

Volume 6, Number 4
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Nancy R. Morin and Judith M. Unger, co-editors

FLORA OF NORTH AMERICA NEWS

Organizational Center

Volume 3 is moving along, with manuscripts finishing round one, which includes technical editing, and bibliographic and nomenclatural checks. Manuscripts are then sent back to the family editor, who confers with the author on suggested changes. Illustrations are well on their way, with authors and family editors evaluating preliminary sketches. Work on maps uses an in-house method different from the off-campus one used in the fern/gymnosperm volume. Regional specialists have been invited to review treatments of taxa occurring in their area and many of the forty-plus have accepted. Manuscripts are sent to taxonomic and regional reviewers as treatments are ready for review.

The 1992 revision of the Guide for Contributors will be sent to all confirmed authors. It has revisions of instructions and sample treatments. This revision of the guide is comb-bound instead of being in a three-ring binder. In addition to the Urticaceae sample treatment, a treatment of the monogeneric Stemonaceae is included. Additional samples will be sent to authors of Poaceae, Asteraceae, and Bryophyte treatments.

About 90 bryophyte invitation letters were sent to potential authors in October. The response to these invitations has been very positive.

Volumes 1 and 2 have completed the first part of final processing with Oxford University Press. Helen Jeude, FNA's technical editor, worked closely with the OUP copy editor. Galleys for the fern/gymnosperm volume and page proofs for the introductory chapters are expected in March. Publication is scheduled for late summer.

Manuscripts received between 1 May 1992 and 31 December 1992

Volume 3

George Buddell and John Thieret: Saururaceae

Kerry Barringer: Aristolochiaceae

Bruce Ford: *Actaea*, *Caltha*, *Coptis*, *Helleborus*, *Hepatica*,
Hydrastis, *Isopyrum*, and *Nigella*

Alan Whittmore: *Aquilegia* and *Ranunculus*

James Pringle: *Clematis* - 21 species

Gwynn Ramsey: *Cimicifuga*

Michael Warnock: *Delphinium*

Curtis Clark: *Eschscholzia*, *Dendromecon*, *Canbya*,
Stylomecon, and *Romneya*

Richard Wunderlin: Moraceae - 6 genera

Volume 11

Ralph Brooks and Steve Clements: Juncaceae

William Crins: *Scirpus* sect. *Baeothryon*, *Carex* sect.
Firmiculmes, *Spirostachyae*, *Montanae*

Robert Kral: *Rhynchospora*

Fred Utech: *Amianthium*, *Chamaelirium*, *Helonias*, *Medeola*,
Nartheceum, *Scoliopus*, and *Xerophyllum*

Anita Cholewa and Doug Henderson: *Sisyrinchium* and

Olsynium

Robert Cruden: *Echeandia*
Deborah Q. Lewis: Burmanniaceae

Volume 4

Arthur Gibson: *Carnegiea, Lophocereus, Stenocereus,*
and *Bergerocactus*
Mark Hooten: *Harrisia, Cephalocereus, and Acanthocereus*

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.

ITEMS for sale having the FNA name and logo include:

- | | |
|---|-----|
| T-shirts , all cotton, | \$8 |
| white: only S and M; | |
| teal: only L and XL | |
| green coffee mugs | \$6 |
| cloisonne lapel pins | \$4 |
| white painter's caps | \$2 |
| wheat or white rectangular buttons | |
| with habit of <i>Floerkea</i> | \$1 |

For delivery, add \$2 each (for T-shirts and mugs) for postage and handling, all prepaid please.

COMPUTER NEWS

Computer Mapping at CAN - The National Herbarium of Canada (CAN), has been mapping vascular plant distributions on a PC since early 1991 using the Canadian-developed mapping software QUIKMap (AXYS Software Ltd., Sidney, B.C.) in conjunction with a file and database manager inFOcus (Earth & Oceans Ltd., Dartmouth, N.S.) ---the two together make up a mini GIS.

QUIKMap is a very versatile and affordable mapping program that was developed to run as a free-standing mapping system using dBase III and compatible database file formats and now also supports dBase IV. If you have a 386-based PC and a reasonable-sized hard drive and a laser printer, you could be in the PC mapping business for under \$800, which includes the basic mapping software with the digitized map of North America. A map of the world is also available. It works with mouse and keyboard control for accessing the menus and allows for the whole map or zoom windows to be displayed in eight projections. Records can be displayed in a variety of symbols (and colors) using the information in a database file using lat/long or UTM coordinates, and records can also be added directly to the active database on screen by pointing the cursor to a map locality. Map layers can be toggled on and off and line thicknesses and colors changed. Polygons can be digitized on screen, or with digitizing tablets, and filled with numerous hatch patterns. Camera-ready maps can be produced on laser printers and plotters, and maps generated on screen can be saved to plotter files and PCX files.

Public domain electronic gazetteer data are available that can be used for looking up lat/long coordinates for populated places and centroid coordinates for all the counties in every state. These are available on

magnetic tape at nominal cost from the US Geological Survey, Reston, Virginia. Populated places databases, the same information as available from the USGS, are also available on disk from some mailhouse suppliers of public domain software. We have these, as well as a large geographical place name database for all of Canada, set up as database files. A place can be located within seconds, using dBase, for determining coordinates for mapping specimens.

Information Request. I would very much like to hear from those of you who are using a PCmapping program or GIS. Let me know the name of the software, what you like about it in particular, any special applications you are using it for, if not just for producing dot maps, and an address for the supplier. Early in 1993 I will be putting together a report on the future needs for GIS at the Canadian Museum of Nature. Your responses would help me get a handle on the status of GIS and PC mapping in the systematic community and hopefully provide me with some new insights that may be helpful in making recommendations for changing or expanding our GIS efforts here at the Museum.

I would be interested in knowing what kinds of special specimen management software is being used for recording herbarium records and producing labels using PCs, or even how standard databases software such as dBase or FoxPro are being used for specimen and herbarium management and database creation. If enough responses are received, I will write a brief summary on the topic of computer mapping by systematics in a future issue of the FNA Newsletter. Please write to Erich Haber, Botany Department, Canadian Museum of Nature, P. O. Box 3443, Station D, Ottawa, Canada, K1P 6P4 (FAX: 613-990-6451).

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Makers of distribution maps will want to know about the Geographic Name Server, Copyright 1992, Regents of the University of Michigan. If you have access to telnet, enter telnet martini.eecs.umich.edu 3000. Then you can enter '?' or 'help' for assistance or 'info' for news and hints. Basically you enter a place name (mainly in the U.S. for now but with plans for expansion soon) and get information including county, elevation, latitude and longitude, as well as other things not useful for mapping. If you cannot connect using TELNET martini.eecs.umich.edu 3000, try telnet martini.eecs.umich.edu/port=3000. If you still have trouble, direct questions to libert@citi.umich.edu. ---editors

ONGOING PROJECTS

The Jepson Manual: Higher Plants of California is to be published by the University of California Press in late January 1993. Final editing and page-proofing were completed in September. The last pages of camera-ready copy were delivered to UC Press in mid-November. The Jepson Manual will be composed of 1424 pages and will consist of an Introduction, Keys to Families, Taxonomic Treatments of Ferns and their Allies, Gymnosperms and Angiosperms. The introductory material includes an illustrated glossary of accepted terminology, discussion of geographic subdivisions used in the treatments, and brief narratives on geological and floristic history of California, horticultural information, and sensitive species. Taxonomic treatments were contributed by 186 authors and subsequently edited for terminology and style. Within the manual, 173 families, 1222 genera, 5862 species, and 1169 infraspecific taxa are

recognized. Of these taxa, 3423 species are considered native, of which 1416 are considered endemic. The taxonomic treatments within the three major groups of vascular plants are arranged in alphabetical order, except the angiosperms, in which dicot families precede monocot families. A total of 2178 illustration units with 9 per page complement the text. The illustrations are designed to emphasize morphologic variation and illustrate diagnostic key characters whenever possible. Appendices include a floristic summary, a narrative and summary on phylogenetic classification, and a synonymy limited to reconciling differences between treatments in The Jepson Manual, Munz's A California Flora, his subsequent Supplement, and recent literature.

BOTANICAL NEWS

Nevisia cliftonii (Rosaceae: Kerrieae), an intriguing new relict species from California, discovered. During the course of conducting botanical investigations in northern California in May 1992, the third author and Glenn L. Clifton stopped at an exposed limestone area on California Highway 299 east of Redding that had intrigued them for years. At the base of a shaded north-facing slope, they collected a puzzling rosaceous shrub that they could not recognize to genus. It was shown to the senior author, who, after collecting additional material and confirming the shrub as Rosaceae, enlisted the assistance of the second author, who was in the midst of preparing the treatments of several rosaceous genera for The Jepson Manual: Higher Plants of California.

After all Rosaceae in various western floras (e.g., Munz 1959; Hitchcock et al. 1961) were eliminated, the shrub was keyed to tribe Kerrieae in Hutchinson (1964). Kerrieae has usually been circumscribed to include three monotypic genera: Kerria D.C. and Rhodotypos Sieb. & Zucc. of eastern Asia, and Nevisia A. Gray of the southeastern United States. A comparison with herbarium material at CAS-DS and UC-JEPS indicated that the shrub was unequivocally Nevisia, to the extent that the initial suspicion was that the California material represented an escape from cultivation. Subsequent detailed morphological examination, however, supplemented by the discovery of two additional populations the following month, confirmed that it was indeed a distinct new species of Nevisia, the first addition to the tribe in 134 years!

KEY TO THE SPECIES OF NEVIUSIA

1a. Petals absent; leaves broadly lanceolate to ovate (cordate), developing after or during anthesis, finely toothed and \pm crenulate, teeth \pm mucronate; stamens ca. 100+, 4--7 mm long; sepals 3.5--10 mm long at anthesis, oblanceolate-obovate to elliptic, with > 6 teeth; style 5--6 mm long; southeastern United States.....*N. alabamensis*

1b. Petals present, white, oblanceolate, 4--6 mm; leaves ovate to cordate, developing before or during anthesis, coarsely toothed and shallowly lobed, teeth apiculate; stamens ca. 50+, 4--5 mm long; sepals 3.5--6 mm long, \pm obovate with = 6 teeth; style \pm 3 mm long; northern California.....*N. cliftonii*

Ecology. The three known occurrences are well spaced around the eastern half of Lake Shasta northeast of Redding, 60--80 kilometers south of Mount Shasta, with an elevation range between 300 and 500 m. All sites are on limestone substrates in shaded cool-air canyons adjacent to creeks. Limestone is relatively rare in northern California, centered around Shasta

Lake where access to many areas is extremely limited because of the rugged, densely forested terrain with few roads or trails. Limestone is likewise a common substrate for N. alabamensis, which also occurs on sandstone, sandy loam, and shale.

Biogeographic significance. Neivusia cliftonii is a remarkable addition to the California Floristic Province. The immediate interpretation is that Neivusia is an old, formerly widespread genus with relicts in forest refugia separated by the uplift of the western Cordillera and the formation of the Great Plains. It is therefore immensely satisfying that, by serendipity, Wolfe and Wehr's recent work (1988: 181) came to our attention, wherein a fossil "aff. *Kerria*" is mentioned from early middle Eocene montane assemblages in the Pacific Northwest. Wolfe suspects (pers. comm.) that this fossil, from the Princeton flora of southern British Columbia, was probably closest to Neivusia cliftonii. ---by James Shevock, Department of Botany, California Academy of Sciences; Barbara Ertter, University and Jepson Herbaria, University of California at Berkeley; and Dean W. Taylor, Biosystems Analysis Inc., Santa Cruz.

PUBLICATIONS

Vascular Plants of Wyoming, Second Edition, 1992, by Robert D. Dorn, illustrations by Jane L. Dorn, 340 pages, is available. It includes: keys to 123 families, 662 genera, 2398 species, 709 varieties; separate keys for aquatics and woody plants; both flower and fruit keys for the Mustard and Carrot families and for the Milkvetches; descriptions for families and genera; over 250 illustrations; 3 new combinations, 2 new species; 5 7/8 inches wide, 9 inches long, 3/4 inch thick; paper cover with signature stitched binding. It can be ordered from Mountain West Publishing, P.O. Box 1471, Cheyenne, WY 82003, for \$13.00 postpaid in U.S. (Wyoming orders add sales tax for your county: 3% - \$0.39, 4% - \$0.52, 5% - \$0.65)

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New York State Rare Plant Status List, edited by Stephen M. Young. This new edition from the New York State Natural Heritage Program lists all rare vascular plants in New York State with information on counties of occurrence, global and state rarity ranks and phenology. August 1992, 82 pp. No charge. Available from Botanist, New York Natural Heritage Program, 700 Troy-Schenectady Road, Latham, NY 12110-2400.

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Non-Timber Products from Tropical Forests, Evaluation of a Conservation and Development Strategy, edited by Daniel C. Nepstad & Stephan Schwartzman, contains fourteen chapters based on papers and discussions of an international symposium convened in Washington, D.C. This volume in the Advances in Economic Botany series brings together an interdisciplinary array of studies on extractive products and extractive economies by the foremost scientists in the field. Included are discussions of the biological, cultural, political and economic contexts of non-timber forest product extraction and trade. Case studies from Amazonia, Africa, and Southeast Asia are presented. Order No. AEB 9; ISBN 0-89327-376-7; paper; November 1992; 176 pp. U.S. orders: \$22.70; non U.S. orders \$23.90: (All orders are prepaid in U.S. currency and include postage and handling.) Mail to: Scientific Publications Department, The New York Botanical Garden, Bronx, New York 10458-5126, U.S.A.

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Commercialization and Wildlife Management: Dancing with the Devil, edited by Alex W. L. Hawley - A group of prestigious wildlife professionals discuss why there is not much wild anymore, and what should be done about it. The book follows the links between historical aspects of wildlife management and future trends. Wildly disparate views and opinions are united by the common thread of exploring the role of commercialization in wildlife conservation. Some topics include: origins of wildlife management in the western world; failures in wildlife management: opportunities for success; who is accountable: the ethics of conservation.

For information contact Krieger Publishing Company, P.O. Box 9542, Melbourne, FL 32902-9542; phone 407/724-9542, fax 407/951-3671.

NEWS AND NOTES

What is a Native Plant? Does that seem like a dumb question? We all know without doubt that [to Arizona] a saguaro is a native plant while a salt-cedar is not. Native plants are like love or sleep. If you are the type that has to define them, you obviously don't know what they are. If you have ever tried to write an ordinance dealing with revegetation issues, you have probably had the embarrassing experience of discovering that you aren't so sure after all. Let's look at some attempted definitions:

1. Native plants are the "common plants generally found in an area." These include palo verde, desert-marigold, mesquite, saguaro, ponderosa pine, tumbleweed, lovegrass----whoops.
2. Native plants are "those plants that arrived in our area on their own and were not introduced by man." This raises problems of knowing what plants were actually introduced by man, especially pre-Spanish man. Perhaps mescal or a yucca was cultivated by the Hohokam. Does anyone have a good species list from 1066 or 1492?
3. Native plants are " those plant that arrived in an area on their own and were not introduced by man in the last 100 years." Isn't this one a bit eurocentric? What is botanically different about plants introduced by Anglos as opposed to O'Odham? Or is the difference the number of generations?

Now let's look at the dictionary definition of a native: "Being such by birth or origin." If we used that definition, an exotic plant would become native in the second generation, just as a native Arizonan is one born here even if the parents came from Peoria. (The only real Native Americans, however, are those whose ancestors arrived here before the conquest.) That doesn't work.

How about "Originating, growing or produced in a certain place; indigenous as opposed to exotic or foreign." That has all the problems of the definition above, except it does not include those "introduced from outside." Since a lot of southern Arizona species arrived within the past 10,000 years, they would technically be indigenous. Actually, "indigenous" is probably closest to what we really mean, but would you prefer to belong to the "Indigenous Plant Society?"

"Who cares?" you say. "I know what I mean." Sure but put that into an ordinance. Try telling someone in the construction business that they must revegetate with native plants, without telling him or her what natives are. And try taking him or her to court for the crime of planting a non-native, without being able to prove that that plant really is non-native--and to do that you need to know what a native is.

Of course you could just list them, but that brings up another problem. Any list is bound to exclude someone's favorite species unless it is many pages long. And one has to have good reasons for putting plants on a list or leaving them off. I actually saw a list of natives for Pima County which included the Canary Island Palm. Who am I to say that's not now native?

One legal attempt to define native referred to plants naturally found within a certain number of feet of the property in question. Plants may be native to riparian areas, but not surrounding lands. And that would mean the creosote flats would have to be revegetated with creosote where the landscaper might have preferred saguaros.

I think you get the picture. Now that the Society has a position on revegetation and a strong statement of principles, it would help to know what we are talking about. If anyone has found a good working definition of "native plant" please send it to the Editor [of The Plant Press, the Arizona Native Plant Society, P.O. Box 41206, Tucson, AZ 85717] for further consideration. This right answer could make you a winner, especially if you're a "native" Arizonan. --by Barbara Tellman, taken from The Plant Press, the Arizona Native Plant Society, Vol. 16, No. 3, Fall, 1992

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The Center for Plant Conservation and the USDA Forest Service are banding together to save rare and threatened plants in national forests and on grasslands. The two organizations signed a landmark Memo of Understanding at Rancho Santa Ana Botanic Garden, Claremont, California, during the Center's Annual Meeting of Participating Institutions on 16 November 1992. Under the agreement, native, imperiled plant populations will be conserved in the wild, and the organizations will work jointly to further public education and understanding of the plight of endangered plants in the United States.

The Center for Plant Conservation, headquartered at the Missouri Botanical Garden in St. Louis, works with a network of 25 botanical gardens and arboreta nationwide to collect and maintain endangered plants. This National Collection consists of more than 400 different species of threatened and endangered plants. The Collection is used for germplasm storage, research, education, and as potential stock to reestablish species in their native habitat.

The Forest Service manages 191 million acres of public land, ranging from subarctic Alaska to tropical Puerto Rico, including lands in 43 states comprising 156 national forests and 19 national grasslands. The Forest Service is responsible for the protection and management of fish, wildlife, and plant habitats, and its lands provide habitat for at least 81 federally listed threatened or endangered plants and for another 1650 sensitive plant species.

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Scientists identified Canada's oldest tree while checking a clearcut on Vancouver Island. Trouble was, loggers had already felled the 1636-year-old yellow cedar and left it behind as waste wood. The venerable tree first sprouted needles back when Buddhism was taking root in China, and the Roman Empire was adopting a new religion--Christianity. -taken from Common Ground Vol. 4 No. 1 Nov-Dec 1992

MEETINGS

Restoring Diversity: Is Reintroduction an Option for Endangered Plants? April 20-22, 1993 --- Reintroduction is used increasingly by government agencies, conservation groups, and the private sector as part of strategies to conserve biological resources. Reintroduction offers the potential to incorporate rare plants into community and ecological restoration and management projects. However, much of this effort is experimental and conducted in the absence of national policy guidelines or understanding of its long-term biological significance. Moreover, reintroduction and restoration may have important consequences for national policy on protection of existing populations and habitat.

The Center for Plant Conservation is holding a three-day symposium in St. Louis to examine these issues. Symposium topics will include: issues and principles in rare plant reintroductions; strategic and political considerations; ecosystem management practices; biological significance; technical feasibility; case studies; mitigation and rare plant reintroduction; policy analysis and guidelines. The expected results of the symposium will be a book of contributed papers, and national guidelines that can be used for reintroduction projects by agencies and organizations throughout the country.

The call for posters and papers appropriate to the symposium has a deadline of March 1. Hotel reservations should be made to the Clarion Hotel, site of the symposium, by February 19. Call Marie Brueggemann at 314/577-9450 for information or reservation forms.

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National Association of Biology Teachers 1993 Convention entitled Biology In the 90's: New Directions, New Challenges BOSTON, NOVEMBER 17-21, 1993 --- The NABT national convention offers short course presentations, hands on workshops, commercial workshops, lectures, symposia, contributed papers, general sessions, featured and update speakers, panels, demonstrations, poster sessions, receptions, luncheons or special events of each NABT section, exhibits, and field trips. Presentations are offered at all levels: secondary, 2 and 4 year college, university, and advancement in research.

Some areas covered are: bioethics, botany, environment, ecology, molecular biology, biological frontiers, and biological careers. Program proposals are due by March 15. Registration for the convention and information are available by calling the NABT office in Reston, VA at 703/471-1134. Program chairpersons are Agnes Hayes, Bridgewater, MA and Paul King, Sharon, MA.

POSITIONS AVAILABLE

The Santa Barbara Botanic Garden, an educational and scientific

institution devoted to the study, display, and conservation of California flora invited applications for the position of Botanical Researcher/Director of Research.

RESPONSIBILITIES: Provide leadership in the implementation of short and long range plans for the Department of Research; administration of the department's budget and, in cooperation with staff, create and sustain an environment supportive of excellence in scholarship and instruction; maintain an active, externally funded, research program and assume an active role in seeking support for the department.

QUALIFICATIONS: Earned doctorate in the botanical sciences and a scholarly record appropriate for an adjunct faculty appointment at the University of California, Santa Barbara. Preference will be given to applicants in the areas of plant ecology, taxonomy/systematics, or conservation biology. The position is a twelve-month appointment with a competitive salary and an excellent benefit package. Review of applications begins April 1, 1993. Anticipated start date is September 1, 1993. Submit cover letter and resume to: Dr. Sherwin Carlquist, Chair, Search Committee, Santa Barbara Botanic Garden, 1212 Mission Canyon Road, Santa Barbara, California 93105. SBBG is an Equal Opportunity Employer.

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Summer internships in practical horticulture offered by Descanso Gardens (County of Los Angeles Department of Arboreta and Botanic Gardens) for the summer of 1993. During the 10-week summer internship, students will be paid a stipulated amount for their participation. The wide range of training the students encounter fulfills the internship requirements at most schools and universities. Students will participate in "hands-on" training sessions. Field trips and study sessions may also be included.

Applicants must be enrolled in either botany, horticulture, forestry, or related curricula. Completed applications (or resumes), with three letters of recommendation and cover letter describing qualifications and reason for applying, should be sent to: Dr. Steven Cohan, Director, Descanso Gardens, 1418 Descanso Drive, La Canada-Flintridge, CA 91011, Ph: 818/952-4403. Deadline for applications for the summer program is March 30, 1993. Housing and transportation are the responsibility of the student. A two-page application is available at the phone number provided.

VOLUME 3 FAMILIES AND GENERA

Families and genera are in sequence used for volume 3 as of January 1993. Curators who wish their material to be studied may contact authors directly.

Magnoliaceae

Magnolia Frederick Meyer
Liriodendron Frederick Meyer

Annonaceae

Annona Robert Kral
Asimina Robert Kral
Deeringothamnus Robert Kral

Canellaceae

Canella Thomas Wilson

Calycanthaceae

Calycanthus George Johnson

Lauraceae

Lindera Eugene Wofford
Litsea Henk van der Werff
Sassafras Henk van der Werff
Umbellularia Henk van der Werff

	Cinnamomum	Henk van der Werff
	Licaria	Henk van der Werff
	Nectandra	Henk van der Werff
	Persea	Eugene Wofford
	Cassytha	Henk van der Werff
Saururaceae		
	Anemopsis	George Buddell John Thieret
	Saururus	George Buddell John Thieret
Piperaceae		
	Piper	David Boufford
	Peperomia	David Boufford
Aristolochiaceae		
	Aristolochia	Kerry Barringer
	Asarum	Kerry Barringer
Illiciaceae		
	Illicium	Michael Vincent
	Schisandra	Michael Vincent
Schisandraceae		
Nelumbonaceae		
	Nelumbo	John Wiersema
Nymphaeaceae		
	Nuphar	John Wiersema
	Nymphaea	John Wiersema
Cabombaceae		
	Brasenia	John Wiersema
	Cabomba	John Wiersema
Ceratophyllaceae		
	Ceratophyllum	Donald Les
Ranunculaceae		
	Hydrastis	Bruce Ford
	Ranunculus	Alan Whittemore
	Myosurus	Alan Whittemore
	Trautvetteria	Bruce Parfitt
	Anemone	Bryan Dutton
	Hepatica	Bruce Ford
	Clematis	James Pringle Frederick Essig Nancy Moreno
	Helleborus	Bruce Ford
	Cimicifuga	Gwynn Ramsey
	Actaea	Bruce Ford
	Eranthis	Bruce Parfitt
	Nigella	Bruce Ford
	Adonis	Bruce Parfitt
	Caltha	Bruce Ford
	Trollius	Bruce Parfitt
	Aconitum	Don Brink
	Delphinium	Michael Warnock
	Consolida	Michael Warnock
	Coptis	Bruce Ford
	Xanthorhiza	Bruce Parfitt
	Isopyrum	Bruce Ford
	Aquilegia	Alan Whittemore
	Thalictrum	Marilyn Park
Berberidaceae		
	Nandina	David Whetstone Tim Atkinson
	Caulophyllum	Henry Loconte
	Berberis	Alan Whittemore
	Diphylleia	Lisa George
	Podophyllum	Lisa George
	Achlys	David Whetstone Tim Atkinson
	Vancouveria	David Whetstone Tim Atkinson
	Jeffersonia	Lisa George
Lardizabalaceae		
	Akebia	John Thieret
Menispermaceae		
	Calycocarpum	Donald Rhodes
	Cocculus	Donald Rhodes
	Menispermum	Donald Rhodes
	Cissampelos	Donald Rhodes
Papaveraceae		
	Chelidonium	Robert Kiger

Glaucium	Robert Kiger
Macleaya	Robert Kiger
Sanguinaria	Robert Kiger
Stylophorum	Robert Kiger
Dendromecon	Curtis Clark
Eschscholzia	Curtis Clark
Arctomecon	Susan Meyer
Argemone	Gerald Ownbey
Canbya	Curtis Clark
Papaver	Robert Kiger
	David Murray
Roemeria	Robert Kiger
Romneya	Curtis Clark
Stylomecon	Curtis Clark
Hesperomecon	Gary Hannan
Meconella	Gary Hannan
Platystemon	Gary Hannan
Fumariaceae	
Dicentra	Kingsley Stern
Adlumia	David Boufford
Corydalis	Kingsley Stern
Fumaria	David Boufford
Platanaceae	
Platanus	Robert Kaul
Hamamelidaceae	
Hamamelis	Frederick Meyer
Fothergilla	Frederick Meyer
Liquidambar	Frederick Meyer
Ulmaceae	
Ulmus	Sue Sherman-Broyles
Planera	William Barker
Celtis	William Barker
Trema	William Barker
Cannabaceae	
Cannabis	Ernie Small
Humulus	Ernie Small
Moraceae	
Fatoua	Richard Wunderlin
Morus	Richard Wunderlin
Broussonetia	Richard Wunderlin
Maclura	Richard Wunderlin
Brosimum	Richard Wunderlin
Dorstenia	Richard Wunderlin
Ficus	Richard Wunderlin
Urticaceae	
Urtica	David Boufford
Hesperocnide	David Boufford
Laportea	David Boufford
Parietaria	David Boufford
Pilea	David Boufford
Pouzolzia	David Boufford
Soleirolia	David Boufford
Boehmeria	David Boufford
Leitneriaceae	
Leitneria	Linn Bogle
Juglandaceae	
Carya	Donald Stone
Juglans	Donald Stone
Myricaceae	
Myrica	Allan Bornstein
Comptonia	Allan Bornstein
Fagaceae	
Fagus	Kevin Nixon
Lithocarpus	Kevin Nixon
Chysolepis	Kevin Nixon
Castanea	Kevin Nixon
Quercus	Kevin Nixon
	Robert Jensen
Betulaceae	
Alnus	John Furlow
Betula	John Furlow
Carpinus	John Furlow
Ostrya	John Furlow
Corylus	John Furlow
Casuarinaceae	
Casuarina	Karen Wilson