.

On 7 October, **Robert Faden** and his wife Audrey Faden were given an award by the Alexandria City Beautification Commission for the gardens they have installed on the Alexandria YMCA in Virginia. The award was presented by Alexandria mayor Bill Euille.

Littlers Receive AAUS Lifetime Achievement Award

The former presidents of the American Academy of Underwater Sciences (AAUS) convene each year and select an individual(s) that has contributed unselfishly to the advancement of underwater science. The award recognizes excellence over decades of time in the scientific disciplines of biology, chemistry, fisheries, geology, physical sciences, archeology, ecology, and the area of hyperbaric physiology. This year, the Academy recognizes two individuals that have a long, illustrious, and intimate relationship with marine plants.

AAUS proudly awarded **Diane** and **Mark Littler** the American Academy of Underwater Sciences Lifetime Achievement Award for 2003. The Littlers are good expedition organizers, they go to the far ends of the planet to study marine plants and learn all the secrets they possibly can about lives of these marine plants.

The Littlers have spent over 30 years studying the marine plants of the Atlantic, Pacific, and Indian Oceans. They have published over 150 papers in scholarly journals on a wide range of subject matter; and have published several beautiful books with exquisite photos of plants and the animals that utilize the plants for homes and food. The Littlers received the prestigious Prescott Award presented this year from the Phycological Society of America for their book, "Caribbean Reef Plants."

The current crop of young researchers has a debt to pay to the Littlers. Twenty years ago, if you wanted to identify a marine plant (alga) you needed to go through an archaic dichotomous key that frequently led you to the wrong plant. The Littlers recent books have a dichotomous key, but they also have fantastic photographs and excellent drawings of the plant's microstructure. They hold a Guinness world record for discovery of the deepest plant on earth (268 meters). They are interested in the role of overfishing and the resultant changes in the plant life on reefs.

Robert William Read (1931-2003)

By Dan H. Nicolson
(From Taxon *52:867. 2003)*

"Bob" Read was born 13 December 1931 in Woodbury, New Jersey. He served in the U.S. Navy Reserve (1951-1953) and the Air Force Reserve (1953-1957). He graduated from the University of Miami (B.Sc. 1958), Cornell University (M.Sc. 1961, working with Harold E. Moore, Jr.) and the University of the West Indies (Ph.D. 1968). He was a botanist at the Fairchild Tropical Garden in Miami (1960-1965, working with C. Dennis Adams, with a thesis on Jamaican *Thrinax*). The latter became a revision of the genus published in 1975 as the *Smithsonian Contributions to Botany* vol. 19.

While in school at Miami, Florida, Read volunteered at the Fairchild Botanic Garden in Miami, and, after graduating from Cornell, he became the Garden's first botanist. In 1967 he won a National Academy of Science Postdoctoral Fellowship to work on Bromeliaceae with Lyman Smith at the U.S. National Herbarium. He was field chief for M.D. Dassanyake and F.R. Fosberg's (eds.) *Revised Handbook to the Flora of Ceylon* project (1969-1970). He returned to Washington to become an editor for the *Index Nominum Genericorum* (1970-1972), and then an editor for the *North American Flora* project (1972-1973). In 1973 he became an associate curator at the Smithsonian, later a curator until his retirement in 1989 to Florida. He continued research on palms and bromeliads and renewed a position with the Fairchild Tropical Garden. During his retirement in Florida he was the Founding Chairman of what is now the Naples Botanical Garden and supported many other organizations valuing his botanical expertise and enthusiasm.

His research interests particularly focused on the systematic botany of recalcitrant and often poorly collected tropical palms, bromeliads, cycads and orchids. He began publishing (on palms) in 1959. He contributed palms and part of Bromeliaceae to C.D. Adams' *Flowering Plants of Jamaica* (1972), as well as the palms in R.E. Howard's *Flora of the Lesser Antilles* (1979). His last major publication (2001) was *Nehrling's Plants, People, and Places in Early Florida* based on and updating the publications and manuscripts of Henry Nehrling (1853-1929).

He died of congestive heart failure 15 July 2003 in Naples, Florida, after some months of ill health.

Visitors

Continued from page 2

Linda Prince, Rancho Santa Ana Botanical Garden; Zingiberales (12/10-12/15).

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

Paul Berry, University of Wisconsin; *Croton* (Euphorbiaceae) (12/15-12/16).

Volker Bittrich, Universidade Estadual de Campinas; Clusiaceae (12/15-12/16).

David Frodin, Royal Botanic Gardens - Kew; *Schefflera* (Araliaceae) (12/15-12/17).

George Shepherd, Universidade Estadual de Campinas; Cyperaceae (12/15-12/16).

J. Scott Peterson, USDA, National Plant Data Center; Data and Imaging Projects (12/16-12/17).

Wesley Knapp, Delaware State University; *Juncus longii* (Juncaceae) (12/18).

Rob Naczi, Delaware State University; *Carex* (Cyperaceae) (12/18; 1/8-1/9).

Arthur Tucker, Delaware State University; Lamiaceae (12/18).

The Conservation Column

By Gary A. Krupnick

On October 8 and 9, the North American Pollinator Protection Campaign (NAPPC) convened at the University of Maryland in College Park, Maryland. NAPPC, a tri-national (United States, Canada, Mexico) public and private partnership of over 50 organizations and agencies, aims to promote pollinator awareness, policies, educational outreach, research and conservation. The conference brought together nearly 70 invited delegates from potential partner organizations and scientific authorities to develop itemized strategies and work plans to affect collaboratively positive change in the areas of pollinator research, education and awareness, conservation and restoration, policies and practices, and special partnership initiatives. **Gary Krupnick** attended the conference as a representative for the National Museum of Natural History.

The goal of the conference was to (1) evaluate NAPPC work and process to date, (2) revise an implementation plan for the various committees, and (3) deploy new task forces to undertake and complete short-term activities.

Discussion occurred in small groups and at plenary sessions. Five key working groups focused on issues pertinent to pollinator protection: Research, Outreach and Education, Conservation and Restoration, Policies and Practices, and Special Partnership Initiatives. The working groups focused on comprehensive long-range approaches to the pollinator issue from distinct categorical perspectives that continue over time. The groups worked for approximately three hours on 8 October, presenting their concepts at the end of the afternoon. The working groups reconvened the next day for two hours and prepared a final report of their deliberations. In the week following the conference, the reports of the working groups were transcribed and returned to each group chair for review by the committee members.

The task forces—cross-discipline, short-term, project-oriented groupings designed to accomplish a single task—met for three hours on 9 October. The six task forces were (1) the U.S. Botanic Garden group, to help develop a 2004 exhibit at the Garden on the role and importance of pollinators; (2) the U.S. Commemorative Stamp group, to solicit support for a stamp series on pollinators; (3) the PESP-EPA group, to work with the EPA's Pesticide Environmental Stewardship Program (PESP), to develop partnership programs which protect pollinators; (4) the Photo Exhibition group, to design parameters for a tri-national pollinator photo exhibit in conjunction with the 2004 U.S. Botanical Garden exhibit; (5) the International Expansion group, to increase participation by government agencies and industry in Canada and Mexico; and (6) the NAPPC coordinator group, to review the NAPPC coordinator job description, determine specific requirements for a candidate and determine the best recruitment techniques. After the initial task force meetings, the groups presented their goals, outcomes and timeframes to all NAPPC members for comments and suggestions, and then reconvened to review the comments and to develop working plans.

In addition to the working group and task force sessions, the NAPPC participants welcomed distinguished guests from the US Congress, government agencies, and Mexican and Canadian Embassies at a tour and buffet reception at the US Botanic Garden. The buffet was unique in that all foods and beverages were derived from the pollinating efforts of the animals that made the foods and drinks possible. NAPPC argue that pollinators help put an estimated one out of every third bite of food on our table and play a role in the reproduction of virtually all flowering plants. With reports of pollinator decline coming from the Americas, Europe, Asia, Africa, and Australia, NAPPC aims to study and document pollinating animals to secure and enhance pollinator population health.

New World Grasses Receive Full Treatment in New Catalogue

On 28 October, **Paul Peterson** and **Robert Soreng** in association with several co-authors published the "Catalogue of New World Grasses" in the *Contributions from the United States National Herbarium* volumes 39, 41, 46 and 48 (1775 pages total), a complete treatment of all names, types, taxonomy, synonymy, higher classification, and distribution of New World grasses from Greenland to Tierra del Fuego. As a collaborative effort among the Smithsonian Institution, the Missouri Botanical Garden, Instituto de Botánica Darwinion in Argentina, University of Wisconsin, and UPIS-Faculdades Integradas in Brasil, the Catalogue brought together over 50 scientists on a 13-year project, culminating in the first true synthesis of nomenclature, taxonomy, and distribution of grasses for the entire Western Hemisphere. This data has already proven to be an invaluable starting point for countless research projects around the globe, and has been the subject of a recent symposium on the classification and biogeography of New World grasses at the Fourth International Symposium on Grass Systematics and Evolution (April 2003). The database is continually being updated and is available at <http://mobot.mobot.org/W3T/Search/nwgc.html>.

Medicinal Plants of the Guianas is Prepared

Robert DeFilipps, Shirley Maina and Juliette Crepin have prepared a manual entitled "Medicinal Plants of the Guianas (Guyana, Surinam, French Guiana)," with scientific names, synonyms, vernacular (common) names, medicinal utilization, chemical notes, and literature references for 170 families and 1,402 species of indigenous and introduced plants. The main emphasis is on ferns and flowering plants, although a few mosses, fungi and gymnosperms (*Gnetum*) are reported. The largest medicinal plant families are the Apocynaceae (43 taxa), Araceae (41), Caesalpiniaceae (51), Euphorbiaceae (58), Fabaceae (69), and Rubiaceae (54). For persons adhering to the modern trend of accepting Leguminosae as a single family comprising three large divisions, add 27 mimosoids to the 51 caesalps and 69 faboids, for a grand total of 147 taxa, making the "greater" Leguminosae the largest medicinal family in the Guianas.

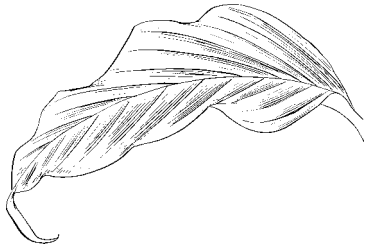
An introduction, glossary, bibliography of Guianan Amerindians and ethnobotany, medicinal index, common names index and species index are included. Third author Crepin is a natural resources specialist and phytochemical analyst with a patent in andiroba chemistry, and experience in French Guiana and the perfume chemistry laboratories of Yves Rocher, Nina Ricci, and Robertet, Paris. She is currently working with DeFilipps and Maina on medicinal plants of Myanmar (Burma) and previously assisted DeFilipps on a manual of "Selected Medicinal Plants of Haitian Vodou".

Incorporated in the manual is much original information from ethnobotanist Mark Plotkin's extensive researches among the Amerindians of southern Surinam (e.g., the Tirio and Wayana shamans), and from Guyanese ethnobotanist Suroojnauth Tiwari's major study of medicines of the Patamona, perhaps the least acculturated tribe of Guyana Indians. Plant remedies of the Saramaccan Bush Negroes of Surinam and the black Boni (pronounced "Bonny") people of French Guiana, as well as the Carib and Arawak Indians populating all three Guianas, plus many other tribes and the people of towns and villages, are also covered. The introduction discusses the influences of the former British, Dutch and French colonial heritage and plant interchanges between the Guianas and Europe with respect to some species used for medicinal purposes.

As one may expect, the range of diseases and afflictions that is treated by use of plants and herbal remedies in the Guianas is large. Just taking into consideration the plants specifically used only by women, with chemical properties affecting the female physiology, a diversity of plants (arranged in disease categories in the medicinal index) is used to alleviate the discomfort of pregnancy and in association with the easing of childbirth and later infant care; menstruation (dysmennorhea, hemorrhaging), abortifacients (juice of unripe pineapple is a widespread favorite), fertility and birth control plants, midwifery infusions, lactation, aphrodisiacs, and cosmetics (hair conditioners). Whether a *Ricinus communis* leaf tied around the forehead to treat a headache, or stem-exudate of *Iryanthera* cf. *hostmannii* (Myristicaceae) placed in the male genital orifice to relieve gonorrhea by the Tirio Indians of Surinam, the array of remedies extracted by Guianan Indians from the surrounding flora is formidable. And fortuitous, since many cannot afford the luxury of purchasing the pills, lozenges, syrups, drugs, pharmaceuticals and medications taken for granted as always available over-the-counter in advanced societies. The 568-page manual even indicates a few plants (*Lonchocarpus*, Fabaceae) used for the treatment of AIDS, and 10 hallucinogenic species.

The manual has been accepted for posting on the Website of the Smithsonian Biological Diversity of the Guianas Program, thanks to **Vicki Funk, Carol Kelloff** and **Tom Hollowell**. In the future, it will be appearing on the program's Guianas website located at <http://www.si.edu/biodiversity/bdg>.

"Medicinal Plants of the Guianas" has also been accepted for publication in book form by Reference Publications, Inc. (Algonac, Michigan), and will be a component of the "Medicinal Plants of the World" series, for which DeFilipps has previously co-authored and/or edited volumes on India and Brazil. The Guianas book will include line drawings by one Botany intern and two Smithsonian Behind-the-Scenes volunteer illustrators, with a fine suite of plants in the Loganiaceae and Menispermaceae used as ingredients in *curare* hunting poisons as well as having medicinal usage.



Microbiologist Contributes to Study on the Biodiversity of the Gulf of Mexico

Maria Faust has been invited to join a project on the Biodiversity of the Gulf of Mexico as part of a large initiative within the recently established Harte Research Institute for Gulf of Mexico Studies (located at Texas A&M University, Corpus Christi). The purpose of this tri-national collaboration, including the U.S., Mexico and Cuba, is to encourage and enhance the long-term sustainable use and conservation of the Gulf of Mexico. This initiative will be part of the Census of Marine Life program at the Consortium of Oceanographic Research and Education.

Faust attended a State of Knowledge Workshop held in Corpus Christi on 14-15 October. One of the group's challenges is to update the 1954 U.S. Fishery Bulletin volume entitled "The Gulf of Mexico - Its Origins, Waters, and Marine Life." It is anticipated that the original volume will be updated to three or four volumes, and include all current knowledge of biodiversity in the Gulf of Mexico.

A team of taxonomical experts will address varied taxonomic groups of marine organismal groups and intends to conduct a total inventory, including key references, habitat, and distribution for all species in the Gulf. Faust's contribution will be on the biodiversity of dinoflagellates. The gathered data will become part of a dynamic digital atlas of this large marine ecosystem, and it will be accessible over the Internet.

Adey Explores the Subarctic

Botany researcher and curator **Walter Adey** and his wife Karen, a Smithsonian Institution volunteer, have recently returned from a three month field session in the Canadian Subarctic. With a field team of six, the Adeys, two student/SI Fellow SCUBA divers and a volunteer cook and engineer, have been occupying rocky subtidal stations across the core northwest Atlantic Subarctic from the northern Gulf of St. Lawrence through southern Labrador and across the northeastern coast of Newfoundland.

During the summer 2003 field season, the team occupied 20 stations across the Subarctic. Each station consisted of a series of "thrown" quadrats, from low water neaps, at a series of standard depth levels, to the local depth limit of algae, up to 30 meters depth. At each of the quadrats, the divers first took digital photographs and then scraped or cut all the seaweed biomass, collecting it in plastic mesh bags. Although some station depths had water temperatures near 10ºC, many were in the 5 - 10ºC range and the deeper zones were often close to 0ºC. The divers had special training and equipment to be able to withstand heat loss during the time required to locate, denude and bag the algal samples from each quadrat.

The Adeys had spent three prior years constructing a specialized research vessel, the R/V "Alca i.," a long-range, 64 foot, 50 ton motor-schooner, to carry out this project. Equipped with a laboratory that would allow sorting, identification, biomass determination and voucher extraction of each species of seaweed, the vessel also provided inflatable dive boats, remote-location SCUBA facilities and living quarters for the crew. On its maiden voyage, the "Alca i.," while small enough to work close to a very rugged and often foggy and poorly-charted rocky coast, proved capable of handling frequent gales and providing crew comfort in cold waters.

This expedition was the first season of a five year project to determine the Subarctic/Arctic distribution of seaweeds based on species biomass rather than their presence or absence. Virtually the only information previously available on benthic marine species in the North Atlantic has been presence/absence at a very limited number of stations. Such data cannot account for microhabitats and minor seasonal and yearly fluctuations and had thus created a very confusing biogeographic picture.

Holding the Subarctic kelp *Saccorhiza dermatodea* in St. Anthony, Newfoundland, is (from left to right) Alok Mallick, graduate student and master diver; Erik Adey, first mate and engineer; April Bagwell, cook; Alex Miller, undergraduate student and diver; and Walter Adey. (Photo by Karen Adey)

In the late 1990s, Adey and his colleague Robert Steneck, Pew Professor at the University of Maine, had developed a theoretical global construct for coastal biogeography that was in significant disagreement with classical presence/absence models, mostly based on very limited geographical data. Using his specialty, crustose red algae of the order Corallinales, and the very large, ecologically quantitative collections of these algae in the US National Herbarium, Adey had been able to plot a picture of coralline distribution based on species area cover over the entire North Atlantic. This mass of distributional bottom cover data provided remarkable agreement with the theoretical model.

The Adey/Steneck mathematical/graphical model was the first serious attempt to bring together the complex of ecological and geological time factors widely accepted to be important in determining biogeographic regions in the coastal benthos. It has produced considerable favorable interest in the field. However, the model also demonstrates that presence/absence data have little value in determining biogeographic patterns. Thus, the field methodologies used by most phycologists in this field since the 19th century must be significantly advanced if further progress is to be possible. The current project is a first attempt to develop geographically-based quantitative data, similar to that for the North Atlantic corallines, for the whole suite of benthic seaweeds. This will allow the further examination of the relationship between the theoretical model and actual field distribution for the broader flora. In recent decades, most phycologists had discounted phytogeography as a tool for understanding late Tertiary/Pleistocene algal evolution and the geographic dispersal of species, as well as the patterns of Recent invasives. Adey feels that such pessimistic views are based on lack of adequate, quantitative field data. This project is dedicated to providing that data and to carrying out the analyses needed to demonstrate an exciting new role in evolutionary and ecological science for benthic phytogeography.

A Trip to Africa

Robert Faden and his wife Audrey Faden, a Master Gardener and Behind-the-Scenes Smithsonian Volunteer, spent four weeks in Africa and a week in England (29 August to 5 October). In Kenya he worked at the East African Herbarium, National Museums of Kenya, Nairobi on the family Commelinaceae for the *Flora of Tropical East Africa.* He also visited the Mpala Research Center in central Kenya where he collected plants and worked on a check list of the vascular plants of Mpala for posting on the station's website. A surprise bonus was finding a *Commelina* that is possibly a new subspecies of a central Kenyan local endemic species.

In Ethiopia the Fadens participated in the pre-congress trip to forests in the southeastern part of the country. This part of Ethiopia is home to Arabica coffee (*Coffea arabica*) which was seen growing wild at one locality. The six-day trip varied from 3,000 ft to over 10,000 ft in elevation. Black-and-white colobus monkeys were seen frequently as was a tremendous diversity of butterflies. A lot of forest was observed, but mainly on distant ridges. A few research plants of interest were encountered, including an undescribed species of *Commelina*.

During the second week in Ethiopia, Faden attended the XVIIth Congress of l'Association pour l'Étude Taxonomique de la Flore d'Afrique Tropicale (AETFAT), where he presented a paper entitled, "Orange-flowered species of African *Commelina* (Commelinaceae): are they all related?" The meetings were held at the United Nations headquarters in Addis Ababa. Faden also visited the herbarium of Addis Ababa University one morning and annotated some specimens.

In England Faden visited the Royal Botanic Gardens, Kew where he continued his research on African Commelinaceae.

Botanical Partners on the Mall Lecture Series

Last October, the Department of Botany, in collaboration with the United States Botanic Garden, kicked off the new "Botanical Partners Lecture Series." This quarterly lecture series will 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 will be hosted to promote discussion and exchange of ideas. The inaugural lecture, "The Lost Amazon - The Journeys of Richard Evan Schultes, Ethnobotanist" by Wade Davis, Explorer-in-Residence at the National Geographic Society, was presented on 16 October at the USBG Conservatory.

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

Tangerini

Continued from page 1

garden) published in 1845, as well as gleanings from his walks in the Paris Garden. After Rousseau's death an illustrated book showing 200 exotic animals, images that were the source of inspiration for many of the macaque monkeys, jaguars and lions in his drawings, was found hidden in a corner of his studio.

The art of botanical illustration has another cultural claim to fame, since one line drawing ushered in a new style of arts and crafts, the influential, if short-lived, Art Nouveau movement. In 1887 the Symbolist painter Gustave Moreau (French, 1826-1898) made a line drawing of a cut specimen of the South African red bird-of-paradise (*Strelitzia reginae*, Strelitziaceae), a flower that had been given to him by the outrageous aesthete of the Belle Epoque, Count Robert de Montesquiou (1855-1922). The count was a strong proponent in France, of the Art Noveau movement then emerging to the north in Scandinavia and England, and the drawing symbolizes the movement at its birth.

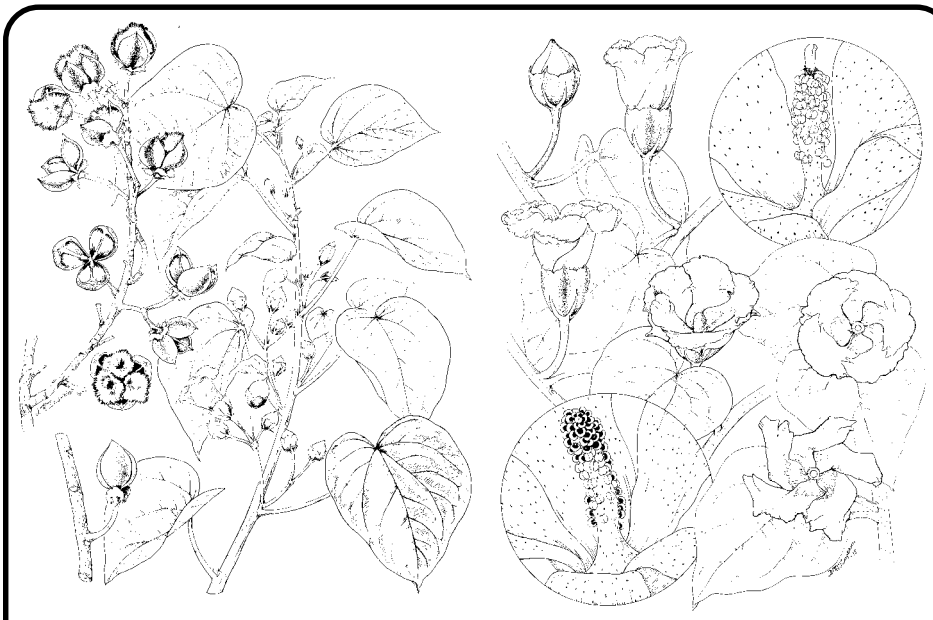
As Philippe Jullian noted in his 1965 biography "*Robert de Montesquiou: A Fin-de-Siècle Prince*" (page 55): "Art Nouveau owes as much to the sinuous lines of Salomé as to the entwinings of Sarah [Bernhardt]. One drawing kept with the hundreds in the Moreau museum shows this art at its inception. It is a drawing representing a strelitzia well set on its rigid stem. One might mistake the long black train of the pistil darting under the thick corolla for a cobra." The *Strelitzia* line drawing, shown as Plate 12 facing page 145 in Jullian's book, is thus one item in the collection of 5,000 drawings, sketches and working drawings in the Moreau Museum in Paris.

Several of the eighteenth-century botanical drawings of Maria Sibylla Merian, in vivid color, have been selected by botanists over the years to serve as the type specimen of species for which no original preserved plant (herbarium specimen) exists. That is the case for Merian's drawings of the "Barbados lily" (*Hippeastrum puniceum*, Liliaceae) and the cassava plant (*Manihot esculenta*, Euphorbiaceae). Yet we can more fully gauge the importance of botanical illustrations by realizing that Article 44.1 of the *International Code of Botanical Nomenclature* is a recommendation that, for flowering plants, an illustration of the differentiating characteristics of a new species, in the form of a detailed analysis of separate drawings of the critical plant parts, should be included with the publication of the species. For new species of algae, and newly described fossil plants, the Code makes it mandatory to publish an illustration, not just a recommendation to do so. These considerations help to fuel the requirements for the services of illustrators to document the appearance of species new to science.

In addition to drawing in her studio-office in the museum, Tangerini has sometimes traveled to make drawings. She once accompanied Helen Kennedy (Marantaceae specialist) to an Arawak Indian camp in Guyana to make color-pencil drawings in the field, and while visiting the University of California at Irvine in 1993, she made drawings of *Schiedea* (Caryophyllaceae) for a monograph of the genus by Curator of Pacific Botany, Warren Wagner. In 1996 and 1997 Tangerini was sent to the Lyon Arboretum in Manoa Valley, Hawaii, to make illustrations of living plants in the field, depicting representative species in the Order Zingiberales for W. John Kress.

Tangerini was a very early member of the Guild of Natural Science Illustrators (GNSI), which first started among staff illustrators in the Natural History Museum, and then grew into an international professional organization dedicated to communicating techniques that would benefit illustrators and provide an outlet for having their work exhibited. At the "Portugal 2000" international meeting of the GNSI, her work was exhibited in Evora, Portugal, just one of a number of venues where her art has been exhibited.

She also was a member of the



These two illustrations of *Lebronnecia kokioides*, one showing flowering and fruiting branches and the other a sequence of opening flowers, were reconstructed with Tangerini's own slides from her trip to Hawaii in 1978. It was at the request of Marie-Helene Sachet that Tangerini, if she should happen to visit the Allerton estate (now NTBG) in Kauai, should look for a "brown cotton tree" as it was a species that Sachet and F. Raymond Fosberg planned to include in a flora of the Marquesas. With the help of Allerton's tour guides the tree was located and photographed and the slides provided information to give a living appearance to the drawing. Unfortunately, the flora was never completed, and then with the death of Sachet and then Fosberg, Tangerini considered the unpublished drawings to be orphaned. Now, with the collaboration of Warren Wagner and David Lorence (NTBG) to pick up where the project left off, processing and incorporating information from Fosberg and Sachet's collections, it appears that the two illustrations will be published in a couple of years as part of the Flora of Marquesas project.

museum's Exhibits Committee for the exhibition entitled "Passion for Plants, Contemporary Botanical Art from the Shirley Sherwood Collection." The exhibition took place in the National Museum of Natural History in 2003, featuring a selection of contemporary botanical illustrations from the finest private collection of its kind in the world, which totals more than 460 works from over 27 countries. Shirley Sherwood, a great supporter of the Department, is a major catalyst for the worldwide revival of botanical art, and has championed the concept that, in her words, "Botanical art is the meeting place between the arts and the sciences."

Among Tangerini's responsibilities is management of the department's Botanical Art Collection, containing thousands of drawings archived in the Department, right down to those hanging on the walls of staff offices, some of which are by Margaret Mee, as commissioned by Lyman Smith. The Botanical Art Catalog is the online database inventory for staff use; set up by Ellen Farr in 1990, the database includes numerous search-fields such as: artist, date of drawing, client, and plant information including the species name, country of habitat, collector of the specimen which was drawn, all linked by an individual accession number for the drawing. The database includes most of Tangerini's drawings; some drawings by contractors have copyright restrictions and cannot be posted on-line. The public can access various illustrations of Cactaceae, Bromeliaceae and Melastomataceae by visiting the catalog website at <http://www.nmnh.si.edu/botart/catalog.htm>.

The Department is currently considering options and plans to establish a new Center for Botanical Art and Illustration, and you may be assured, Tangerini will certainly be drawn into it.

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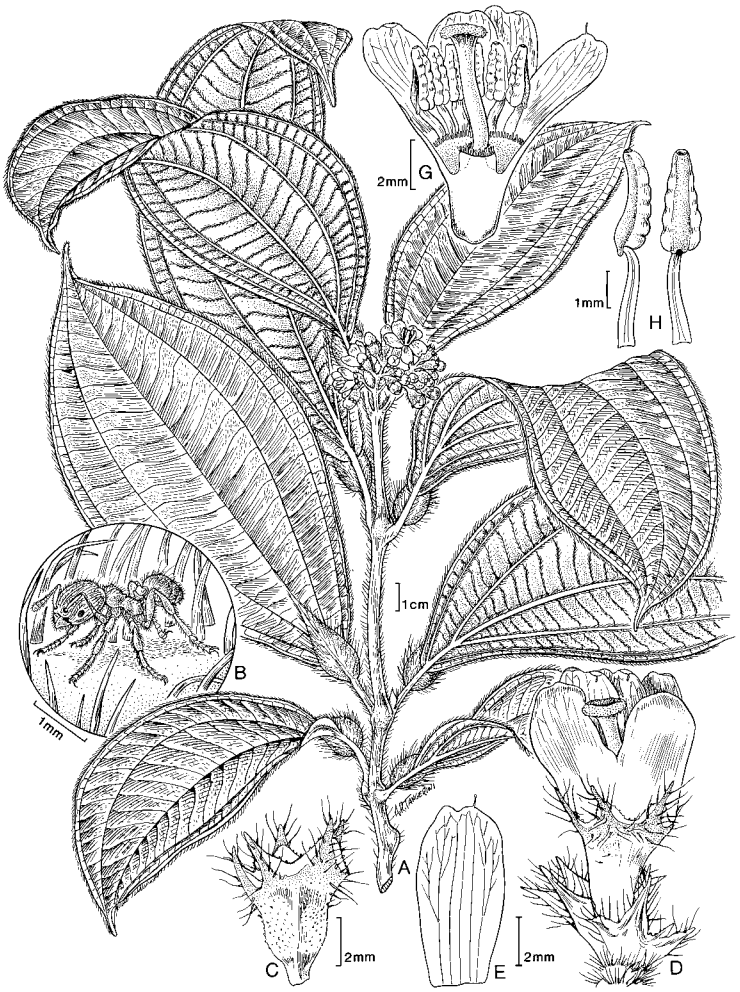
Art by Alice Tangerini

Clidemia ayangannensis Wurdack

Clidemia ayangannensis (Melastomataceae) was named by John Wurdack for the location of the type specimen on Mt. Ayanganna in Guyana. It was first published in *Brittonia*, Vol. 39(2) in 1987 and later in the Flora of the Guianas. The inclusion of the ant came after Tangerini observed many ants on the herbarium specimen and asked Wurdack as to the reason for their appearance. Wurdack said that the ants lived in the enlarged leaf bases, referred to as formicaria, of this *Clidemia* but he had not bothered to research which particular ant species. Tangerini was curious enough to bring the ants to Dave Smith (USDA Entomology) and have them identified as *Pheidole minutula* Mayr. With advice from Elaine Hodges, Tangerini depicted the ant as it would be seen amongst the leaf hairs adding a little animal life to a botanical illustration.



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