Department of Botany and the U.S. National Herbarium

The Plant Press

National Museum of Natural History
Smithsonian Institution

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Department Profile

A Prolific Asian Plant Corrector

By Robert DeFilipps

Dan Henry Nicolson is one of the world's foremost "plant correctors". While studying the true identity of an aroid from the insular periphery of Asia, the "Telinga potato" which was known for over a hundred years as *Amorphophallus campanulatus*, he unhesitatingly corrected its name to *A. paeoniifolius*. He also rescued, from a maze of generic uncertainty, one of the most well known of all houseplants, the variegated "pothos", and designated it as the cultivar *Epipremnum pinnatum* 'Aureum'. In fact, if it were possible to do so, this avid family genealogist would correct his own birthplace from the actual locus of Kansas City, Missouri, to the more affectionate town of Shenandoah, Iowa where he grew up, but that's another story.

The seeds of a nascent interest in botany surrounded him as a youth, for his family owned several seed and nursery companies in the Midwest, and his first educational venture was business school, in order to absorb techniques for involvement in the family's concerns. While enrolled in business school (MBA, Stanford University, 1957), a desire for botany which had originally surfaced at Grinnell College (AB, 1955) began to proliferate as various collections of cultivated plants were made, and culminated in a master's degree (1959) and doctorate (1964) from Cornell University. He joined the Department of Botany in the National Museum of Natural History in 1964, and his doctoral thesis, a revision of the Asiatic aroid genus *Aglaonema*, which includes the popular "Chinese evergreen" of horticulture, became the very first listing under the new series entitled *Smithsonian Contributions to Botany* (1969). Fast-forwarding to three decades beyond 1969, he was recently appointed by Chairman W. J. Kress to the position of managing editorship of the *Smithsonian Contributions to Botany.* With approximately 200 publications (including three books) under his belt, Nicolson's advice on botanical nomenclature is widely sought by an international clientele, and perhaps acknowledged in more taxonomic articles than that of almost any of his contemporaries.

Nicolson spent his honeymoon in 1959 at the International Botanical Congress in Montreal, Canada, and since the mid-1950s his career has always included a generous amount of devotion to the activities of worldwide botanical organizations. He served the International Association for Plant Taxonomy (IAPT) as an officer on numerous committees (e.g., Spermatophyta; Typification of Generic Names; Orthography; Bureau of Nomenclature; Awards; Nominations; Editorial Committee of the International Code of Botanical Nomenclature), and as nomenclature editor of the journal *Taxon* from 1979 to date. He was IAPT vice-president from 1985-1993, and is now in the last year of a six-year term as president of the IAPT, which began in 1993 when he was elected prior to the Tokyo Congress. In addition to those impeccable credentials, he has been intimately involved with the American Society of Plant Taxonomists, the Botanical Society of Washington, and the Flora Malesiana Foundation, and is a founding member of the International Aroid Society and the AETFAT (Association pour l'Etude Taxonomique de la Flore d'Afrique Tropicale).

Sessions of intensive field work in Southeast Asia (17 months); Nepal (1 year); Yunnan, China (3 months); Sri Lanka (1 month); India; Dominica (West Indies), and elsewhere paved the way for substantial publications with reference to the Flora of the Hassan District, Karnataka (India); Rheede's (1669-1698) Hortus Malabaricus; and the Flora of Dominica: Dicotyledoneae. Currently, Nicolson is completing a major project, initiated by Dr. F. Raymond Fosberg, documenting the publications and collections of the Forsters, a father-and-son team who accompanied the second voyage of Captain Cook, and whose work became a cornerstone of Pacific botany. Additionally, he intends to take a shot at preparing a revision of the Indomalaysian genus *Anadendrum* Schott, for publication in the venerable *Flora Malesiana*.

This year is already a very busy one for Nicolson, who is one of the ten members of the Steering Committee for the 1999 International Botanical Congress to be held in August in St. Louis, Missouri. A new set of rules and recommendations, the "St. Louis Code" of botanical nomenclature, will arise from the deliberations of the participants. Being

Continued on page 6

Visitors

Lars Peter Kvist, Royal Veterinary and Agricultural University, Copenhagen, Denmark; *Gasteranthus* (Gesneriaceae), plant extinction in Ecuador (Jan. 5-17).

Greg de Nevers, California Academy of Sciences, San Francisco; Flora of Madagascar (Feb. 2-Aug. 1).

Teresa Sholars, College of the Redlands, California; *Lupinus* spp. (Fabaceae) (March 5-6).

Sherrie McLeRoy, Historian; T. Munson collections (*Vitis* sp.) (March 9-10).

Ana Maria Suarez, Universidad de La Habana; Cuban marine macroalgae (April 1-30).

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Travel

Pedro Acevedo (12/14/98-3/1/99) traveled to Puerto Rico to conduct research and complete field work.

Mark and Diane Littler (12/14/98-3/10/99) traveled to the Smithsonian Marine Station at Fort Pierce, Florida and the Florida Keys to continue ongoing research.

Linda Moreland (1/11-1/16) traveled to Leesburg, Virginia to attend a Supervisory Management Training Course.

Deborah Bell (1/14) traveled to the Philadelphia Maritime Museum to evaluate their compactor ramp for possible use in the department's current compactor installation.

Vicki Funk (1/16-2/8) traveled to Stellenbosch, South Africa to attend and participate in the Inaugural Meeting of the Southern African Society of Systematic Biology (see related article in this issue), and to Raleigh, North Carolina (2/24-2/25) to meet with a graduate student committee at Duke University.

Laurence Skog (1/19-1/31) traveled to Paramaribo, Suriname to participate in the international Flora of the Guianas meetings and field trips.

Susan Richardson (1/28) traveled to the University of Maryland, College Park, to attend the Interstate Pest Control Conference.

Dieter Wasshausen (2/3-2/7) traveled to the New York Botanical Garden to examine Bolivian and Brazilian plant specimens, and to Jacksonville and West Palm Beach, Florida (2/13-2/24) for manuscript and photo consultations with Kirsten Llamas at the Fairchild Tropical Garden.

Warren Wagner (2/9-2/23) traveled to the University of California at Irvine, to research *Schiedea* (Caryophyllacae) with Steven Weller and Ann Sakai.

Robert Faden (2/14-3/13) traveled to London, England to study Commelinaceae at the Royal Botanic Gardens, Kew, in connection with work on the *Flora of Tropical East Africa*.

W. John Kress (2/16-3/5) traveled intermittently to Durham, North Carolina to teach a course on monocots at Duke University, and to Miami, Florida (3/13-3/19) to teach the same course at Fairchild Tropical Garden.

Paul Peterson (2/23-3/23) traveled to Lima and Tacha, Peru to collect grasses for ongoing research.

Paula DePriest (3/11) traveled to Annapolis, Maryland to attend a joint meeting of the Potomac and Northeastern Divisions of the American Phytopathological Society, on the theme of "Bridging Technology Gaps in Education and Research", at which she presented a lecture and contributed a poster.

Editors' Note

As of this issue (New Series, Vol. 2, No. 1, April - June 1999), *The Plant Press* will be published on a quarterly basis.

Correction

In the article on the "Revised Checklist for the Flora of Myanmar" which appeared in issue no. 6, we inadvertently forgot to mention that **Ida Lopez** is a member of the checklist preparation team.

The "I" Words

Chair With A View — W. John Kress

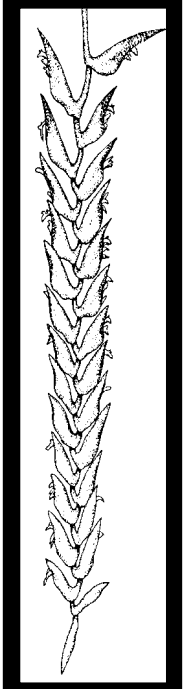
Integration of science and Interdisciplinary research. The "I" words. What do these terms mean, and are they important in our work? Open any copy of *Science* or *Nature* and there will be at least some mention of how we as scientists need to integrate our disciplines. Such integration clearly may occur at many different levels, for example, between the natural history disciplines of zoology and botany, or between the scientific disciplines of biology, chemistry and physics, or even between the intellectual disciplines of science, politics and economics. Is the degree of integrative success proportional to the level of interdisciplinary collaboration? In other words, if I publish with an economist, will the scientific impact be greater than if I publish with a mammalogist? Two important questions present themselves: Are we sufficiently trained to conduct such integrated science? And Why is interdisciplinary research better?

In a recent editorial in *Science* (283: 642-643. 1999), Norman Metzger and Richard Zare argue that the basic history, culture and structure of science in America has developed to hinder interdisciplinary research. Specialization and disciplinary expertise is demanded from us from the time we are trained as graduate students, through tenure-track pursuits, and every time we apply to directed funding agencies for research support. Throughout our careers truly integrated science is discouraged. The editorial presents a cold view of the struggle that exists if one is to successfully accomplish anything that cuts across the disciplines, although some solutions to overcome these barriers are suggested, such as creating a Federal funding program owned by several disciplines together.

Is the call for integrated science a realization that each of our disciplines has come to an end, that we have discovered all we can in each of these individual lines of research, and that our only future now is to cut across these boundaries? Obviously not; since clearly much remains to be observed, described and understood in nature, whether it is discovering a new beetle from Peru or a new subatomic particle. More importantly, the new drive to integrate is based on the realization that nothing exists in isolation, that the planet is growing smaller, and that the solutions to global problems are embedded in a larger view of interactions that can only be understood by an integrated approach to science and society.

Do we need to return to the concept of the Renaissance intellectual who studied, understood, and published on art, nature, government and economic growth? No, very few of us can have the individual breadth to comprehend all of these disciplines in the depth that is required to be successful. Rather, each of us needs to develop an integrated perspective on what we do as individual scientists in our respective disciplines and open up our research to the possibility of collaborative programs. Integrative research is as much a state of mind as a level of knowledge. We must recognize that although we are not experts in all aspects of science, we are willing to share our knowledge across disciplines. We can acknowledge that we know our own fields, but must risk the fact that we are ignorant outside these boundaries. It may likely require an entire generation of scientists to make the transition from a disciplinary to an interdisciplinary perspective.

It is clear that the transition has begun. As scientists at the end of the millenium, we must allow this perspective into our contemporary research programs and promote integration as a fundamental part of the training of our young scientists.



Herbarium Compactorization Update

Compactorization of the first two bays of the U.S. National Herbarium was officially completed at the beginning of February 1999. This area represents about one-tenth of the herbarium. Compactorization provided space for an additional 128 specimen cabinets, increasing storage within those areas by 36%. This will allow for sorely needed decompression of existing collections and will provide expansion to take the herbarium into the 21st century. Progress on the next two bays (adjacent to the west side of those finished) is well underway regarding blueprints and contracts. Actually demolition and construction will not begin for several months.

Staff Research

Vicki Funk was recently elected a member-at-large of the Board of Directors (1999) of the American Institute of Biological Sciences.

On December 2, 1998 **Gene Rosenberg** presented the President's Address at the 1998 Annual Dinner of the Botanical Society of Washington. The title of his talk was "Cuban Reds (Rhodophyta) — Green and Brown Algae, Too". On January 20 Rosenberg presented a talk about biodiversity of Cuban macroalgae to the staff of the Center for Marine Conservation (CMC) in Washington, D.C. The meeting at CMC provided the occasion for a stimulating discussion about the status of marine biodiversity studies in Cuba and the role of U.S. conservation and research institutions, including the CMC and the Smithsonian Institution.

On March 9, Rosenberg**, Mark and Diane Littler, Barrett Brooks**, and A.M. Suarez presented a talk entitled "Biodiversity of Marine Algae in Cuba" to the conference on "Knowing Each Other Without Borders", sponsored by the Department of Anthropology, the Center for Latino Initiatives, and the Latino Working Group, which featured Smithsonian research on Latin American and Latino themes.

Two post-doctoral students of **Paula DePriest**, M. Sikaroodi and M.D. Piercey-Normore, presented posters on, respectively, "Phylogenetic Analyses of Lichenicolous Fungi" and "Molecular Markers for Virulent Species of *Armillaria* in North America, and Primer/template Dynamics", at a meeting of the American Phytopathological Society held March 10 in Annapolis, Maryland.

Vicki Funk and **W. John Kress** fulfilled their roles as adjunct professors of botany at Duke University by team teaching a course on "Angiosperm Phylogeny and Classification" this spring. Together with Dr. Paul Manos at Duke, they spent time in residence in Durham lecturing in this graduate level course. As part of the course they will be taking the students for a week to the Fairchild Tropical Garden in Miami to experience some of the tropical plant taxa first hand. The course is part of the Duke-Smithsonian Program in Systematic Biology. Funk, Kress, **Paula DePriest**, **Liz Zimmer**, and David Swofford all are involved in lecturing and advising students enrolled in the Duke Graduate Program.

W. John Kress was an invited speaker at both Miami University in Oxford, Ohio, and George Washington University in Washington, D.C. He presented the results of his recent work on the "Evolution and Diversification of Pollination Systems in the Monocotyledons".

Alice Tangerini is currently entering the drawings from Lyman B. Smith's monographic treatment of the Bromeliaceae into the Botanical Art Database. With the help of volunteers Maxine Schein and Mariah Steinwinter, over 60 entries have been made, out of an estimated 450 illustrations. With each entry, the drawings must be mounted on archival boards, repaired if necessary, and labeled. Difficulties can arise from the fact that none of the drawings are signed, and they have been cut and pasted from other original drawings dating back to Lyman Smith's days at the Gray Herbarium (1940's). Many of the drawings are done either by Smith (dating back to 1940), or his co-author Robert Jack Downs, or by Alice Tangerini. Drawings done by other artists are included in the treatment and not named, and since almost every drawing was completed before Tangerini came on staff, there is no record of artist or date. There are, as well, potentially several artists per plate, with only visual distinction in style as a means to determine the identity of the artist. Add to this quandary the inclusion of up to 20 species per plate, and each entry becomes a research project. Tangerini is now conferring with Jack Downs at North Carolina State University on deciphering the artist identification problem.

The Pteridophyte Collection: A Century of Progress

A milestone in the history of the U.S. National Herbarium was passed on January 9, 1999. It marked a century of continuous curation of the pteridophyte collection. William R. Maxon was appointed an aid in cryptogamic botany and entered on duty on January 9, 1899. He had been a student at Syracuse University and had spent a post-graduate year at the New York Botanical Garden with their pteridologist, Lucien M. Underwood. Unfortunately, he suffered a heart attack in 1931 and was in declining health until his retirement in 1946. He died in 1948.

Conrad V. Morton came to the Smithsonian in 1926 to be in charge of western United States, Central American, and Antillean flowering plants. Ater Maxon's heart attack, Morton devoted the greatest part of his time to the pteridophytes, although he continued research in tropical American Gesneriaceae and Solanaceae. He had a series of heart attacks beginning in 1961 and died in 1972, while still an active member of the staff.

David B. Lellinger spent two summers as a aid in botany in 1960 and 1961 and was made a permanent member of the staff in 1963. Since 1998, he has been assisted by **Gregory S. McKee**. All three curators were variously active in identification, curation, and field work. This constant attention built the collection into the largest and most diverse pteridophyte herbarium in the hemisphere.

At present, the collection is estimated to exceed 250,000 specimens, and it occupies 151 herbarium cabinets, including six cabinets containing type specimens; more cabinet space is needed. In addition to herbarium duties, Dr. Maxon served for many years as head curator of what is now the Department of Botany. All three curators of the pteridophytes held positions in the American Fern Society for long periods, notably as editor-in-chief of the *American Fern Journal*, and variously as president, secretary, membership secretary, or associate editor of the journal.

[*By David Lellinger]*

South Africa Report

Vicki Funk recently returned from a month in South Africa. During the first six days (January 17-22) she attended the Inaugural Meeting of the Southern African Society of Systematic Biology at the University of Stellenbosch outside of Cape Town. The meeting was important for several reasons. Firstly, as president of the Society of Systematic Biologists (based in the USA), Funk was interested in helping to launch the new "sister society." Secondly, there is a move underway to organize all interested systematic organizations into an "International Federation of Systematic Societies", and this topic was on the agenda of the meeting. Thirdly, Funk presented a paper using the Smithsonian's Biological Diversity of the Guianas Program as an example of an interaction between systematics and conservation.

The final reason for the South African trip was that the country is a wonderland of composites ("comps"), with over 2000 species and around 85 endemic genera occurring throughout a vast area. While many tribes of the Asteraceae have radiations in South Africa, there are two that have their major diversification there, Arctoteae and Calenduleae.

After the conference, Funk went into the field for six days on a trip organized by the herbarium at the University of Cape Town. The trip covered most of the Western Cape. She spent time in five nature reserves, namely Cape of Good Hope; Fernkloof; De Hoop; Grootvadersbosch; and Table Mountain, and also visited the Karoo Botanic Garden and the West Coast National Park. Hundreds of plants new to the traveler were examined and photographed, and five of the seven endemic families were located.

Following the extensive field trip, Funk took ten days off and visited several private game reserves to look at animals. She went to Pelansberg, Mt. Anderson, and near Kruger Park, and saw all sorts of mammals including the "big five" (rhino, elephant, buffalo, leopard, lion), and even collected a *Vernonia* for **Harold Robinson** a few feet from a sleeping lion (when lions are full they are a lot like plants). Meanwhile she saw four of the "little five" species (leopard tortoise, rhino beetle, elephant shrew, spotted antlion), though failed to observe the buffalo weaver. She even saw an aardwolf, but failed to find an aardvark. During the entire trip, Funk saw nearly 200 species of birds (all new to her), most of them having the scientific epithet "*capensis*".

Returning to Cape Town, Funk stayed a few days to represent the Smithsonian at the Species Plantarum meeting hosted by the Kirstenbosch Botanic Garden, and then returned home on February 12, having made the acquaintance of many new colleagues, and full of plans for new projects and collaborations.

Publications

Borgen, L., W. Greuter, D. H. Hawksworth, **D. H. Nicolson** and B. Zimmer. 1998. Proposals to implement mandatory registration of new names. *Taxon* 47: 899-904.

Chaloner, W. G., W. Greuter, **D. H. Nicolson** and A. Traverse. 1998. Proposals regarding the nomenclature of fossil plants. *Taxon* 47: 907-910.

DeFilipps, R.A. 1998. A digression upon James Taplin, *Nepenthes* hybridizer (Nepenthaceae). *Carnivorous Plant Newsletter* 27(4): 104-107.

DePriest, P. T. and B. W. Hale. 1998. New combinations in the parmelioid genera (Ascomycotina: Parmeliaceae). *Mycotaxon* 67: 201-206.

DePriest, P. T. and B. W. Hale. 1998. A validation and a nomenclatoral change in *Parmotrema* (Ascomycotina: Parmeliaceae). *Mycotaxon* 67: 207-209.

Dorr, L. J. 1998. John J. Wurdack (1921-1998). *Taxon* 47(4): 971-973. [Obituary]

Faust, M. A. and K.A. Steidinger. 1998. *Bysmatrum* gen. nov. (Dinophyaceae) and three combinations for benthic scrippsielloid species. *Phycologia* 37: 47-52.

Jenny, M., C. Bayer and **L. J. Dorr**. 1999. *Aethiocarpa* reduced to *Harmsia* (Malvaceae, Dombeyoideae). *Taxon* 48(1): 3-6.

Kelloff, C.L. and **V.A. Funk**. 1998. *Preliminary Checklist of the Plants of Kaieteur National Park, Guyana.* 99 pp. Smithsonian Institution and University of Guyana, Washington, D.C.

Kelloff, C.L. and **G.S. McKee**. 1998. A new species of *Hecistopteris* from Guyana, South America. *American Fern Journal* 88(4): 155-157.

Nicolson, D. H. 1998. Plants named for George Forster and/or his father, Johann Reinhold Forster. Pp. 193-200. *In*: Mathew, P. and M. Sivadasan (eds.). *Diversity and Taxonomy of Tropical Flowering Plants*. Mentor Books, Calicut, India.

Nowicke, J. W. , M. Takahashi and G. L. Webster. 1998. Pollen morphology, exine structure and systematics of Acalyphoideae (Euphorbiaceae), Part 1. Tribes Clutieae (*Clutia*), Pogonophoreae (*Pogonophora*), Chaetocarpeae (*Chaetocarpus*, *Trigonopleura*). *Review of Palaeobotany and Palynology* 102: 115-152.

Nowicke, J. W., M. Takahashi and G. L. Webster. 1999. Pollen morphology, exine structure and systematics of Acalyphoideae (Euphorbiaceae), Part 2. Tribes Agrostistachydeae (*Agrostistachys*, *Pseudagrostistachys*, *Cyttaranthus*, *Chondrostylis*). *Review of Paleobotany*

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Publications

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and Palynology 105: 1-62.

Perry, G. and **D. H. Nicolson**. 1998. Nine proposals to amend Art. 60 of the Code. *Taxon* 47: 933-934.

Pruski, J. F. 1998. Compositae of the Guayana Highland-XIII. New combinations in *Conyza* (Astereae), *Praxelis* (Eupatorieae), and *Riencourtia* (Heliantheae) based on names proposed by L.C.M. Richard. *Brittonia* 50: 473-482.

Robinson, H. 1998. Two new species of *Lepidaploa* (Vernonieae: Asteraceae). *Phytologia* 84(1): 40-42.

Stenroos, S. and **P. T. DePriest**. 1998. Small insertions at a shared position in the SSU rDNA of Lecanorales (lichen-forming Ascomycetes). *Current Genetics* 33: 124-130.

Stenroos, S. and **P. T. DePriest**. 1998. SSU phylogeny of the cladoniiform lichens. *American Journal of Botany* 85: 1548-1559.

Plant Corrector

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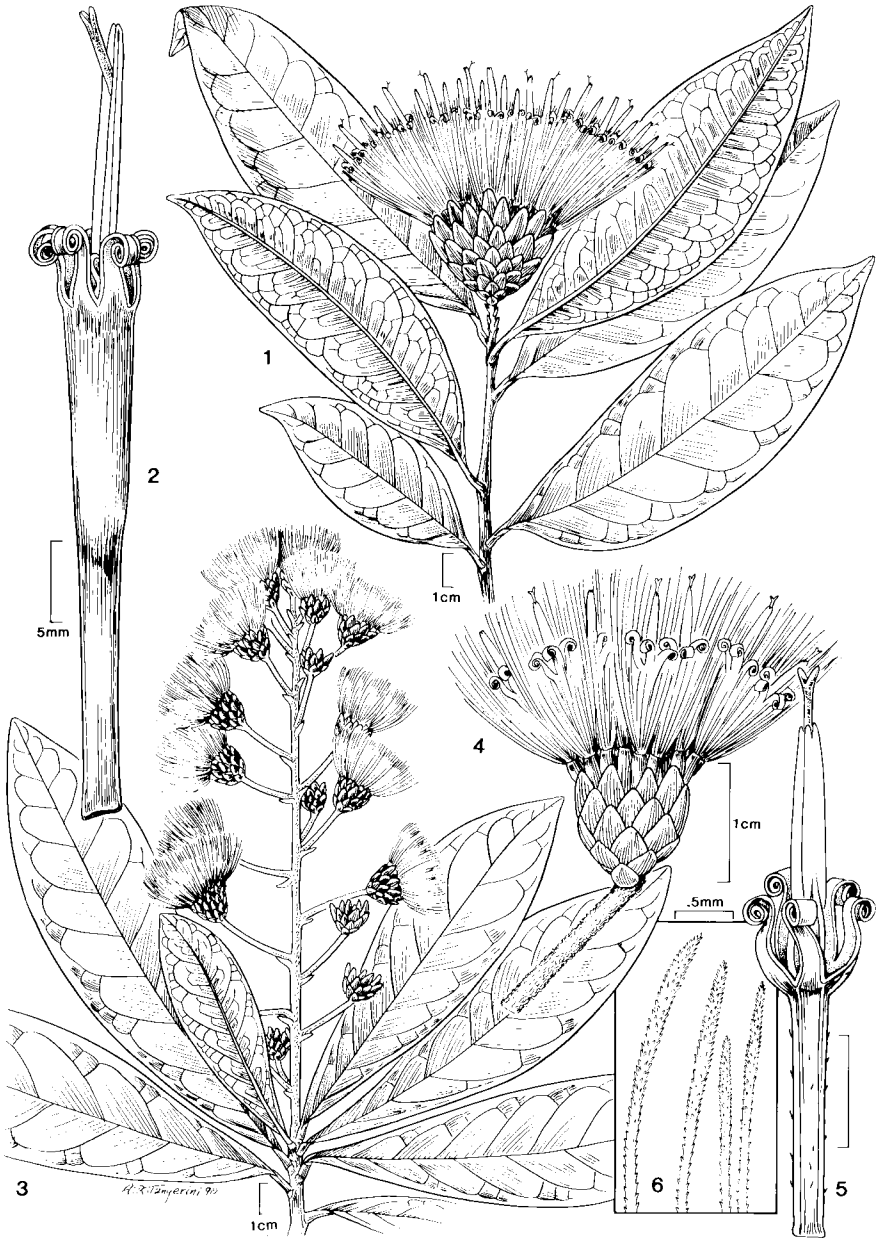
the adroit master of technicalities that he is, Nicolson seemed disinclined to register any speculations about the ultimate fate of the major issues before the Congress, and in deference to his office I refrained from asking.

In a curious twist of fate, as the unofficial necrologist of the department, sooner or later the meticulous talents of Dr. Nicolson may be summoned to prepare the last written statements concerning the careers of some of us who at this moment are reading the details of his accomplishments.

Art by Alice Tangerini



Stifftia chrysantha H. Robinson (Figs. 1, 2) and *S. racemosa* H. Robinson (Figs. 3-6) (Asteraceae) were published in *Systematic Botany* (1991). Discovery of *S. racemosa* as a distinct species was made by Alice Tangerini upon examining the racemose form of the inflorescence. *S. racemosa* is probably extinct in its native Minas Gerais state of Brazil, where the holotype was collected by Mendes Magalhaes in 1941. The illustration is currently on display at the Botanical Illustrators Art Exhibit at the Blandy Experimental Farm of the State Arboretum of Virginia located in Boyce, Virginia, which runs from March 12 -April 7.