Volume 6, Number 2 Apr-May-June 1992

Nancy R. Morin and Judith M. Unger, co-editors

# FLORA OF NORTH AMERICA NEWS

# Ferns Finally Finished! VOLUMES ONE and TWO TO PUBLISHER

Pteridophyte treatments, in 990 double-spaced pages, with 486 distribution maps of species, subspecies, or varieties, were mailed to Oxford University Press on 28 May 1992, completing Flora of North America Volume 1. The pteridophyte team (Nancy Morin, taxon editor, and Alan Smith and Herb Wagner, special pteridophyte advisors) reviewed and edited for many hours. Special effort was made to make the generic treatments in large families as parallel as possible. Reticulograms were developed, under Herb Wagner's direction, for genera with hybrid complexes.

**Volume Numbers Change** - Kirk Jensen, Oxford University Press (OUP) Science Editor, proposed that the Introductory Chapters be published as Volume 1 and the Pteridophyte and Gymnosperm treatments as Volume 2 because the amount of manuscript material submitted as Volume 1 was over 2250 pages double-spaced. The editorial committee agreed to this plan. All appropriate changes are being made in the volumes and database. Revised lists of volume numbers and due dates appear on page 10 of this newsletter.

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Asteraceae Editors Meet - Ted Barkley, Luc Brouillet, and John Strother, taxon editors for the Asteraceae volume, met in St. Louis for three days in mid-July to discuss procedures for processing manuscripts, to clarify circumscription for some groups in the family, and to identify potential authors. All did extra duty on preparation for Volumes 1 and 2 during the past several years, so it is a sign of real dedication that they are ready to begin work on the last volume of treatments.

**Procedural Information** for authors of FNA treatments - If you have been asked by a member of the Editorial Committee to write a treatment, that is a preliminary step to the official invitation. You may, of course, begin your research immediately for the taxa involved. (1) Dr. Nancy Morin will write an official invitation letter to you after the specific taxon (family) editor gives your name to the Organizational Center and the editorial committee approves the suggestion. (2) Please respond to Dr. Morin's invitation by writing to her at the Organizational Center indicating your willingness to write the treatment(s), even if you have already somehow conveyed that information to the taxon editor. These steps (items 1 and 2) will ensure that you are correctly tagged in our database and that you receive the Guide to Contributors with all related materials. After these initial formalities are completed, you will direct your questions and comments about the treatments to the taxon editor, to whom you will eventually send the completed manuscript.

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Gerald Straley, FNA's Polygonaceae editor, is seeking authors for <u>Polygonum</u> and <u>Rumex</u>. If you are interested in writing these treatments, or know someone who is qualified, please contact Dr. Gerald Straley, Botanical Garden, University of British Columbia, 6804 S.W. Marine Drive, Vancouver, British Columbia V6T 1W5, Canada.

The Flora of North America (FNA) project is a cooperative program to produce a Flora of the plants of North America north of Mexico. The FNA Newsletter is published quarterly by the Flora of North America Association to communicate news about the FNA project and other topics of interest to North American floristic researchers. Readers are invited to send appropriate news items to: FNA Newsletter, P.O. Box 299, St. Louis, MO 63166, U.S.A.

# Schedule for manuscripts, including distribution maps and suggestions for illustrations, to be to the Taxon Editors by <u>January 1</u> of the year indicated:

**Notice to authors** - Please check these dates carefully for a possible change from the date given in the invitation letter. We are always happy to accept manuscripts ahead of deadline! Taxon editors will request generic descriptions and other general information earlier for the larger families.

# New volume numbers and contents

1	Introductory Essays	1990	
2	Ferns and gymnosperms		1990
3	Magnoliidae and Hamamelidae		1991
4	Caryophyllidae		1994
5	Dilleniidae		1995
6	Rosidae in part, including Fabales		1996
7	Rosidae remaining orders		1997
8	Asteridae in part - Gent., Solan., etc.	1998	
9	Asteridae in part - Scroph., Camp., etc.	1999	
10	Asteraceae		2000
11	Monocots except Poaceae		1992
12	Poaceae	1997	
13	Bryophytes		1996
14	Comprehensive bibliography and index	2000	

# New volume numbers in chronological order with due dates

1	1990	13	1996
2	1990	12	1997
3	1991	7	1997
11	1992	8	1998
4	1994	9	1999
5	1995	10	2000
6	1996	14	2000

Authors, reviewers, and editors are encouraged to copy this information and post wherever needed. This information will also be included in the newly-revised Guide for Contributors, which will be mailed to all **confirmed** authors and reviewers in the next two months. If you do not receive the updated version, please let the Organizational Center know.

The Contributors Guide is being revised in light of what was learned writing Volumes 1 and 2. Some aspects are being expanded and clarified, other aspects are now consolidated. Helen Jeude, technical editor, and Bruce Parfitt, assistant scientific editor, are coordinating this effort. Some

Editorial Committee members will review it before publication.

**FNA ITEMS AVAILABLE** - FNA **pamphlets**, newly revised, are available upon request.

FNA items for sale having the FNA name and logo include:

white <b>T-shirts</b> , all cotton, L and XL	\$8		
wheat or green coffee mugs		\$6	
cloisonne lapel pins			\$4
white painters caps	\$2		
wheat or white rectangular buttons			
with habit drawing of the logo plant		\$1	

If you would like us to mail them, add \$2 each (for T-shirts and mugs) for postage and handling, all prepaid please.

# **Editorial Committee News**

The spring Flora of North America Editorial Committee meeting was held 30-31 May 1992 in Montreal, Quebec, hosted by Luc Brouillet. Topics discussed by the entire committee on Saturday included items from the Contributors Guide that need to be clarified, and suggestions for improvement of the manuscript-review process. Some specific topics were variation in level of treatments, need for borrowing from small herbaria and those peripheral to distribution of specific taxa, terminology, keys, maps, and illustrations.

The Bryophyte editors met separately for most of Sunday to discuss identification of potential authors, and variations needed in the Guide to Contributors for that volume, including a sample treatment.

Sunday's topics for discussion by the vascular plant editors included the status of the next volume's manuscripts (all outstanding manuscripts are past due and should be sent to the Organizational Center as soon as possible) including distribution maps and suggestions for illustrations. Taxon editors reported on families for which they are responsible. This group broke into two smaller groups for the afternoon. One group, the taxon editors for Volume 3, discussed details of reviewing and editing manuscripts. The other group brainstormed on potential authors for subsequent volumes.

The two-day meeting concluded with a tour of the almost-completed Biodome. The Biodome, across the street from the Montreal Botanical Garden, is the Velodrome from the 1976 Olympics and is next to the Olympic Stadium. Mr. Pierre Borque, the director of the Garden, gave the group a guided tour through the four major ecosystems represented under one roof: tropical rainforest, Laurentian forest, St. Lawrence Marine ecosystem, and polar world. The Biodome contains an amazing representation of both plants and animals from these areas.

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**Dale H. Vitt** has been appointed Director of the University of Alberta Devonian Botanic Garden. The Garden, occupying 190 acres of land just west of Edmonton, is associated with the Department of Botany. It houses the second largest Microfungus Collection and Herbarium in Canada and

the eighth largest in the world. This collection (UAMH) contains over 7100 living and dried specimens of filamentous fungi. Using techniques that ensure genetic stability, UMAH maintains a large and unique collection of medically important fungi, as well as those relevant to agriculture, forestry, and industry. The curator of this collection, Lynne Sigler, maintains an on-line database of the holdings and distributes cultures to government agencies, academic institutions, and industry worldwide. The Institution's address is: Devonian Botanic Garden, University of Alberta, Edmonton, Alberta, Canada, T6G 2E1; Phone: 403/987-3054; Fax: 403/987-4141.

Vitt, also on the FNA Editorial Committee-Bryophyte group, continues to be Curator of the Cryptogamic Herbarium of the University of Alberta, currently with approximately 255,000 specimens of bryophytes, lichens, and macrofungi. Randall Bayer is curator of the Vascular Plant Herbarium, with about 160,000 specimens. John Packer, Professor Emeritus at University of Alberta, is also on the FNA Editorial Committee.

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**Luc Brouillet** at the Jardin Botanique, the University of Montreal, is on sabbatical this year and is doing research both in the field and at various herbaria. During August he is doing field work in northern Newfoundland with A. Bouchard and S. Hay. In September he will be at Rancho Santa Ana Botanical Garden in southern California.

An exposition is being held at the Montreal Botanical Garden Herbarium to illustrate the usefulness of herbaria in today's science. It will continue until 23 August.

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**Undergraduate Internships for Flora of North America** - Flora of North America has received supplemental funding from the National Science Foundation to support two undergraduate interns in 1992-1993 at Missouri Botanical Garden. Internships are available for Fall, Winter, and Spring terms. Interested undergraduates who have had courses in basic botany and plant taxonomy should send a résumé and name and telephone number of their undergraduate advisor to Flora of North America, Missouri Botanical Garden, P. O. Box 299, St. Louis, Missouri 63166. Candidates will be notified about their acceptance as soon as possible. Women and minorities are encouraged to apply.

# **COMPUTER NEWS**

A database of Native North American Food Plants - I am creating a database intending to publish the material in a form similar to my earlier work, *Medicinal Plants of Native America*. If you are aware of any useful primary material, either published or unpublished, I would deeply appreciate hearing from you about it. I will also probably catalog other ethnobotanical information on drink plants, smoking plants, fiber plants, etc. Please contact **Daniel E. Moerman**, UM-Dearborn, Dearborn, Michigan 48128 USA; Ph: 313/593-5016; or Fax: 313/593-5552; Bitnet: USERK3ZE@UMICHUM.

# PUBLICATIONS

**Index of Mosses 1963--1989** by Marshall R. Crosby, Robert E. Magill, and Cheryl R. Bauer. Volume 42. This work is a guide to the names published for mosses, including all new taxa from the rank of genus and below. Entries include full references to places of publication, and, depending on the nature of the name, listings of basionyms, replaced names, and types. The Index for 1963--1989 lists about 8500 names and contains appendices giving full authors' names and fully-spelled journal and book titles with reference to their entries in TL-2 and B-P-H. 656 pages, hard bound. \$25.00. To order, send check or money order in U.S. funds, payable through a U.S. bank, to Missouri Botanical Garden, Department 11, P.O. Box 299, St. Louis, Missouri 63166-0299. Postage U.S. shipments: add \$2.00 for one volume and \$.75 for each additional volume; non-U.S. shipments: add \$3.00 for one volume and \$.75 for each additional volume. Orders must be prepaid. A \$1.00 fee will be added to orders requiring an invoice.

## NEWS AND NOTES

Successful New England Plant Conservation Program Prototype for Other Regions - This summer and fall Bill Brumback, Conservation Director of the New England Wild Flower Society (NEWFS), will travel from the top of Mount Washington to the sandplains of Block Island collecting seeds of up to 40 of New England's rarest plants as part of the New England Wild Flower Society's New England Plant Conservation Program (NEPCoP).

In 1992 NEWFS launched NEPCoP, the <u>first regional</u> plant conservation initiative in the United States. The program works with 63 major public and private conservation and land preservation organizations in New England with the goal of protecting all of that region's endangered plants by the year 2000. State task forces that review plant endangerment annually and determine priorities for collection are the heart of the program. A Regional Advisory Council oversees policy and all regional elements. Emphasizing habitat preservation as the primary method of conservation, NEPCoP also includes a seed banking program and cultivation research as a back-up in the event of catastrophe in the wild.

At the policy level, NEPCoP provides a forum for discussion of plant conservation and aims to develop consistent policies in different states regarding such issues as taxonomy, habitat management, determination of rarity, and reintroduction of endangered plants. All of these important topics were discussed at an open symposium on 21 March at Bentley College in Waltham, Massachusetts, co-sponsored with the New England Botanical Club.

By collecting seed from and propagating plant species that are rare or endangered at the state level, NEPCoP broadens conservation efforts in New England. This off-site or "ex situ" conservation is widely accepted on an international level as an adjunct to protection of plants in wild. However, it is intended to supplement, not supplant, the protection of plants in natural areas. In 1991 NEPCoP's goal was to collect seed of 5 to 10 endangered plants in each state, and Brumback collected seed of 54 species by year's end.

According to Brumback, "We anticipate that propagation and cultivation research will provide valuable information that can be applied to the understanding and management of wild populations. Plants produced are grown in the nursery at the Garden in the Woods, the botanic garden of the New England Wild Flower Society, and will eventually be placed in a Rare Plant Garden which will hold the collection of New England's rare and endangered species as a genetic resource and, importantly, for the education of the public."

By addressing plant endangerment at the regional level, NEPCoP provides a bridge between federal/national program and state plant endangerment program. For example federal/national programs are the last defense against plant extinction, but in 19 years the federal process has listed only 300 plant species--less than 10% of the numbers which various national authorities have cited as being "of concern." On the other hand, states that are the first line of defense only address plants within their political boundaries. Of New England's 2000 native plant species, 500 are endangered in one or more states. NEPCoP gives first priority to plants that are endangered throughout their range in New England, but also attempts to collect species that may be important elements of the national heritage of a particular state. Thus, species that are common outside of New England, but on the edge of their natural range (and thus rare in a particular state) receive consideration for collection.

Funding of NEPCoP has been through private donations and grants. Since 1990 nine foundations and New England Wild Flower Society members have provided over \$500,000 to initiate the program. Fully funding NEPCoP is expected to take 10 years and cost \$10,000,000.

With the seeds of many of last year's priority plants already germinating, Brumback is satisfied with the initial progress of NEPCoP. However, he explains the challenges ahead include "deciding which species are in fact endangered throughout New England (the last list was published in 1981), collecting from enough populations to get a good representation of the genetic variability associated with each species, determining the best germination and seed banking procedures, and developing methods to alert the public to our disappearing plant heritage."

The New England Wild Flower Society, which acts as catalyst and administrator of the New England Plant Conservation Programs, is the oldest native plant conservation organization in the United States and the only regional native plant society. Headquartered in Massachusetts, the Society promotes the conservation of temperate North American flora through horticulture, education, research, habitat preservation, and advocacy. In 1984 the Society was one of the two original institutional sponsors of the national Center for Plant Conservation (CPC), and the Garden in the Woods, the Society's botanical garden, is one of 22 botanical gardens in the U.S. that has been designated as regional conservator of the CPC's National Collection of Endangered Plants. During the last several years the Society has conducted research on the conservation of rare and endangered plants for the U.S. Fish & Wildlife Service, Massachusetts Natural Heritage Program, and the Center for Plant Conservation. For additional information, contact Barbara Pryor, Public Information Director, Garden in the Woods, 180 Hemenway Road, Framingham, MA 01701-2699.

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The **Classification Society of North America** (CSNA) is a nonprofit interdisciplinary organization whose purposes are to promote the scientific study of classification and clustering and to disseminate scientific and educational information related to its fields of interest. CSNA attracts researchers from many fields: two-thirds of its members have as their specialties psychology, statistics, computer science, biology, business applications, education, engineering, mathematics, and sociology. CSNA provides its members with a forum in which to discuss theories or methodologies relating to classification or clustering problems regardless of the particular fields in which such problems arise.

CSNA's activities include publications and meetings. The *Journal of Classification* publishes original and valuable papers on the theory and methodology of classification. The Classification Literature Automated Search Service publishes annually a bibliography and indices of journal papers on classification. A recent volume of the Service described 1141 papers from 553 journals---an impressive indication of how difficult it is to keep abreast of the classificatory literature. Newsletters containing current announcements, capsule summaries of research topics, meeting announcements, and current book information are mailed five times a year. All publications are included in return for annual dues of US \$45.00.

CSNA's annual scientific meeting encourages and emphasizes communication of current research in all areas of classification and among all disciplines. The 1991 meeting was held at the Cook Campus Center of Rutgers University, New Brunswick, NJ, jointly with the Psychometric Society, 13--16 June 1991. The 1992 meeting was held at Michigan State University, East Lansing, 11--13 June 1992. CSNA regularly cooperates with other learned societies to sponsor international meetings concerning classification and related topics. For example, CSNA participated in the Third Conference of the International Federation of Classification Societies at Edinburgh, Scotland, 6--9 August 1991. For a membership application write to: William H. E. Day, (CSNA), Department of Computer Science, Memorial University of Newfoundland, St. Johns, NF A1C 5S7, CANADA; Phone: 709/726-4245, Fax: 709/737-2009, or e-mail: whday@mun.bitnet.

# **RECENT DEATHS**

**Baki Kasapligil**, a structural botanist and professor emeritus at Mills College, Oakland, California, and a research associate in the University Herbarium, University of California at Berkeley, died April 22 of cancer in his home in Berkeley at the age of 73.

Born on 13 November 1918 in Çankaca, Turkey, and raised in Istanbul, he received his B.Sc. from the University of Istanbul in 1941, and attended the University of California, Berkeley, from 1947 to 1950, where he received his Ph.D. At Mills he taught courses in basic biology, basic botany, economic botany, and plant taxonomy. One of the most popular professors on campus, and affectionately known as "Dr. K," he maintained through his retirement years at the University Herbarium an active correspondence and contact with many colleagues and former students.

Dr. Kasapligil was the author of several monographs and numerous botanical papers on fossils, anatomy, morphology, and taxonomy. He also contributed to *Hortus Third* (1976) and other horticultural publications. His doctoral thesis on the structure and development of the vegetative and reproductive organs of California bay (*Umbellularia californica*) and European bay (*Laurus nobilis*), both members of the Lauraceae, is now regarded as a classic piece of work. He also wrote on such diverse plant groups as the pines (*Pinus*), oaks (*Fagus*), and filberts (*Corylus*), and on past and present floras of Asia Minor.--Rudolf Schmid.

# AWARDS AND HONORS

The 1991 recipient of **Rupert Barneby Award** is **Edith Gómez-Sosa**, a legume taxonomist from the Instituto de Botánica Darwinion in Argentina. Professor Gómez-Sosa is using the award to further her studies of the genus *Astragalus* at The New York Botanical Garden during July and August of 1992. She will also have the opportunity to work with Dr. Barneby during her stay in New York.

The New York Botanical Garden invites applications for the 1992 **Rupert Barneby Award**. The award of \$500 is to assist researchers planning to come to The New York Botanical Garden to study its collection of Leguminosae. Anyone interested in applying for the award should submit his or her curriculum vitae, a letter describing the project for which the award is sought, and how the collections at NYBG will benefit their research. Travel to NYBG should be planned between 1 January 1993 and 30 January 1994. The letter should be addressed to Dr. Brian M. Boom, Vice President for Botanical Science, The New York Botanical Garden, Bronx, New York 10458, USA, and received no later than 4 December 1992. Announcement of the recipient will be made by 20 December.

Those interested in making a contribution to **The Rupert Barneby Fund in Legume Systematics**, which supports this award, can send their check, payable to The New York Botanical Garden, to Dr. Boom.

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**Gregory M. Plunkett**, a graduate student of Douglas and Pamela Soltis at Washington State University, was the 1991 recipient of the third annual **Delzie Demaree Travel Award**. His dissertation involves sequencing the *rbcL* gene to resolve relationships among members of the Apiaceae/Araliaceae and to shed light on whether the Apiaceae originated from within the Araliaceae.

Graduate students in plant systematics are invited to apply for the 1992 Delzie Demaree Travel Award, a \$250 stipend to defray expenses related to attendance at the Missouri Botanical Garden Systematics Symposium which will be held 2--3 October 1992. The application should include a letter from the applicant explaining how symposium attendance will benefit his/her graduate work and a letter of recommendation sent by the major professor. Please mail letters of application to Donna M. E. Ware, Herbarium, Biology Dept., The College of William and Mary, Williamsburg, VA 23185.

## MEETINGS

The Missouri Botanical Garden's **Annual Systematics Symposium** will be held at the Garden 2--3 October 1992. The theme of this year's symposium is The Origin and Relationships of the Major Plant Groups.

New evidence from many fields, especially macromolecular and paleobotanical data, and rapidly developing synthetic techniques are opening the way to a significantly improved understanding of the phylogeny of plants. The increased production of objective data and the dramatically improved methods for analyzing these data are beginning to provide solid insights into the major lines of plant evolution.

PROGRAM: Mitchell L. Sogin (Woods Hole): Origin and diversification

of the major eukaryotic groups; Brent D. Mishler (Duke University) and Russell L. Chapman (Louisiana State University): Phylogenetic relationships of the "green algae" and "bryophytes" to the tracheophytes; Peter B. Crane and Paul Kenrick (Field Museum): The early diversification of the tracheophytes; Kevin Nixon, William L. Crepet (Cornell University) and Else-Marie Friis (Swedish Museum of Natural History): Phylogenetic relationships of the seed plants; James Doyle (University of California, Davis), Elizabeth A. Zimmer (Smithsonian Institution) and Michael J. Donoghue (University of Arizona): Combining morphological and ribosomal RNA evidence on seed plant and basal angiosperm relationships; Victor A. Albert and Mark W. Chase (University of North Carolina): Molecular phylogenetics of land plants: A review of the contribution of *rbcL* sequences; **EVENING SPEAKER**: Michael J. Donoghue (University of Arizona): Progress and prospects in plant phylogeny.

Friday evening, 2 October, will be devoted to an informal mixer for all Symposium participants and speakers on the Garden grounds. All papers will be presented on Saturday, 3 October. Registration must be accompanied by a \$45.00 registration fee (\$35.00 for students) which includes refreshments at the Friday mixer and lunch, dinner and cocktails on Saturday. No refunds will be granted after 25 September. SPACE LIMITS REGISTRATION TO 400; PLEASE REGISTER EARLY. Please make checks payable to: Missouri Botanical Garden and return to Systematics Symposium, Missouri Botanical Garden, P. O. Box 299, St. Louis, MO 63166.

# POSITIONS AVAILABLE

NSERC Women's Faculty Award in Vascular Plant Molecular Systematics, Institut de recherche en biologie végétale, Université de Montréal - Within the framework of research activities at the Institut de recherche en biologie végétale, we are inviting women researchers to submit their application for a NSERC Women's Faculty Award in the field of Vascular Plant Molecular Systematics. The candidate will work with a research team in Angiosperm systematics and morphology. The obtaining of this award may lead to a tenured position at the Université de Montréal.

The candidate must have a Ph.D. in the molecular systematics of vascular plants. A knowledge of French would be advantageous. Send a curriculum vitae, reprints of publications, and 3 letters of recommendation before 1 August 1992 to the following address: Dr. J. André Fortin, directeur IRBV, 4101 est, rue Sherbrooke, Montréal, Québec, Canada, H1X 2B2, tél. 514/872-8486. In conformity with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. The Nature Conservancy is seeking candidates to fill the position of Pyramid Lake/Stillwater Marsh Project Director for the Great Basin Field Office, Reno, Nevada. Responsibilities include the development and implementation of a comprehensive water rights negotiated settlement through mediation, the implementation and management of a pooled solicitation or "reverse auction" program to purchase water rights, direct negotiation to purchase lands and water rights. Requirements include: at least three years successful work experience in one or more of the following areas: land management or conservation, natural resource management or law, business, real estate, public or non-profit administration; a familiarity with water rights, water law, and western water issues; and fundraising and marketing in the non-profit sector. This is a two year position with strong potential for continuation. The Pyramid Lake/ Stillwater Marsh Project Director will supervise a small staff and will report to the Director of the Great Basin Field Office. Contact Mr. Tom

Mestas, Director of Administration, The Nature Conservancy, P.O. Box 11486, Salt Lake City, Utah 84147.

The Nature Conservancy is also seeking candidates to fill the position of Colorado Plateau Project Director in Moab, Utah. Responsibilities include the achievement of protective public land designations on TNCidentified NPS, BLM, USFS, and Utah State Lands; the identification of additional sites requiring designations, the influencing of land management to the benefit of biodiversity where possible on 'buffer lands' surrounding TNC priority sites, assisting GBFO staff with fundraising activities relating to the Colorado Plateau Project. Duties include: establish office in Moab, Utah to accomplish the duties of the position; initiate and/or conduct appropriate research work (in consultation with TNC regional and nation science staff, university staff and student, etc.) in the areas of gap analysis, ecological modeling, grazing, and specific biological element projects; oversee until such time as Preserve Manager or Caretaker is hired, the management and improvement of the Matheson Wetlands Preserve (water development, planning, construction, coordination with DWR, working with local issues, etc., and manage staff person(s) once hired. Requirements include: at least three years of successful work experience in one or more of the following areas: land management or conservation, natural resource management, public or non-profit administration; the ability to work well with a wide range of institutions and people representing a diverse range of viewpoints; Master of Science degree in a resource management or natural science field preferred. Contact Tom Mestas, The Nature Conservancy, Pioneer Station, P.O. Box 11486, Salt Lake City, Utah 84147-0486. Phone: 801/531-0999; Fax: 801/531-1003.

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**Internships at Public Gardens** - Plan now for the ideal job at a public garden, summer or year-round. Would you like to teach horticulture workshops for children, learn to map and catalog plants, care for the grounds of an historic estate, learn the ins and outs of greenhouse operations, get practical experience in the day-to-day operations of a botanical garden? Over 150 public gardens across the United States are currently advertising for openings for 1993. More than 500 positions are available for aspiring horticulturists, educators, curators and horticultural therapists. <u>The AABGA Internship Directory - 1992</u>, available from the American Association of Botanical Gardens and Arboreta, lists each garden's address, contact person, deadline for applications, job descriptions, hours, salary and educational benefits. Application deadlines begin as early as November 1992, with most from January to March 1993. Order your copy by sending \$5.00 to AABGA Internship Directory, 786 Church Road, Wayne, PA 19087.