

Volume 9, Number 2  
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Nancy R. Morin and Judith M. Unger, co-editors

## FLORA OF NORTH AMERICA NEWS

**Volume 3 families are being sent to Oxford University Press (OUP)** in groups in taxonomic order. The first fourteen of 32 families (Magnoliaceae through Ceratophyllaceae) have been sent to OUP to begin processing for publication. By the end of August, the entire volume will be in the publisher's hands. Publication will be next spring. Those million and one details, queries, and inconsistencies in the text, maps, and illustrations have taken more time than anticipated to iron out between authors and editors. Also, this first volume covering Angiosperms had some morphological-term details to be settled that had not come up in the fern and gymnosperm volume.

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**Visiting Editorial Committee (EC) members** are covering for Convening Editor Nancy Morin (doing research in England this spring and summer) on the daily operations of the project. **David Murray** from Alaska was here during April and May. He was busy at the Organizational Center working on Volume 3, and didn't get as much of his Cyperaceae work done as he had hoped. **Rahmona Thompson** from Oklahoma was here for a month (most of June). She continued to move Volume 3 along. Her Poaceae work will have to wait until later. **Ted Barkley** from Kansas is here for July and August. He says summer in St. Louis and summer in Kansas are not very different. Ted and the staff continue with the awesome job of tying up all of those loose ends for Volume 3. Dave Murray will return for September and October to do some of his Cyperaceae work.

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The **invitations to potential authors of Compositae taxa** are also being mailed this summer. This family is the last volume to be invited, although unassigned taxa still exist in other volumes. The CompEds group, composed of Ted Barkley, Luc Brouillet, and John Strother, are supervising and editing the Compositae (Asteraceae). All invitees must respond to the Organizational Center in order to get materials required to complete their FNA treatments.

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**Bruce D. Parfitt**, Scientific and Managing Editor for FNA since 1991, has accepted a position as Assistant Professor of Botany at the University of Michigan-Flint. He will continue to be involved with FNA as Taxon Editor for the Cactaceae. Effective 15 July 1995 FNA-related correspondence, previously being sent to Bruce (except Cactaceae), should be directed to "FNA Organizational Center." Correspondence and manuscripts for FNA Cactaceae should be sent to: Bruce D. Parfitt, Biology Department, University of Michigan-Flint, Flint, Michigan 48502-2186.

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**If you are attending the AIBS Annual Meeting in San Diego** from 6-10 August 1995, be sure to visit the **FNA table** in the area with the societies to see how the project is doing. We will have our **T-shirts** for sale, including

a new **Volume 3 design** showing oak leaves and/or acorns. Samples of the Volume 1 slide set will also be available, and may be purchased for \$50. Information regarding who is writing which treatments and which taxa are still unassigned will be available.

**Oxford University Press, FNA's publisher, is sponsoring a reception** to celebrate the presentation of a preliminary version of the **CD-ROM** of Volumes 1 and 2. Come for some free refreshments on **Monday afternoon August 7** from 4 to 6 in the **Sunrise Room** and socialize with others affiliated with the project as authors, reviewers, editors, and staff (Check the AIBS program for details).

\*\*\*\*\* 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**

### **1 JANUARY 1995 through 30 JUNE 1995**

#### **Volume 11**

Peter Ball - *Carex* sect. *Aulocystis*  
Leo Bruederle - *Carex* sect. *Phagocystis*  
Jacques Cayouette - *Carex* sect. *Phagocystis*  
Ted Cochrane - *Carex* sect. *Physoglochin*, *Granulares*,  
*Leucoglochin*, *Heleoglochin*, *Polytrichoideae*,  
*Shortinae*, *Anomalae*  
Joy Mastrogiuseppe - *Carex* sect. *Macrocephalae*  
Tony Reznicek - *Carex* sect. *Paniceae*  
Paul Rothrock - *Carex* sect. *Paniceae*  
Lisa Standley - *Carex* sect. *Phagocystis*  
Heikki Toivonen - *Carex* sect. *Glareosae*  
Daniel Wujek - *Eriophorum*

Bob Dressler - key to Orchid genera  
Robert Kral - Eriocaulaceae  
Dale McNeal - *Milla*  
Gerald Smith - *Hymenocallis*  
Fred Utech and Shoichi Kawano - *Uvularia*

#### **Volume 4**

John Clement - *Pisonia* and *Guapira*

#### **Volume 5**

Liv Borgen - *Lobularia*  
Juan B. Martinez-Laborde - *Diplotaxis*  
Suzanne Warwick - *Sinapis*, *Brassica*, *Coincya*, *Conringia*,  
*Crambe*, *Eruca*, *Erucastrum*, *Hirschfeldia*, *Raphanus*, and  
*Rapistrum*

#### **Volume 6**

Velva Rudd - *Arachis* and *Pickeringia*  
David Sutherland - *Dalea*, *Psorothamnus*, *Marina*, and  
*Errazurizia*

## **STRATEGY FOR LOANS**

FNA treatments are based, for the most part, on a critical study of herbarium specimens. **Each author needs enough specimens to know the range of both morphological variation and geographic distribution. It is, therefore, essential to borrow wisely, obtain critical mass, and to know when enough is enough.** Treating an entire genus over the full FNA area confronts many FNA authors with daunting problems: what specimens to borrow, from where, not to mention how to store them. Frequently the first step is to write several of the large, usually eastern, herbaria in the U.S. and ask for every thing they have. But, do you really want three or four cabinets of specimens of mostly common species? What is the likelihood that specimens from the major institutions will allow you to define the total range? It is very easy to wind up with too many specimens but too little information. I suggest that you use a different strategy.

Borrow from big institutions, but selectively. Most important remember that regional herbaria must be consulted as well. You can obtain the best geographic coverage through loans from smaller collections and also be certain the full morphological picture will be adequately developed. Furthermore, regional herbaria will more likely welcome the opportunity to have specialists annotate two or three hundred specimens you request than a large institution will welcome the chore and expense of packaging and sending off two or three thousand specimens.

The large eastern institutions will certainly provide what is needed for the northeastern part of the FNA region. But, the southeast, southwest, and northwest are less well covered by these collections. Canadian herbaria are rich in material not necessarily duplicated in the U.S., and information on their holdings should be sought. Some herbaria have their specimen label data computerized, so you may be able to select only portions for loan.

If you want to know where the action is, who is bringing in new collections from areas poorly known, post a query on TAXACOM (Biological Systematics Discussion Group). To subscribe, simply send: <subscribe taxacom your\_name> to listserv@cmsa.berkeley.edu and you will be amazed by the results.

**DOCUMENTATION** - If you do not routinely enter the label data into a database, what sort of information should be recorded from each specimen? Many authors record by hand the specimens at each herbarium by state/province or country with enough about specific locality to map accurately. In the interests of time, the collector(s) and collection number, for example, are often omitted.

**To comply with the new FNA guidelines**, we require data for a minimum of one specimen from each state, province or territory, consisting of herbarium acronym per Index Herbariorum, state, province or territory, collector and collection number, and date (day/month/year) for collection. Many authors are actively building databases in support of their research; for them this is no problem. FNA welcomes additional specimen records in electronic format. To transfer these data to FNA, please first contact Deborah Kama, FNA database manager, (kama@mobot.org) for instructions. --David Murray, FNA Editorial Committee

## COMPUTER NEWS

The Smithsonian Institutions's **Natural History Gopher Server**, has several additions and enhancements including a new data set retrieval gateway and the deployment of the Smithsonian's **Natural History Web**.

Dataset Retrieval Gateway: A custom gateway for building a file of search results from a WAIS-index query, which can be browsed or downloaded as a dataset, is now available. It is currently a menu option for the Conservation and Gesneriaceae bibliographies and is planned for use with other databases. Look under Biological Conservation or Annotated Bibliography of the Gesneriaceae and choose the "Select a Dataset" option. Up to 200 items will be returned in a single file. It will take up to 2 minutes to build the dataset.

For users with access to the World Wide Web, the **Smithsonian Institution's Natural History Web** has been set up at: <http://nmnhwww.si.edu/nmnhweb.html>. There you can find information about all the scientific departments, research projects and public programs at the Museum. We have posted lists of the scientific staff for each department and provided contacts for more information. We have an on-line events calendar. You can also access all of the documents and data on the Natural History Gopher from the Natural History Web. For additional information contact Ellen Farr, e-mail: [mnhbo001@sivm.si.edu](mailto:mnhbo001@sivm.si.edu)

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Anthony Brach has compiled two lists of **URLs for World Wide Web (WWW) sites**, the first specifically for botanists, the second for ecologists. With the tremendous growth in the use of WWW for finding information, these lists, both of which are reprinted below, will serve as an introductory guide to what is presently available. Through the generosity of Shunguo Liu and Jean Thioulouse, WWW pages have been set-up to provide access to these lists at the following URLs:

**List of WWW Sites of Interest to Botanists**

<http://meena.cc.uregina.ca/~liushus/bio/botany.html>  
<http://biomserv.univ-lyon1.fr/Ecology-WWW.html>

**List of WWW Sites of Interest to Ecologists**

<http://biomserv.univ-lyon1.fr/Ecology-WWW.html>

Please send additions or corrections to Anthony R. Brach, Missouri Botanical Garden and Harvard University Herbaria, phone: (617) 495-3646 or 495-2365, fax: (617) 495-9484, e-mail: [brach@oeb.harvard.edu](mailto:brach@oeb.harvard.edu).

**WWW Sites of Interest to Botanists**

Arizona Nature Conservancy  
<http://hanksville.phast.umass.edu/defs/independent/AZNC/AZlist.html>

Arnold Arboretum  
[gopher://huh.harvard.edu/11/collections\\_info/aa](http://huh.harvard.edu/11/collections_info/aa)

Biodiversity and Biological Collections WWWs (Botany)  
<http://muse.bio.cornell.edu/taxonomy/botany.html>

A Biologist's Guide to Internet Resources by Una R. Smith 1993  
[gopher://sunsite.unc.edu/1m/./pub/academic/biology/ecology+evolution/bioguide/bioguide.item](http://gopher://sunsite.unc.edu/1m/./pub/academic/biology/ecology+evolution/bioguide/bioguide.item)

BIOSCI/bionet Electronic Newsgroup for Biology  
<http://www.bio.net/>

Bishop Museum Botany Page  
<http://job.hcc.hawaii.edu:8080/bishop/botany/botany.html>

Botany Department (University of Georgia)  
<http://dogwood.botany.uga.edu/>

California Academy of Sciences WWW Server  
<http://www.calacademy.org/>

California State University Stanislaus Botany 3700 Home Page  
<http://130.17.2.215/>

Connecticut College Herbarium  
<http://herbarium.conncoll.edu/>

Detailed Family Descriptions  
[http://florawww.eeb.uconn.edu/FAM\\_DESC\\\_fdlist.htm](http://florawww.eeb.uconn.edu/FAM_DESC\_fdlist.htm)

Flora of North America  
<http://atg1.wustl.edu/FNA/>

Gray Card Index  
[gopher://huh.harvard.edu:70/11/project\\_information/authority/botany/gray\\_cards](gopher://huh.harvard.edu:70/11/project_information/authority/botany/gray_cards)

The Intermountain Herbarium, Utah State University  
<http://www.biology.usu.edu/biology/plant.html>

International Organization for Plant Information  
<http://life.anu.edu.au/biodiversity/iopi/iopi.html>

Lythraceae, The Loostrifes  
<http://simon.kent.edu/Biology/SGraham.html>  
Missouri Botanical Garden  
<http://mobot.org/MoBot/welcome.html>

Montana Natural Heritage Program  
<http://nris.msl.mt.gov/mtnhp/nhp-dir.html>

National Biological Service (NBS)  
<http://www.its.nbs.gov/nbs/>

Oklahoma Museum of Natural History (Oklahoma Biological Survey)  
<http://obssun02.uoknor.edu/omnh/home.html>

Oklahoma Natural Heritage Inventory  
<http://obssun02.uoknor.edu/biosurvey/onhi/home.html>

Organismic & Evolutionary Biology, Harvard University (links to herbarium and arboretum gopher servers)  
<http://oeb.harvard.edu/>

Plant Resources Information Laboratory (Q'TAXA)  
<http://lib-www.ucr.edu/gomez-pompa/>

SMASCH Project  
<http://www.calacademy.org/smasch.html>

Smithsonian Natural History, Department of Botany  
<http://nmnhwww.si.edu/departments/botany.html>

TAXACOM List Serve Archives

<http://muse.bio.cornell.edu/archive/taxacom.html>

Texas A & M University, Plant Taxonomy  
<http://www.isc.tamu.edu/FLORA/tfphome1.html>

Texas Threatened and Endangered Species  
<http://is.rice.edu/~shel/Herp/tx.endangered.html>

TROPICOS via Remote Managing Gigabytes  
<http://keck.tamu.edu/cgi/MG/wwwRMG.mobot.html>

University of Delaware Botanic Gardens  
[gopher://bluehen.ags.udel.edu:71/hh/.botanic\\_garden/botanicg.html](gopher://bluehen.ags.udel.edu:71/hh/.botanic_garden/botanicg.html)

University of Florida Herbarium (FLAS)  
<http://nabalu.flas.ufl.edu/flashome.html>

University of Guelph, Botany Department  
<http://www.uoguelph.ca/CBS/Botany/botany.htm>

University of Toronto Botany Server  
<http://www.botany.utoronto.ca/>  
University of Wisconsin, Botany Gopher  
<gopher://gopher.adp.wisc.edu:3000/7?botany>

Vatican Exhibit - Herbals  
<http://www.ncsa.uiuc.edu/SDG/Experimental/vatican.exhibit/exhibit/g-nature/Botany.html>

### **WWW Sites of Interest to Ecologists**

Biodiversity and Biological Collections  
<http://muse.bio.cornell.edu/>

Biodiversity, Ecology, and the Environment  
<http://golgi.harvard.edu/biopages/biodiversity.html>

Biodiversity & Ecosystems NEtwork (BENE)  
<http://straylight.tamu.edu/bene/bene.html>

Biologist's Guide to Internet Resources by Una R. Smith 1993  
<gopher://president.oit.unc.edu:70/1m/./..pub/academic/biology/ecology+evolution/bioguide/bioguide.item>

Boyce Thompson Institute for Plant Research  
<http://birch.cit.cornell.edu/>

California Academy of Sciences WWW Server  
<http://www.calacademy.org/>

Congressional Record  
<http://thomas.loc.gov/>

Conservation Ecology  
<http://journal.biology.carleton.ca/Journal/Overview.html>

Current Weather Maps/Movies  
<http://rs560.cl.msu.edu/weather/>

Department of Ecology and Evolutionary Biology, University  
of Connecticut  
<http://florawww.eeb.uconn.edu/>

Department of Wildlife Ecology, University of Maine  
<http://wlm13.umenfa.maine.edu/w4v1.html>

Ecological Society of America (under construction)  
[http://www.sdsc.edu/1/SDSC/Research/Comp\\_Bio/ESA/ESA.html](http://www.sdsc.edu/1/SDSC/Research/Comp_Bio/ESA/ESA.html)

Ecology and Organismal Biology Resources, Harvard University  
<http://www.digitas.org:80/harvard/>

EcoWeb, University of Virginia  
<http://ecosys.drdr.virginia.edu:80/EcoWeb.html>

Environmental Education Network  
<http://envirolink/org/enviroed/>

Environmental Sites on the Internet  
<http://www.lib.kth.se/lg.html>

Environmental Studies Programs Home Page  
[http://www.brown.edu/Departments/Environmental\\_Studies/](http://www.brown.edu/Departments/Environmental_Studies/)

Field Museum of Natural History  
<http://www.bvis.uic.edu/museum/>

Global Change Master Directory, NASA  
<http://gcmd.gsfc.nasa.gov/>

The Great Lakes Program, University of Buffalo  
<http://ncgia.geog.buffalo.edu/GLP/GLPhome.html>

Great Smoky Mountains Bibliography  
<http://funnelweb.utcc.utk.edu/~nodvin/smoky.html>

Illinois Natural History Survey  
<http://denr1.igis.uiuc.edu:70/>

Internet GIS and RS Information Sites  
<ftp://gis.queensu.ca/pub/gis/docs/gissites.html>

Kennedy Space Center Ecological Resources Home Page  
<http://atlas.ksc.nasa.gov/env.html>

Man and the Biosphere (MAB)  
[http://ice.ucdavis.edu:80/MAB/MAB\\_main\\_page.html](http://ice.ucdavis.edu:80/MAB/MAB_main_page.html)

Missouri Botanical Garden  
<http://mobot.org/MoBot/welcome.html>

National Wetlands Inventory, US Fish & Wildlife Service Ecology Section  
<http://www.nwi.fws.gov/Ecology.html>

New Mexico Museum of Natural History  
<http://www.aps.edu/HTMLPages/NMMNH.html>

Remote Sensing and GIS Information  
<http://www.rsl.forestry.umn.edu:10000/>

Smithsonian Natural History Home Page  
<http://nmnhwww.si.edu/nmnhweb.html>

Texas A&M Rangeland Ecology and Management WWW Home Page  
<http://ranch.tamu.edu/rlem/>

UCI's Electronic Journal of Ecology & Evolutionary Biology  
<http://www-ee.bio.uci.edu/eebio/node2.html>

U.S. Geological Survey - Data Available Online:  
<http://www.usgs.gov/data/index.html>

U.S. Long-Term Ecological Research Network (LTER)  
<http://lternet.edu/>

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**PLANTS On-Line Update** - The PLANTS database held by the Natural Resources Conservation Service, USDA is accessible via the Internet. The National Plant Data Center (Baton Rouge, Louisiana 70874-4490 USA) is responsible for the development of plant information available through PLANTS. The current Telnet connection is planned to be superseded through a web browser front end in the fall. PLANTS contains vascular and nonvascular plant checklists and attributes provided cooperatively through the efforts of John Kartesz, Robert Egan, Robert Stotler, Barbara Crandall-Stotler, Lewis Anderson, FNA, John Wiersema, and many others in the botanical and agricultural communities.

Telnet> [plants.usda.gov](http://plants.usda.gov) login: plants

A World Wide Web site is currently under development and is expected to be functional by September 95. Its functionality will be noted in the General Information section of PLANTS On-Line and will be accessible via the NRCS Home Page.

WWW> <http://trident.ftc.nrcs.usda.gov/npdc/>

PLANTS is also accessible via dial-up mode:

- Dial 800-633-2504 or 303-282-2958
- Connect to server by entering username "plants" and password "usdascs".
- At "annex:" prompt, enter 'rlogin plants.usda.gov'.
- On the emulation input screen, choose your terminal emulation.
- Exit the system with the "hangup" command.

Contact your network specialist for assistance in accessing this service. If you have difficulty accessing PLANTS, please contact the access coordinator via email: [thernandez@ag.gov](mailto:thernandez@ag.gov)

## NEWS FROM HERBARIA

The renovation of the **University of Michigan Herbarium** is now complete. The combination of significant support from the University and a grant from the Long-Term Projects in Environmental Biology of the National Science Foundation permitted the installation of a new heating and air-conditioning system (including controls to maintain low humidity



during the summer months), a new laboratory equipment room, new lighting and flooring, and an electrically controlled compactor system. The 940 cabinets mounted on the 29 40-foot compactor carriages now house all of the MICH collection except the fungi and type specimens of vascular plants. We welcome visitors to use our facilities and can now provide prompt service for any loan requests. --Richard K. Rabeler, rabeler@umich.edu.

## NEWS AND NOTES

Call for Applications for the **1995 Delzie Demaree Travel Award** - Graduate students in plant systematics are eligible to apply for the Delzie Demaree Travel Award, a \$250.00 stipend to help defray expenses related to attendance at the Missouri Botanical Garden Systematics Symposium. The application should include a letter from the applicant telling how symposium attendance would benefit his/her graduate work and a letter of recommendation sent by the applicant's major professor. Please mail letters of application by 15 August to: Donna M. E. Ware, Herbarium, Biology Dept., College of William and Mary, Williamsburg, Virginia 23187.

**Dale Suiter**, a graduate student of Dan K. Evans at Marshall University, was the **recipient of the sixth annual Delzie Demaree Travel Award**. Dale Suiter's Master's thesis is a study of the flora of the New River Gorge National River, with comparison to floras of other river gorges in the Appalachian Mountains in regard to overall diversity, origin, and affinities. His study also resulted in the rediscovery in the gorge of many populations of species considered rare in West Virginia and in the discovery of 25 additional populations of rare species.

## PUBLICATIONS

Volume 1 of the 12 volume Useful Wild Plants of Texas, the Southeastern and Southwestern United States, the Southern Plains, and Northern Mexico will be available in the fall of 1995. Coauthored by Scooter Cheatham and Marshall Johnston, this series is a mammoth quest to systematically chronicle the economically useful plants of the region centered in Texas and radiating through the southern half of the United States and the northern part of Mexico. Information on these plants has been gathered not only from the area itself, but draws on the extensive use of these and closely related species around the world. This work underscores Texas's unique position in North America and the need to "save the rainforest in our own backyard."

Volume 1 includes 86 genera from Abronia through Arundo. Volume 2 will begin with the genus Asclepias. The complete series will include descriptions, photographs, distribution maps, and use information on over 3000 species of native or naturalized Texas plants.

This will be a hands-on resource for botanists, field researchers, foresters, ranchers, landowners and leaseholders, archeologists, teachers, biochemists, chefs, and many other professions and interests, with its extensive coverage of thousands of uses of native plants for food, medicine, pharmaceuticals, oils, rubbers, fuels, fibers, and many other domestic, industrial, and commercial uses. It shows the need to develop new crops and future resource bases from native plants. In addition to the ecological, recreational, aesthetic, and ethical arguments for conservation, this work provides an economic basis for arguing for the preservation of land and the plant life that is inextricably linked to the land. This work will also support

environmental impact statements, the development of wise land uses policies, and the development of education curricula.

This series is being published by Useful Wild Plants, Inc. This volume is 592 pages, 30x color photos, 268 color distribution maps. For information on ordering, direct correspondence to Useful Wild Plants, Inc., Dept S95, 2612 Sweeney Lane, Austin Texas 78723, USA, or call 512/928-4441.

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Text Annotations and Identifications Notes for Manual of the the Vascular Flora of the Carolinas, SIDA, Botanical Miscellany #11, is available for purchase from SIDA/Botanical Research Institute of Texas, 509 Pecan Street, Fort Worth, Texas 76102-4060 USA. Author John D. Freeman presents 607 annotations and notes to aid plant identification related to the Manual of the Vascular Flora of the Carolinas by Radford, Ahles, and Bell. These include 265 concerning inconsistencies between keys and descriptions, 215 that correct spelling and other simple printing errors, 94 glossary additions and clarification of terms, and 33 that deal either with nomenclature or authorship for accepted names. Purchase price is \$21. plus \$1. postage and handling; make checks payable to BRIT. If needed, phone: 817/332-4441 or fax: 817/332-4112.

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Guidelines for Institutional Policies and Planning in Natural History Collections, edited by K. Elaine Hoagland, contains sixteen chapters covering essential policies and documentation needed to effectively care for and manage anthropological, biological and geological collections. Each chapter was prepared by a different group of contributors representing many different disciplines, but all vitally concerned with natural history collections. The chapters include: 1) the mission statement, 2) strategic planning, 3) acquisitions and accessions, 4) management and care of collections, 5) access and use, 6) destructive sampling, 7) deaccessions, 8) documentation and databases, 9) archives and record, 10) ethics, 11) field research and collecting, 12) repatriation, 13) health and safety, 14) hazardous wastes, 15) emergency preparedness, and 16) disposition of orphaned collections. A bibliography is provided for each chapter, including cross references to other publications of the Association of Systematics Collections (ASC) and model policy statements prepared by ASC member institutions. A basic reference for any institution or individual responsible for a natural history collection. 1994. 120 pp., paper. ISBN 0-942924-17-7. \$22 (includes domestic postage, add \$7 for overseas airmail). Prepaid orders should be sent to Association of Systematics Collections, 730 11th Street, NW, 2nd Floor, Washington, D.C. 20001-4521.

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The Dicotyledons of Ohio. Part 2. Linaceae through Campanulaceae, by Tom S. Cooperrider, is the culmination of more than thirty years of study on the Ohio flora. This book describes and illustrates more than 700 species of plants in 77 families. County distribution maps and detailed line drawings are provided for nearly every species. The illustrations and carefully written keys allow for easy identification of many of Ohio's wildflowers. The author's comments on habitat and frequency enhance the usefulness of this publication. Published by Ohio State University Press in

cooperation with Ohio Division of Natural Areas and Preserves and the Ohio Academy of Science. 1994. 656 pp. \$65 (plus \$3.73 per book, Ohio sales tax and \$3.50 per book, shipping and handling). Orders must be prepaid by check or money order made payable to: Division of Natural Areas and Preserves, and sent to Ohio Flora Book, Ohio Department of Natural Resources, Division of Natural Areas and Preserves, 1889 Fountain Square Court, Columbus, Ohio 43224.

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The proceedings of Economic Botany: The Missouri Botanical Garden's 40th Annual Systematics Symposium have recently been published in the *Annals of the Missouri Botanical Garden*, volume 82(1). This symposium, held in October 1993 in St. Louis, covered the spectrum of economic botany from hunter-gatherers to gene-splicing. Six of the seven papers presented at this symposium are included. 60 p. (entire issue 146 pp.). \$21.50 U.S.; \$22.00 non-U.S. \$3.00 handling fee. To order, send check or money order, in U.S. funds payable through a U.S. bank, to Department 11, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A. Orders must be prepaid. Mastercard & VISA orders are also accepted. Phone: (314) 577-9534, fax: (314) 577-9594, e-mail: dept11@mobot.org.

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**XID Services, Inc. -- Expert Identification Systems -- has available the XID Authoring System.** The XID System allows authors to create their own "smart key" or random access expert system for the identification of any group of species, individuals, or objects, i.e., plants, animals, cars, criminals, etc. The system consists of multi-layered menus in which any attribute can be prioritized and described. The simplicity of the XID System makes it extremely user friendly.

As well as creating identification systems for professional scientists, the XID System provides a vehicle to teach classification, taxonomy, logic, and problem solving skills. The authoring system allows students to be involved in the entire process, including selection of subject matter, determination of characters and character states (i.e., color {red, blue, green}), gathering and compiling the data, data entry, error checking, and data correction. Characteristic terminology and database items may be graphically represented using line drawings or color photos.

Call 800/872-2943 or write XID Services, Inc. P.O. Box 272, Pullman, Washington 99163 for information regarding computer requirements or ordering (\$25. for a demo, \$325. for a single station).

## MEETINGS

**National Association of Biology Teachers Convention to be held October 25-28 at the Hyatt Regency at Civic Plaza, in Phoenix, Arizona.** Approximately 2000 secondary and college level educators and scientists from around the world will convene to discuss current issues in biology and life sciences.

Presentations include scientific and legal aspects of DNA evidence; sex at the zoo; gene transfer technology; ecology of the saguaro forests; tropical rainforests; immunology simplified; ecological stoichiometry. Workshops

include: teaching hands-on investigative biology on a shoestring; teaching critical thinking skills; restriction enzyme digestion and gel electrophoresis; teaching concepts in plant biotechnology. Field trips include: Grand Canyon/Oak Creek Canyon--Sedona; Biosphere 2/Casa Grande Ruins; Sonoran Desert Ecology; Desert Botanical Gardens; Painted Horse Desert Tour.

Founded in 1938, NABT is the only national association dedicated exclusively to biology and life science teaching. The nearly 8000 members include science educators, science supervisors, scientists and business and industry representatives--and they teach nearly one million students each year.

Convention fees for regular and spouse members are \$60 if registered by September 15 or \$80 on site; other prices for other situations available. For more information contact NABT at 11250 Roger Bacon Drive #19, Reston, Virginia 22090-5202, or call (703) 471-1134 or (800) 406-0775.

## POSITIONS AVAILABLE

**University of Connecticut Department of Ecology and Evolutionary Biology** seeks a full-time **Collections Manager** to maintain and curate collections of plants and vertebrates used in research and teaching. The principal responsibility will be to manage a herbarium collection with particular strength in the flora of New England and the Neotropics. The Collections Manager also will be responsible for collections of fishes, amphibians, reptiles, birds, and mammals.

The successful applicant will be expected to actively increase holdings in the herbarium through field collections and exchanges with other institutions. Other duties will include placing current specimens and new acquisitions for all collections into a computer data base, managing loans to and from all the collections, facilitating use of the collections by faculty and graduate students, supervising student volunteers and employees working in the collections, and carrying out other department duties as appropriate. Salary negotiable.

Applicants should have an advanced degree (Master's or Ph.D.) in botany or a related field, experience in the management of natural history collections, knowledge of computer data base management, and an interest in collection-based research. Please send a letter, curriculum vitae, reprints, relevant publications, and three letters of recommendation to Gregory J. Anderson, Head, Department of Ecology and Evolutionary Biology, University of Connecticut, 75 N. Eagleville Road, Storrs, Connecticut 06269-3043. Review of applications will begin 15 September 1995 and continue until the position is filled. We encourage applications from under-represented groups, including women, minorities, and people with disabilities. (Search #5A372)

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The **California Academy of Sciences** is reopening its search for an **Assistant Curator of Botany**. Applications are solicited from individuals with primary interest in and commitment to active, field- and collection-oriented research in vascular plant systematics and the curation, operation and development of a major herbarium. Candidates must have a Ph.D., an active research program with demonstrated interest and competence in a particular group of vascular plants and be prepared to participate in a

variety of curatorial, administrative and public educational activities at the Academy. Information about the Academy and its research departments is available on the Academy's gopher server ([gopher.calacademy.org](http://gopher.calacademy.org)) or WWW server (<http://www.calacademy.org>). Applicants should forward a curriculum vitae, description of research goals, copies of significant publications and the names, addresses and telephone numbers of three references to: Human Resources, No. ACB, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118-4599. Deadline for applications is 15 September 1995. \*

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**Harvard University seeks an Information Systems Manager** to provide strategic planning, system analysis, and leadership for the development and maintenance of information systems for the University's botanical and zoological collections. The IS Manager should have a strong background in academic and/or museum computing with detailed operating knowledge of relevant Internet applications. The individual will have oversight responsibility for server systems management including high-level diagnosis and resolution of hardware and software failure. The individual will supervise a Microcomputer Systems Specialist who would provide direct technical support for collections' staff. The IS Manager will participate in collections' community collaborative projects, including major involvement in institutional proposals for extramural funding of such projects.

Requirements include a higher degree in biological or computer science with biological orientation. Preference includes experience with biological databases and network operations at the post-graduate or post-doctoral levels. Four to eight years experience depending upon education and experience with system administration of a Novell network and/or a Unix network. Send inquiries or letter of application, resume and three references to: Robert E. Cook, Harvard University Herbaria, 22 Divinity Avenue, Cambridge, Massachusetts 02138, phone: (617) 524-1718, ext. 102, e-mail: [bcook@arnarb.harvard.edu](mailto:bcook@arnarb.harvard.edu). \*

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**The Harvard University Herbaria are actively searching for a Bibliographer/Data Base Manager (Grade 55).** The successful candidate will maintain and develop the Gray Herbarium Index and the Harvard University Herbaria type data base; enter new data; maintain authority files (collectors, names) associated with these data bases; and answer queries connected with their use, and perform related duties as required. The Gray Herbarium Index includes all names of plants found in the New World published since 1886, and is kept up-to-date. The type data base currently contains information on some 53,000 types held in the collection; it is estimated some 30,000 additional entries are needed before it will be complete for vascular plants. The incumbent will work closely with the Assistant Director for Collections and the Librarian of the Botany Libraries.

Requirements include a Bachelor's Degree required with a Master's Degree in botany preferred. Familiarity with data base management essential; familiarity with botanical nomenclature preferred. 1-2 year's experience helpful. General technical expertise and competency with computers. Experience in the use of Internet-related techniques and tools. Please send résumé and cover letter to Mary Reynolds, Department of Organismic and

Evolutionary Biology, 26 Oxford Street, Cambridge, Massachusetts 02138,  
e-mail: mreynolds@oeb.harvard.edu. \*

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**Longwood Gardens, Inc.** has an opening for a **horticultural taxonomist**. Responsibilities include identifying plants, especially cultivars; continued development of computerized plant records program; and teaching botany and plant taxonomy. Duties include processing data for plant accessions, plant record changes, maps, and tables.

Applicants should have a Ph.D. in Botany or Plant Sciences with experience and interest in systematics of cultivated plants, be proficient with database software (CAD helpful), and should be able to interact with a diverse staff on plant identification and plant records related-issues.

Excellent starting salary and an outstanding benefits package. Please mail your résumé with salary requirements to: Mr. Kiran Taunk, Business Division Manager, Longwood Gardens, Inc., P.O. Box 501, Kennett Square, Pennsylvania 19348. \*

**\* An equal opportunity employer.**