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

FLORA OF NORTH AMERICA NEWS

Organizational Center News

All manuscripts for Volume 3 are in the editing process. Of the 32 families in this volume, 16 are being edited (step 1) by the technical editor, the bibliographic editor, and the nomenclatural editor. In conjunction with comments from those people, the author and the family editor are working together to complete necessary information. The remaining 16 families (step 2) have gone out for regional and taxonomic review.

Volume 3 is both transitional and pivotal. Lessons learned from Volumes 1 and 2 are being reviewed, analyzed, and evaluated, and procedural modifications are being implemented as rapidly and efficiently as possible. In addition, acquisition of a new and more powerful computer and appropriate software for the technical editor permits FNA to prepare manuscripts for publication more efficiently. Consequently the order and methods of manuscript processing are undergoing change. This quest for improved processing and greater precision in scientific treatment is dynamic; FNA participants can expect continuing modifications in procedures, and these changes should help, not inconvenience.

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VOLUME 1 SLIDES - Many of the graphic elements in Volume 1 have been made into color slides and copies are available for purchase at $50. per set. A total of 35 slides have been selected for this set. Most of the slides use the same map of North America used for distributions in Volume 2, Pteridophytes and Gymnosperms, or are graphs and charts. Chapters 1 and 4 are best represented: 11 from Chapter 1 and 16 from Chapter 4.

Captions are included on the slides, although some very long legends are shortened. The textures used on maps in the volume are redone in color for the slides. The slides are a great supplement to Volume 1, Introductory Chapters. They would be an excellent teaching tool for botany/ecology courses. For a full list or further information call Judy at the FNA Organizational Center, 314/577-9515. Payment is due in advance with checks made payable to the Missouri Botanical Garden. Thirty sets are available for immediate mailing.

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Oxford University Press, FNA'S publisher, has the second printing of the **Volumes 1 and 2 available for purchase**. Call 1/800-451-7556 to order the volumes. Check the last FNA newsletter for more complete ordering instructions, or call the FNA office to have a pamphlet and order form mailed to you. The second printing contains some changes; erratum sheets for insertion in first printing copies will be available soon.

Editorial Committee News

A **Chenopodiaceae Summit** was held at the Harvard University Herbaria on January 20-21, 1994. Five FNA authors went to Boston for the meetings: Cliff Crompton from Ottawa, Steve Clemants from Brooklyn, Noel Holmgren from New York, Sergei Mosyakin from Ukraine (via MO), and Stanley Welsh from Provo, Utah. Authors discussed the family description, generic alignments, the key to genera, and the characters to be used in generic and species descriptions. Family editor Leila Shultz commented that they had a very productive meeting.

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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.

NORTH AMERICAN NATIVE PLANT CONSERVATION STRATEGY LAUNCHED!

A strategy for improving efforts to conserve plants in North America was launched at a conference attended by over 70 people representing 15 federal and state land management agencies and 20 professional, botanical, grassroots, and conservation organizations March 21-14, 1994, in Phoenix, Arizona. The conference was held in response to a crisis that exists in our conservation agenda today: native plants make up more than 50% of the species considered endangered in the United States, but programs to protect these endangered plants receive only 2% of the funding. Plants account for 80.6% (250 species) of the candidate species for federal listing in category 1. The conference resulted in the formation of a task force that will work in partnership to: 1) raise the awareness of the public about the importance of plant conservation, and promote the ethical use of native plants; 2) encourage ethical stewardship of our public and private lands; and 3) coordinate information and resource sharing between plant conservationists to assist in the preservation and protection of native plant species. A Federal Native Plant Conservation Committee will: 1) establish common priorities and direction; 2) share agency expertise and resources; 3) support cooperative efforts; 4) develop consistent scientific methodologies; 5) encourage collaborative training programs; 6) coordinate public education and outreach efforts; and 7) support ecosystem management initiatives. It is anticipated that a Federal Plant Conservation Committee Memorandum of Understanding will be signed by 15 federal agencies on May 25, 1994, at the National Botanical Garden.

Because the North America Native Plant Conservation Strategy, which involves scientific research, data sharing, and public outreach, relates so closely to the Flora of North America project, I have offered the Flora of North America Newsletter as a means for the task force and committee to communicate with participants and with the North American botanical community. Flora of North America will sign as a collaborating organization on the Memorandum of Understanding, as well. Contacts for the Strategy are Peggy Olwell, National Park Service, 202/343-8125; Ken Berg, Bureau of Land Management, 202/452-7764, and Chris Topic, U.S. Forest Service, 202/205-1599. --Nancy R. Morin

NATIONAL BIOLOGICAL SURVEY NEWS

H. Ronald Pulliam has been appointed Director of the National Biological Survey, effective immediately. Pulliam is currently the Director and Professor of the Institute of Ecology at the University of Georgia in Athens. His research specialties are in conservation ecology, ecosystem

management, and avian population dynamics. Recently he has focused on predicting the impact of land use changes on animal population trends.

A full report on the National Biological Survey and other botanically or biologically related activities in the federal government will appear in the next newsletter.

COMPUTER NEWS

DELTA - Dr. M. J. Dallwitz of CSIRO, Canberra, Australia, principal author of the DELTA System, conducted a four-day workshop in St. Louis October 12-15, 1993, following the fall Editorial Committee (EC) meeting, to introduce the DELTA System of data management. The DELTA System (DEscription Language for TAxonomy) is a data handling format with programs for producing natural language descriptions and keys, for identification and information retrieval, and for conversion of datasets into formats for other uses, such as phylogenetic or phenetic analyses. DELTA is perhaps the best developed of the systems tailored to the needs of systematic biology.

The DELTA procedures are documented in two hand-out books, A Primer for the DELTA Systems, 3rd ed., by T. R. Partridge, M. J. Dallwitz, and L. Watson, and User's Guide to the DELTA System, 4th ed., by M. J. Dallwitz, T. A. Paine, and E. J. Zurcher; both were prepared in 1993 and are distributed by the CSIRO in Canberra. The Primer is essentially an instructional guide and is used while the novice is learning the system. The User's Guide is a user-friendly documentation for many of the functions within DELTA.

The center of the DELTA System is a standardized but flexible format for coding and storing taxonomic information. A series of associated programs then perform various tasks with the encoded information. Data encoding is done through three related DELTA data files: (1) a characters file (CHARS) contains a numbered list of characters and character states that are used to describe the taxa, (2) an items file (ITEMS) contains the descriptions of the taxa as coded by character and character states, and (3) a specifications file (SPECS) contains information about the other two files, e.g., the total number of characters. It was clear that the satisfactory application of DELTA rests upon a well-conceived character list.

DELTA includes several programs to achieve the various goals in the system. The program CONFOR is invoked to convert DELTA-format data in the CHARS, ITEMS, and SPECS files into formats utilized by other programs, thus CONFOR is the bridge to the programs that prepare natural language descriptions, keys, etc. CONFOR also accesses a file called CHECK that samples other files for errors of various kinds.
One of the most fascinating programs in the DELTA System is INTKEY, designed for interactive identification and information retrieval. Participants in the workshop brought in fresh specimens and worked through the interactive identification system, and then asked questions of INTKEY about different kinds of plants; i.e., plants were identified and information was retrieved. The potential for the INTKEY program is indeed impressive. A criticism was noted in that the system works only with the information that has been introduced into the database, but that criticism is just as valid for a printed book. DELTA can be adjusted at any time to account for new information, and therefore the system can be more easily updated than books.

DELTA offers several things to consider. First, it is a streamlined

procedure, where data from a contributor can be assimilated into natural language descriptions that all share parallel entries of data. Second, it provides for the creation of logically constructed keys, wherein allowances can be made for the relative utility of different characters. Third, it builds a database of readily manipulated information that can be moved to other systems, e.g., into a researcher's specialized file for phyletic analysis. Finally, DELTA provides a means to create an open-ended, interactive system of identification and information retrieval.

DELTA is not the only computer system to offer these possibilities, but it is clearly well-developed and it is the system-at-hand. Moreover, the DELTA System is available to each of us through various internet hosts, from which it may be downloaded and installed on a PC. Users of DELTA have free access to the entire system, but after a try-out period, users are asked to pay a modest registration fee that allows access to a trouble-shooting service. Publications incorporating DELTA are asked to cite the DELTA System among the references.

DELTA is still evolving, and Dr. Dallwitz told the participants that a new and more encompassing version of DELTA is in preparation. The new version is being designed to absorb and incorporate the DELTA Systems that are currently in operation. --Ted Barkley

Addendum: The latest version of the DELTA programs, and several data sets, are available by gopher or anonymous ftp from the following Internet hosts:
huh.harvard.edu (directory: /pub/software/delta)
life.anu.edu.au (directory: /pub/biodiversity/delta)
spider.ento.csiro.au (directory: /delta) --Debbie Kama

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LL,TEX TYPES DATA AVAILABLE: The **Plant Resources Center** at The University of Texas at Austin is pleased to announce the availability of information in the LL,TEX Type Register via the Internet. The LL,TEX Type Register is located on The University of Texas Gopher server and can be accessed there or from the Harvard Biodiversity Gopher menu. The University of Texas Type Register contains verified information on LL,TEX types of over 5100 names. The document was indexed using WAIS and can be queried by key words in any of 19 fields. The University of Texas Type Register will also be published in the Phytologia Memoirs Series and will be available in Spring 1994. This project was funded by National Science Foundation (grant nos. BSR-8716949 and BSR/DEB-9020277) whose support is gratefully acknowledged. For further information contact Carol A. Todzia, Dept. of Botany, University of Texas, Austin, TX 78713, PH: (512) 471-9437, e-mail: ctodzia@emx.cc.utexas.edu.

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GRAY HERBARIUM CARD INDEX on "gopher": The Internet file now contains nearly all of the original Gray Card Index, plus all entries made since the last microfiche edition. The only cards excluded were about 14,000 that contained problematic information and needed to be checked. Those cards are being edited and will be added as they are cleaned up.

If you are looking for names published in a favorite genus during the past

year, try looking for the genus name and the year, for example, *Carex* and 1993; or *Nexom* and 1992. Mention availability of this file to FNA authors and anyone needing to know newly published names of vascular plants.

The original Gray Card Index is now going through a process to validate the names of authors, publication, collectors, genus name and ranks against accepted standards. Over the years various abbreviations have been used for the same piece of information. The validation process will also add the family name to each card for the first time. This cleanup process will take several months and will replace the current Internet file once it is completed. --David Boufford

REQUEST for PUBLICATIONS

Systematics Literature - Do you have scientific books or journal series that you no longer use and would like to donate for distribution to Cuba? The Association of Systematics Collections (ASC) is developing a program to exchange systematics and biodiversity information between North American institutions and Cuban institutions. Please contact the ASC office with titles of books, journals, or reports in systematics/biodiversity (especially related to Caribbean biota) you are willing to donate, and we will arrange to ship the materials to an appropriate institution in Cuba. For more information and to contribute, contact: Elizabeth Hathway, ASC, 730 11th Street, NW, Second Floor, Washington, DC 20001-4521, (202)347-2850, fax: (202)347-0072.

PUBLICATIONS

Weeds 2.0, for identification of weeds of the western United States, by Callihan, R.H., R.T. Dobbins, and S.L. Carson, 1993. University of Idaho, Plant Science Division.

This publication consists of a computerized database of western weeds, an interactive program for their identification, and a well-written user's guide. The program is written for DOS machines (no Macintosh version yet) and designed for individuals without much in the way of botanical training. Covering 970 species of weeds of the western USA and western Canada, **WEEDS2.0** is one of four programs for identifying weeds of North America north of Mexico. The companion programs include **SOWEEDS**, for the southern USA (933 species); **NCWEEDS 2.0**, for the north central USA and central Canada (780 species); and **NEWEEDS 2.0**, for the northeastern USA and eastern Canada (780 species). The single-copy cost is $84.99 ($64.99 with educational discount), available from Weeds Diagnostic Laboratory, PSES Department, University of Idaho, Moscow, ID 83843.

WEEDS 2.0 is easy to use, quick to learn, and generally seems to provide the correct answer. The character state choices are clearly explained and illustrated in the user's guide; the definitions (but not illustrations) are also available within the program simply by hitting the F2 key. The only required step in an identification run is a primary distinction between "grass-like" and "non-grass-like" plants. All other character choices are left to the user.

Fruit characters would be more useful if descriptive character choices were used rather than relying on the inconsistencies of traditional fruit classification. The authors are currently reevaluating their approach to fruit characters, so this should be rectified in future versions. I had a few minor

criticisms relative to specific characters and character states, but after contacting the authors, my suggestions have been incorporated. The authors are very open to comments and suggestions.

The user's guide is thankfully brief and easy to use. It includes a clear (and short!) tutorial exercise, a list of menu keys, sections on characters (with descriptions and illustrations), and a table listing the weedy species with specific page references to 11 regional weed manuals and 4 floras (The Jepson Manual, Flora of the Great Plains, Gray's Manual of Botany, and Flora of the Pacific Northwest).

There were minor inconsistencies in the data set (Sicyos angulatus was listed as having burr-like fruits, but is not listed where it should be, under "flowers spiny" - now corrected by the authors), but overall, this is a useful tool for the identification of weedy species in the western US. Because the intended user is assumed to have a low level of botanical knowledge, the program may not be of much use to professional botanists. It is fun, however, and I appreciate the admonition given on the first page of the user's manual, "Do not lose this guide!" --reviewed by Denis Kearns

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Checklist of the Vascular Plants of Tennessee by B. Eugene Wofford and Robert Kral. 1993. Sida, Botanical Miscellany, No. 10, is available from Botanical Research Institute of Texas, Inc. for $15. postpaid, payment should be made in advance. Order from SIDA, Botanical Research Institute of Texas, 509 Pecan Street, Fort Worth, TX 76102.

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Field Guide to Coastal Wetland Plants of Southeastern United States by Ralph W. Tiner. 1993. University of Massachusetts Press, Amherst - This handy guide is a companion to Tiner's 1987 book covering the Northeast. It is layed out similarly, with a detailed introduction to southeastern coastal wetland ecology, an introduction to the guide and its use, and a lengthy set of keys to the species. Species treatments are followed by a summary of wetland distribution by state, a bibliography, and a glossary.

A change from the earlier book is inclusion of an illustrated, semidichotomous key to herbaceous species. Dichotomous text couplets lead to terminal clusters of species distinguished by illustrations with diagnostic characters in captions. This approach will take getting used to for many readers, but seems to work for most of the species. It is a problem with large or taxonomically complex genera, such as Aster and Ludwigia.

The species treatments consist of morphological descriptions, summaries of flowering times, distributions, and habitats, and the status of each species as a wetland indicator. Notes on morphologically similar species are given for most taxa. They are accompanied by illustrations by Abigail Rorer. This book would be perfect as a text for college-level field ecology courses in the region, and will also serve as a useful reference for property managers and other professionals dealing with wetlands. Organization of the book is strongly ecological, with grouping of plants by habitat and growth form. It provides more ecological background than many field guides, but may prove a bit daunting for neophyte wildflower enthusiasts.

329 pp., 14 plates, numerous drawings and maps in text. Softcover, U.S. $17.95 (ISBN 0-87023-833-7), hardcover U.S. $50.00 (ISBN 0-87023-832-9). Available from The University of Massachusetts Press, P.O. Box 429, Amherst, MA 01004. --reviewed by George Yatskievych

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Order & Diversity in the Living World: Teaching Taxonomy & Systematics in Schools, by Jorge V. Crisci, Joseph D. McInerney and Patirica J. McWethy, has been published by the International Union of Biological Sciences (IUBS) and the National Association of Biology Teaches (NABT) in recognition of the need to educate the public regarding the value of biodiversity and the interdependent role that living species play in the Earth's varied ecosystems.

The booklet includes three background chapters: Why Teach About Order and Diversity in the Living World?, What Questions Do Systematists Ask?, The Goals of Education in Systematics, and a Glossary, References and 10 sample instructional activities for students ages 6-18.

This publication summarizes what we know and need to know to assess the degree of change in biodiversity, and provides innovative classroom activities to ensure that future citizens have a basic understanding of methods of classification. It would also be useful to those developing interpretation programs in botanical gardens and natural history museums.

Systematics plays an important role in supporting conservation programs, environmental monitoring, agricultural production, biotechnology and geologic prospecting. To date, only about 1.5 million species of 5-30 million species on earth have been described. It is critical that biology educators promote understanding of complexity of the living world, the interrelationships of species and the role that organisms play in providing food, industrial products and medicines.

Available for $12, plus $2 for shipping and handling. Send, with a check payable to NABT, your name and address to: NABT, 11250 Roger Bacon Dr., Reston, VA 22090 or call (703) 471-1134.
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The Association of Systematics Collectins has published a report entitled **Guidelines for Institutional Database Policies**, the result of its two-year study and workshop on data sharing and database ethics. The report contains guidelines for natural history institutions housing specimen-based databases and addresses legal ownership, responsibilities of owners and users, and financial support. The report contains examples of data sharing agreements, presentations from the data sharing workshop, ASC position on collections use agreement, and references on data sharing and transfer policies. 76 pp., 1993. Copies available for $12.00 (includes postage) from ASC, 730 11th Street, NW, Washington, DC 20001-4521, 202/347-2850.

NEWS AND NOTES

WEED ADVISORY: Tropical Soda Apple (*Solanum viarum* Dunal), a newly introduced weed from South America, has invaded pasture land and natural areas and is causing serious losses in forage production in central and south Florida. It is a perennial herb native to Argentina and Brazil. First collected in south central Florida in 1988, it is now estimated to infest

more than 400,000 of improved pastures and over 30,000 acres of wooded areas there. It has also begun to appear in croplands, in state parks, and is moving northward. Currently, the most northern confirmed infestation is on a cattle farm north of Gainesville, Florida. However, there has been an unconfirmed sighting of the plant in Mississippi. Botanists in southeastern U.S. states are urged to check their herbaria to determine whether tropical soda apple has already been collected in their state. If so, contact Randy G. Westbooks, USDA-APHIS, PO Box 279, Whiteville, NC 28472, ph. 919/648-4115.

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TOXIC PLANT INDEX - Pictures of poisonous plants of North America/Oceania are being sought by a project sponsored by the University of Hawaii under the direction of Dr. Roger Baldwin, University of Hawaii at Hilo. Dr. Baldwin is the author of "Hawaii's Poisonous Plants" and is a recognized expert in the field. He is developing a CD-ROM database for IBM compatibles that will present information on all plants in the United States (including Hawaii and Puerto Rico) and Canada described as toxic in the literature. The CD-ROM database is being developed for poison centers, physicians, veterinarians, botanists, plant toxicology researchers, students, libraries, and interested lay people. It will contain information on the plant genus, common names for toxic species in the genus (in English, Spanish, Japanese, Chinese, Filipino, and Hawaiian and in any other languages in which plant names are available), botanical classification, edible and toxic parts, chemical nature of the poisons, toxicity, symptoms, first aid, and color photographs. A physician's version may also be produced which will also include specific medical treatments.

Phase 1 of what is planned to be a 3-phase project is completed. Phase 1 was the development of the poisonous plants index, phase 2 is the development of the database and search engine, and phase 3 the collection of color photographs of significantly toxic plants. Phase 2 is underway utilizing a popular PC-compatible database program that can handle color image files along with textual and numeric information. CD-ROM was chosen as the delivery medium because of its increasing popularity and accessibility and its ability to store large volumes of image data required. Digitized photographs of the plants in BMP, GIF, TIFF, PICT or other popular image file format is preferred, but good quality slides could also be used.

Anyone interested in the project or who has photographs that might be used is encouraged to contact Dr. Baldwin at University of Hawaii at Hilo, 200 W. Kauili St, Hilo, Hawaii 96720; Phone: (808) 933-3383.

MEETINGS

Southwestern Botanical Systematics Symposium: "Beyond the Phylogeny: Uses of Phylogenetic Trees" will be held at the Rancho Santa Ana Botanic Garden as its 10th Annual Southwestern Botanical Systematics Symposium on May 28th.
Papers will be presented by Dr. Aaron Liston, Oregon State University; Dr. Jeff Doyle, L. H. Bailey Hortorium, Cornell
University; Dr. Vicki A. Funk, Smithsonian Institution; Dr. Spencer Barrett, University of Toronto; Dr. Brent D. Mishler, Duke University; Dr. Jonathan Wendel, Iowa State University. The keynote speaker is Dr. Warren H. Wagner, University of Michigan.

The cost to attend this symposium is $50.00 per participant ($45.00 for students). This fee includes the Friday evening social, the boxed lunch, and dinner on Saturday. To register, please send your name, address and telephone number along with a check payable to: Rancho Santa Ana Botanic Garden, Systematics Symposium, 1500 North College Avenue, Claremont, California 91711. Register early as space is limited. For more information call (909) 625-8767 ext. 251.

FUNDING AVAILABLE

THE BARBARA J. HARVILL BOTANICAL RESEARCH FUND FOR FLORISTIC RESEARCH IN VIRGINIA - The Barbara J. Harvill Botanical Research Fund was endowed by friends and family of the late Barbara J. Harvill to encourage floristic work in Virginia. It provides small grants to botanists without an institutional base of support for such work. Most of the awards requested to date have been for mileage costs for visits to herbaria, lodging, and certain kinds of field equipment (plant presses, for instance) can also be covered. Please send your letter of application to Donna M. E. Ware, Curator, Herbarium, Department of Biology, College of William and Mary, Williamsburg, VA 23218.