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

FLORA OF NORTH AMERICA NEWS

News from the Organizational Center

Two excellent summer interns, **Jennifer Milburn** and **Stacy Oglesbee**, have been here since early June and are leaving in late August. Jennifer is a senior biology major, with Drs. Walter Kelly and Rick Ballard as her advisors, at Mesa State College in Grand Junction, Colorado. She has been working with Nancy Morin on *Nemacladus* for the Jepson Manual and *Triodanis* for the Volume 8 FNA treatment. Jennifer is also doing a more in-depth study of *Nemacladus* for her Mesa State internship paper and plans to look for it in the field next year.

Stacy Oglesbee, a senior majoring in botany, with Dr. Donald Rhodes as her advisor, is from Louisiana Tech University, in Ruston, Louisiana. Stacy has learned nearly all aspects of Flora of North America, and has worked both with manuscripts and databases. She has done a study of Midwestern *Stachys* as well, with the help of George Yatskievych. Both young botanists have been extremely valuable colleagues and much appreciated in the FNA office.

Status of Volume One

Introductory Chapters are in final editing in the Editorial Committee. They will be illustrated with previously published figures and illustrations, but with completely new maps. We have almost all associated permissions, and have rephotographed the artwork and modified the graphics into a form that Oxford University Press can use.

Fern treatments are in final review process, with most families having already been sent to outside reviewers and returned, and a few families needing some scientific editing before they are sent to outside review. Original fern illustrations are complete and maps are about half completed, but both items are still subject to additional review changes.

Gymnosperm treatments have all been reviewed and only slight technical editing remains to be done. Original gymnosperm illustrations are complete and maps are almost complete, subject to additional review changes.

Gearing up for Volume 2

Manuscripts for 40 genera in 15 families for Volume 2 (Magnoliidae and Hamamelidae) are already at the Organizational Center. Office staff have entered them into the computer (from diskettes received or by scanning typescript) and preliminary editing of those families is in process. Slight changes in processing of illustrations and maps are being developed. Authors will receive update information in the revised pages of the Guide for Contributors that come out after Volume 1 is sent to Oxford University Press. (Don't panic. Revised pages will clarify some items and expand on others. They will contain no major changes in format or style.)

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It was decided at the May 1991 Editorial Committee meeting in Logan, Utah, that the FLORA OF NORTH AMERICA NEWSLETTER should be published quarterly instead of bimonthly. In the future, there will be four issues a year; although for this year, there will be five issues due to the publication schedule before May.

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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.

Manuscripts received at the Organizational Center mid-March 1991 through mid-August 1991

Volume 2
George P. Johnson - Calycanthaceae

Volume 10
James Ackerman and Randall Morgan - *Piperia*
Ralph Adams and Ruben Sauleda- *Basiphyllaea, Bletia, Bulbophyllum, Eltroplectris, Pelexia, Prescotia, Tropidia*
Peter Ball - *Carex* sect. *Triquetrae*, *Carex* sect. *Viriscentis Eriophorum*, and *Kobresia*
Paul Catling and Charles Sheviak - *Sacoila* and *Tipularia*
Paul Catling and Katherine Gregg - *Cleistes*
Dawn Frame - *Schoenocaulon*
Lisa George - *Podophyllum, Diphylleia*, and *Jeffersonia*
Walter Holmes - *Crinum*

Volume 3
Jackie Poole - *Acleisanthes*

FNA Items for Sale

COFFEE MUGS, T-SHIRTS, HATS, AND BUTTONS with the FNA logo and words on them are now available for purchase from Judy Unger at the Organizational Center. The new coffee mugs are beige with the FNA logo and words on one side and a distribution map of North America on the other side both in green. White all-cotton T-shirts with green logo are available in adult sizes of S, M, L, XL. Variations on the shirts will be available in the future.

We also now have a white painter's cap with the FNA name and logo, excellent for field work. We also have available a 11/2" x 3" inch rectangular button with the habit drawing of Floerkea proserpinacoides (our logo plant) and the full Flora of North America name.

Prices are as follows: T-shirts are $7; mugs, $6; caps, $5; and buttons, $1. If you would like us to mail them, add $2 each (except for buttons) for postage and handling, all prepaid please. All of these items would be great to help spread the word about the FLORA OF NORTH AMERICA.

FNA Positions Available

The Flora of North America Project, through the Missouri Botanical Garden, has two positions in plant systematics available immediately. Duties will include preparation of treatments and assistance with compiling relevant character lists. For the first six months both positions will be devoted to completing **Ranunculaceae** in collaboration with Dr. Carl Keener. One or both positions will be stationed at Pennsylvania State University in University Park, Pennsylvania, during part of this time. After Ranunculaceae is complete, work on **Cyperaceae**, **Fabaceae**, and **Rosaceae** will be divided among the positions based on the individuals' skills and background. Both positions are for an initial two years, but candidates interested in spending a one-year sabbatical will also be considered. Ph.D. in plant systematics required; proven ability to initiate and carry out research necessary. These positions may be filled by recent graduates or senior botanists; salary is $22,000 per year with full benefits. Send résumé, names and addresses of three references, and a letter describing previous research experience to: Human Resource Management, Missouri Botanical Garden, P. O. Box 299, St. Louis, Missouri 63166. Applications will be accepted until positions are filled. Missouri Botanical Garden is an affirmative action, equal opportunity employer.

Editorial Committee News

GEORGE ARGUS, a member of the FNA Editorial Committee, received the George Lawson Award, given for outstanding contribution to Canadian botany, at the last Canadian Botanical Association Congress, held in June in Edmonton, Alberta. George was chosen for this award because of his work on the rare plants in Canada, and for his long career of studying Salix. This is the most prestigious award given by the Canadian Botanical Association.

ROBERT KIGER, an FNA editor, gave a talk on "Flora of North America: Plants and Project" at the Regional Spring Conference of the Men's Garden Clubs of America, hosted by the Men's Garden Club of Western Pennsylvania at Chatham College in Pittsburgh on 1 June. According to Bob, it was very well received, and the audience was quite interested in both the flora and the Flora. His emphasis was that gardeners should not overlook native plants, and should look forward to the Flora as a comprehensive source of information about all the wild-type plants that are found in North America.

GERALD STRALEY, also an FNA editor, was recently named Director of the Herbarium, Department of Botany, at the University of British Columbia. He continues in his position as Research Scientist and Curator of Collections with the UBC Botanical Garden. The UBC Herbarium, currently the third largest herbarium in Canada, has about 530,000 specimens (215,000 vascular plants, 198,000 bryophytes, 80,000 algae, 23,000 lichens, and 13,000 fungi). The collection is general, world-wide, with emphasis on Pacific Northwestern North American, the Pacific Rim, and cultivated temperate plants. The UBC Botanical Garden recently received the American Association of Botanical Gardens and Arboreta (AABGA)'s 1991 Program Excellence Award for their Plant Introduction Scheme. This program contributes valuable new plants to the Pacific Northwest and successfully demonstrates how gardens and nurseries can work together.

NAMES IN CURRENT USE
Draft Lists Available Electronically -

The International Union of Biological Sciences, International Association of Plant Taxonomists, and the Systematics Association sponsored an international symposium on "Improving the Stability of Names: Needs and Options," held at the Royal Botanic Gardens, Kew, 21-23 February 1991. The special committee on Lists of Names in Current Use (NCU) proposed the production of draft lists of generic names in current use to be granted "privileged nomenclatural status" (i.e. protection). The goal is to develop lists of names in current use (whether as accepted names or synonyms) that later cannot be displaced by names not on the list (usually older names) or for some other nomenclatural reason, beginning with families and genera. As explained by W. Greuter (Taxon 40:339-341, 1991), comments are needed regarding any omitted names that rightfully belong on the lists or that should be excluded, correction of bibliographic references, and verification of type citations. **It is extremely important that specialists participate in this process, even if they disagree with the concept.** If a proposal for protecting "names in current use" should pass at the 1993 Congress, the lists presented at the Congress may be accepted, and they should be as correct and comprehensive as possible.

To make these draft lists available to the botanical community before the 1993 International Botanical Congress in Tokyo, copies of the lists will be mailed to major botanical institutions. Any other institutions may obtain the lists electronically. In addition, by arrangement with Ellen Farr of the Index Nominum Genericorum project at the Smithsonian Institution, an electronic version of the NCU lists may be obtained through TAXACOM, an electronic service for systematic biology, either over the Internet (TAXACOM FTP Server) or by any microcomputer capable of data communication over regular phone lines (TAXACOM Dialup).

NCU draft lists currently available include phanerogams and conifers (13,401 genera) and ferns and fern allies (328 genera). The data fields for each entry are: genus, author, title, pages, figure, corrected, year, status, type, and family. Other plant groups, including the fungi, will be represented soon.

To access these lists on Internet, use the File Transfer Protocol program. Enter "FTP 35.8.196.1" or "FTP herbarium.bpp.msu.edu". Logon by entering "anonymous" as the user id, and "ftp" as your password. "Dir" or "ls" lists the files in the current directory. "Cd" changes directories; the NCU files are located under the subdirectory "/pub/plant.names". For help with FTP commands, type "help" at any FTP> prompt.

To access TAXACOM by modem, dial 716/896-7581 (prefix with country code if necessary) after setting communications software to 8 data bits, no parity, one stop bit (on a microcomputer with 1200 or 2400 bps modem and data communications software). Europeans should note that Bell protocols are used at 1200 bps, but standard CCITT at 2400 bps. Logon as "guest". At the main menu enter "27," for the Nomenclature Conference, enter "s" to scan the list of message titles, and the number of the message(s) dealing with the NCU lists.

Formal comments on the lists should be mailed to Prof. Dr. Werner Greuter, Botanischer Garten und Botanisches Museum Berlin-Dahlem, Koenigin-Luise-Strasse 6-8, D-1000 Berlin 33, Germany. Informal discussions and comments may be placed on the TAXACOM Nomenclature Conference and will be forwarded periodically to Dr. Greuter.

For additional information on electronic access to the NCU lists over the

Internet's TAXACOM FTP Server, contact Dr. James H. Beach, Harvard University Herbaria, Harvard University, 22 Divinity Avenue, Cambridge, Massachusetts 02138. For information on TAXACOM dialup phone access, contact Dr. Richard H. Zander, Clinton Herbarium, Buffalo Museum of Science, Humboldt Parkway, Buffalo, NY 14211, USA; voice 716/896-5200; Bitnet: visbms@ubvms; Internet: visbms@ubvms.cc.buffalo.edu.

COMPUTER NEWS

Macintosh enthusiasts will want to know that a mapping program, **RangeMapper**, is being designed precisely with botanical distribution needs in mind. Kenelm Philip, a lepidopterist cum registered developer doing business as Tundra Vole Software, has Micro World Data Bank Files in a polar azimuthal projection for the northern hemisphere. He has incorporated high resolution CIA files for Alaska, and in time the same detail will be possible for all of North America--and as demand warrants, for the rest of the world. The polar projection will be extended to the southern hemisphere, and then mercator, cylindrical, and orthographic projections will be added. You can draw low and medium resolution maps for the northern hemisphere and high resolution areas of Alaska. You choose the scale for the map by setting its latitudinal limits and center the map on a longitudinal point of your choosing. The upper limits of the map-scale are determined by the accuracy of the CIA files, but it is possible to portray St. Paul Island, for example, which is merely 13 miles long. RangeMapper reads latitude-longitude ASCII files from your database and plots them using the traditional symbols of open and filled circles and squares, which are available in various sizes. Since symbols and the sizes can be mixed on any map, several taxa and relatively complex patterns can be portrayed. The program is compatible with both Canvas (drawing) and with Nisus (word processing), which allows you to use Range Mapper as a graphic application with a text database. For further information, contact Ken Philip, 1590 North Becker Ridge Road, Fairbanks, AK 99209; Phone: 907/479-2689.

OTHER FLORAS

Soviet Union - New floras are appearing in the Soviet Union. Three more volumes of the **Flora of Siberia** have come out since our announcement of the first two in the Jan/Feb 1989 issue of this newsletter. The first volume of these three newest ones (1988) covers the Lycopodiaceae - Hydrocharitaceae and contains ferns, fern allies, gymnosperms, and monocot families Typhaceae, Sparganiaceae, Potamogetonacaee, Alismataceae, and Hydrocharitaceae. The flora contains keys, synonymy, descriptions, distribution, and ecology, supplemented by dot maps, 16 plates of splendid black and white line drawings of whole plants and diagnostic parts, and an index.

This volume was followed early in 1990 by one on the Poaceae, which has 18 plates of line drawings. Only a few of these are devoted to whole plant habit; the majority are sketches of inflorescences and details of spikelets and florets for *Poa*, and leaf cross sections and details of florets and other diagnostic plant parts for *Festuca*. The third new volume, which appeared late in 1990, treats the Cyperaceae. In it is one plate of *Eleocharis* fruits as well as 15 of *Carex*, with very useful sketches of the inflorescence, perigynium, and scale for 165 of the 173 taxa treated.

The fourth volume of the **Vascular plants of the Soviet Far East** appeared

late in 1989, and it deals with Pinophyta, Polygonaceae, Saxifragaceae, Fabaceae, Rutaceae, Rhamnaceae-Elaeagnaceae, Dipsacaceae, Convolvulaceae, and Verbenaceae. It also has keys, descriptions, dot maps, and 25 plates of line drawings of whole plants or merely diagnostic parts.

These are all fine works, and the editors and contributors of these two projects are to be congratulated for their success in accomplishing so much. Up-to-date regional accounts of the flora serve also to prepare for the revision of the entire Flora of the USSR, which is scheduled to begin in 1995.

There is only a single print run for each of these volumes, which may be limited, e.g., 1500 - 2000 copies for the Vascular Plants of the Soviet Far East and 2100 - 3500 copies of the Flora of Siberia. Most of them are snapped up in the Soviet Union as soon as they appear on the shelves, for they become quite scarce within two or three years, even sooner.

This information was provided by **David Murray**, a member of the FNA Editorial Committee as both a regional coordinator for Alaska and taxon editor for Cyperaceae. David and his wife, **Barbara Murray**, are U.S. Coordinators for the Panarctic Flora, a bilateral project with Soviets. David covers the vascular plants, and Barbara covers the bryophytes and lichens for that project. Barbara is one of the bryologists who recently joined the FNA Editorial Committee.

IMPORTANT FUNDING NOTICE

The deadline for submission of proposals for Biotic Surveys and Inventories in the National Science Foundation's Systematic Biology Program has been changed from 15 September to 15 October 1991. It is essential that these five elements be fully addressed in proposals: 1. Taxonomic breadth--proposals should specify the range of taxonomic groups to be sampled, the justification for that range, the state of knowledge, collections, or other resources for those taxa. 2. Scale--proposals should justify the need for a dedicated collecting or inventorying effort on the geographic and logistic scale being proposed (collections inadequate, special research considerations). 3. Urgency--why is an immediate and intensive collecting or inventorying necessary. 4. Project management plan--including plan for curation and distribution of new collections or for the production of printed or computerized publications. 5. Conceptual issues--projects that have complete plans or provide direction for future research that will be facilitated by the new collections or inventories will be more competitive.
These are just highlights from the guidelines. Questions regarding this program can be directed to Systematic Biology Program, Room 213, 1800 G Street, N.W., Washington, D.C. 20550, or telephone 202/357-9588.

BIODIVERSITY MEETING

More than 100 Canadians, Americans, and Mexicans met 14-17 July in the Rocky Mountains at Keystone, Colorado, to discuss strategies to conserve and utilize biological diversity worldwide. The meeting involved individuals from diverse interests and organizations concerned with preserving and utilizing biodiversity, such as federal, state and provincial environmental and land management agencies; the private sector (e.g., forest products companies, oil, gas and mining companies, ranchers, farmers, fishing industries); Native American organizations; environmental

organizations; zoo, seed bank, botanic garden, and aquaria representatives. **Rich Spellenberg**, a member of the FNA Editorial Committee, participated on behalf of Flora of North America.

The "North American Consultation" was convened by The Keystone Center, a neutral conflict mediation organization headquartered in Colorado. The meeting was jointly requested by the World Resource Institute (WRI), United Nations Environment Programme (UNEP), and the International Union for the Conservation of Nature and Natural Resources (IUCN), which are collaboratively developing a World Biodiversity Strategy and Action Plan to be presented for consideration at the 1992 U.N. Conference on Environment and Development (UNCED) in Brazil. The North American Consultation was one of seven being conducted; others convened in India, Indonesia, United Kingdom, Brazil, Costa Rica, and Kenya.

The World Biodiversity Strategy and Action Plan calls for a "Decade of Diversity" to raise public awareness about the loss of diversity of animal and plant life at the genetic, species, and ecosystem levels. It outlines institutional, educational, and local activities and changes that need to occur to stem biodiversity loss, and to develop more sustainable uses of biodiversity to meet human needs. The North American Consultation was intended to solicit reaction to the draft document from individuals from a cross section of interests and to initiate individual discussions about biodiversity in North America. Several areas received consistent attention and discussion, including the need for an inventory of biodiversity in North America; increased participation by the private sector in biodiversity activities; greater communication and cooperation between state/provincial and federal government with local areas; acknowledgment of the role of native people and cultural diversity in biodiversity conservation; increased public awareness of biodiversity; more active involvement of local communities in the study and conservation of their local natural areas; the exploration of bilateral and trilateral efforts to manage bioregions in North America; and the need to expand the notion of national and international security to include ecological diversity and stability.

AWARDS

Two Flora of North America authors received graduate study research grants from the American Society of Plant Taxonomists this year: **J. Mark Porter**, University of Arizona (co-author of two Cactaceae genera), and **Fayla Schwartz**, University of Washington (Liliaceae reviewer).

The **Asa Gray Award** was presented to **Billie Turner**, Professor of Botany at the University of Texas. The Asa Gray Award is given by the American Society of Plant Taxonomists to honor an individual "for outstanding accomplishments pertinent to the goals of the Society." The award was made at the annual banquet of the American Society of Plant Taxonomists at the AIBS meeting. Billie Turner served on the Flora of North America Advisory Panel, which was instrumental in planning and implementing the project.

NEWS AND NOTES

The Herbarium of **Arkansas Tech University** has recently reorganized and invites researchers to request loans. Many of the specimens have never been examined critically by outside investigators. The collection consists of approximately 25000 specimens of vascular plants, primarily from

Arkansas. The herbarium also serves as the repository for specimens from the Ozark and St. Francis National Forests. The collection includes materials from a number of individuals, most notably Maxine Clark, Richard Davis, Delzie Demaree, Dwight M. Moore, and Gary Tucker. Interested individuals should contact George P. Johnson, Curator, Department of Biological Sciences, Arkansas Tech University, Russellville, Arkansas 72801, 501/968-0312.

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The privately endowed **Jepson Herbarium** and the state-funded **University Herbarium** of the Berkeley campus of the University of California are seeking a new director. Until a new director is appointed all mail regarding loans, exchanges, etc., should be addressed to Collections Manager, Jepson Herbarium (or University Herbarium, as appropriate), University of California, Berkeley, California 94820. Note, too, that effective 2 September 1991, the telephone **area code** for all numbers in **Berkeley** (and the East Bay) will be **510**, not 415. Local numbers remain the same, e.g., the new number for UC will be 510/642-2465 instead of 415/642-2465.

PUBLICATIONS

An Alphabetical List of Bromeliad Binomials has been revised by the compiler, H.E. Luther, to include all author names, many additions, as well as corrections and changes. Price: 3rd class and surface mail is $10; United States first class, add $1; all other countries airmail, add $4. Please make checks payable in U.S. dollars to Bromeliad Society, Inc. Send orders to Editor, The Bromeliad Society, Inc., 1508 Lake Shore Drive, Orlando, Florida 32803. Tel: 407/896-3722

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Evolutionary Trends in Flowering Plants, by Armen Takhtajan, treats evolutionary trends in each major organ of flowering plants: vegetative organs, flowers and inflorescences, fruit, and seeds, with emphasis on those of special systematic and evolutionary significance. The book could become a classic reference for a wide range of biologists as well as for phylogenists, taxonomists, and paleobotanists. 256 pages, ISBN 0-231-07328-3, $44 list, available for a 20% discount with order form until 30 June 1992. You must use the form provided in this newsletter to get the discount.

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Wildflowers of Mississippi, by S. Lee Timme, has been reprinted in both paperback and hardcover, after selling out its initial hardback printing in about one year. This attractive volume, though perhaps a bit large to fit into the field-pack, is a wonderful introduction in a state for which no complete floristic manual presently exists. Arrangement is alphabetical by family, with the dicots following the monocots. The color photographs of all included species are exquisite and well produced, and are a major attraction of the book. The accompanying text includes easily understood descriptions of morphology, habitat, and distribution. A short introduction to Mississippi's physiographic regions, a botanical glossary, and simple illustrations of plant structures are also included. This book is

recommended not only to those interested in the southeastern U.S. flora, but to anyone appreciating the vibrant colors and interesting forms possible to portray in a set of crisp, well-composed plant photographs. xx, 178 pp., numerous photos, illustrations, 7" \/ 10", ISBN 0-87805-395-6, $40.00 (hardback), ISBN 0-87805-484-7, $21.95 (paperbound). Order from University Press of Mississippi, 3825 Ridgewood Rd., Jackson, MS 39211.--George Yatskievych (MO)

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WRI PUBLICATIONS - The World Resources Institute has compiled a report entitled Drowning the National Heritage: Climate Change and U.S. Coastal Biodiversity, by Walter V. Reid and Mark C. Trexler. For more information, contact WRI Publications, P.O. Box 4852, Hampden Station, Baltimore, MD 21211. Tel: 301/338-6963

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NAS PUBLICATION - The National Academy of Sciences has released Managing Global Genetic Resources: Forest Trees ($24.95 plus $3 shipping, 248 pp.). Order from the National Academy Press, 2101 Constitution Avenue, Washington, DC 20418. Tel: 800/624-6242.

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POISON IVY, POISON OAK, POISON SUMAC - To bridge the gap between fact and fiction, Dr. Edward Frankel, Professor Emeritus from Lehman College of the City University of New York, has written a comprehensive, yet non-technical guide to the **Toxicodendrons** and their relatives. The information is a useful reference for anyone wanting to avoid a bout with this large family of poisonous plants, as well as for the student of botany.

The book, entitled Poison Ivy, Poison Oak, Poison Sumac, by Edward Frankel, 98 pp., 5 1/2 by 8 1/2, paper, ISBN: 0-940168-18-9, sells for $9.95 and is available from the Boxwood Press, 183 Ocean View Blvd., Pacific Grove, California 93950. Libraries and bookstores need to identify themselves in order to receive a discount. On personal orders, add $1.25 postage for one copy; $.50 for each additional copy. Call 408/375-9110 for additional ordering information.

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The Key to the Vascular Flora of the Northeastern United States and Southeastern Canada, by Floyd A. Swink, is written to be used in conjunction with *Gray's Manual*. This book has a tough, waterproof cover, opaque paper, and compressed size. It also includes a glossary and special appendix of rare plants. 546 pages, 5" x 7", soft cover, $21.95 plus $3.00 shipping and handling. Order from Plantsmen's Publications, Box 1, Flossmoor, Illinois 60422.

UPCOMING MEETINGS

Biological Pollution: The Control and Impact of Invasive Exotic Species is the topic of a symposium hosted by the Indiana Academy of Science, to be held at the University Place Conference Center, Indianapolis, Indiana, 25-26 October, 1991. For more information, write Bill N. McKnight, Indiana State Museum, 202 North Alabama, Indianapolis,

Indiana 46204.

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Knowledge Brokering: The Mechanics of Synthesis is the title of the annual Missouri Botanical Garden Systematics Symposium, which will be held 4-5 October 1991. Speakers will be Theodore M. Barkley--Synthesis: a historical perspective; Arlene E. Luchsinger: Electronic information systems and scholarly publishing; Jean E. Nash: A model for the administration of shared data; Stanley A. Morain: Emerging technology for biological data collection and analysis; Nancy R. Morin and Janet Gomon: Databanking and the role of natural history collections; James R. Estes: The integration and dissemination of information for ecological and evolutionary biology: The role of NSF; K. W. Bridges: The art of synthesis. This symposium is particularly relevant to Flora of North America--whose goal is to provide a **synthesis of information on North American plants** in both printed and database form. To register send $40 ($35 for students), name and address to Systematics Symposium, Missouri Botanical Garden, P. O. Box 299, St. Louis, Missouri 63166. Registration fee covers cost of meals and Friday evening mixer. It is the same for spouses not attending the talks. No refunds will be granted after 25 September.

POSITIONS AVAILABLE

Missouri Botanical Garden seeks a **Programmer Analyst** to develop software programs for its Research Division using Ingres, to implement the design team's specifications, and to develop prototypes for review and testing. The Garden's research programs and database, of which the FNA database is a part, are used by numerous local and international projects and for management of many Garden operations; the system currently has about thirty main users and fifty casual users. The successful candidate must possess a Bachelor's degree in computer sciences with two to five years' programming experience working with Ingres in a Unix environment, or the equivalent combination of experience and education; and a strong background in Fourth-Generation Languages (Ingres 4GL) with solid skills in the application development environment required. Experience/familiarity with botanical nomenclature, versatility, and good communication skills a must. To apply, send a letter of application stating position desired, résumé, and salary history (phone inquiries not accepted) by September 1, 1991, to receive priority attention to: Human Resource Management, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166.*

The Center for Plant Conservation, based at the Missouri Botanical Garden, seeks an **Information Systems Technician** to provide computer support for the Center; assist in management of computerized database on rare and endangered plants; evaluate computing techniques and contribute to regular systems review; research and install appropriate hardware and software, and maintain system documentation. The successful candidate must possess a Bachelor's degree in Computer Science, or Plant Science, with either experience and/or knowledge of scientific, particularly biological research applications; a thorough workable knowledge of computers and LANs; experience with Novell Netware, Multimate, Revelation, and/or Advance Revelation, Lotus 1-2-3; familiarity with relational database structure and design; excellent written and interpersonal communications skills. To apply, send a letter of application stating position desired, résumé, and salary history (phone inquiries not accepted) to Human

Resource Management, Missouri Botanical Garden, PO Box 299, St. Louis, Missouri 63166.* Applicantions must be submitted by September 1, 1991, to receive priority attention.

The Missouri Botanical Garden seeks a **Postdoctoral Fellow** for monographic studies in the Onagraceae. Candidate will collaborate on a monograph of North American *Epilobium* (including herbarium work, descriptions, finalization of maps, etc.) and on a worldwide synopsis of the genus; edit monographic and review papers on various parts of the family; and collaborate on phylogenetic studies of Onagraceae. A Ph.D. in plant taxonomy, experience with monographic studies, and some editorial experience are required. The position is available immediately. To apply, send C.V. and names and addresses of three references to Human Resource Management, Missouri Botanical Garden, PO Box 299, St. Louis, Missouri 63166.*

*An Equal Opportunity/Affirmative Action Employer