Volume 7, Number 1
January-February-March 1993

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

FLORA OF NORTH AMERICA NEWS

Organizational Center

Revised Guides for Contributors have been mailed to all **accepted authors** for treatments of taxa in Volume 11 and subsequent volumes (Check FNA Newsletter 6(2):10 for order of publication of volumes). **Accepted reviewers** for Volume 3 treatments and remaining volumes are also being sent revised Guides. If you have not received your revised guide, please call Judy Unger at 314/577-9515. By accepted authors/reviewers, we mean those who have contacted Dr. Nancy Morin or others at the Organizational Center informing us of their intention to write/review treatments of taxa for which they received an official invitation.

A Bryophyte Character List will be included with Guides mailed to bryologists who accept an invitation to write treatment(s) for Volume 13.

Regional review is in process. The first batch of manuscripts were mailed to accepted regional reviewers on April 12. Of the 47 invitations to botanists in all parts of the U.S. and Canada, and a few in Europe (for Greenland), about 30 have accepted and will be sent manuscripts for taxa occurring in their geographic area of expertise. This process provides a means of checking distributional information sometimes not available to smaller taxonomic and floristic projects. Regional reviewers are asked to check distributional information, both in the distribution statement and on the distribution map. They also check that keys work using plants in their area, and that all taxa occurring in their area are treated.

Concurrently, taxonomic reviewers check that scientific information, in both the description and key, is accurate. They are also asked to check that the discussion paragraph reflects accurate and pertinent information and is reasonably complete. They also check the accuracy of the illustrations. Maps and illustrations will be sent with manuscripts going out for review, if at all possible. Of course, both types of reviewers are welcome to comment on any aspect of a treatment.

Influential Plants Discussed in FNA Treatments - An important, but often neglected, part of an FNA treatment is the discussion that follows the taxonomic description. Here one should find information on taxonomic controversy or uncertainty, unusual and interesting aspects of the plant's biology, and brief notes on the taxon's impact on human life. Weeds and poisonous plants are examples of negative impact. Positive impact includes the use of plants for horticultural, medicinal, and other ethnobotanical purposes. In the Organizational Center, documented basic information on traditional Native American medicinal uses of plants is being added to the discussion section of the volume three treatments. This information is being extracted from *Medicinal Plants of Native America* (Moerman 1986), and from *Medical Botany - Plants Affecting Man's Health* (Lewis and Elvin-Lewis 1977) For example, the roasted and mashed seeds of *Argemone munita* (Papaveraceae) have been used by the Kawaiisu tribe as a salve to treat burns (Moerman 1986 1:55). To complement ethnobotanical information, English, French (Canadian), and Spanish (US) common names are being added.

Examples of references on plants affecting people include: Bailey, Liberty H. 1943 (and other years). *The Standard Cyclopedia of Horticulture*. The Macmillan Company, New York; Kingsbury, John M. 1964. *Poisonous Plants of the United States and Canada*. Prentice-Hall, New Jersey; Lewis, Walter and Memory P. F. Elvin-Lewis. 1977. *Medical Botany - Plants Affecting Man's Health*. John Wiley & Sons, New York; Moerman, Daniel E. 1986. *Medicinal Plants of Native America*. vol. 1 & 2. University of Michigan Museum of Anthropology, Ann Arbor; Sargent, Charles S. 1905. *Manual of the Trees of North America*. Houghton Mifflin Co., New York; Standley, Paul C. 1920-1926. *Trees and Shrubs of Mexico*. Contr. U.S. Nat. Herb. 23(1-5): 1-1721; Vines, Robert A. 1960. *Trees, Shrubs, and Woody Vines of the Southwest*. Univ. Texas Press, Austin. --by Dr. Denis Kearns, FNA postdoc, and Ms. Carol Davit, assistant to Dr. Morin

* *

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
between 1 January 1993 and 15 April 1993

Volume 3
Michael Vincent: Schisandraceae
Donald Les: Ceratophyllaceae
David Whetstone and Tim Atkinson: *Achlys, Nandina,* and *Vancouveria*
David Whetstone: *Diphylleia*
John Thieret and John Kartesz: Lardizabalaceae

Volume 11
Robert Faden: Commelinaceae - 11 genera
William Crins: *Carex* sect. *Phyllostachyae*
John Packer: *Tofieldia, Triantha*, and *Pleea*
Charles Sheviak: *Cypripedium*

Volume 5
John Thieret: *Napaea*
Volume 6
David Whetstone and Christopher Nixon: Chrysobalanaceae
Volume 7
Michael Moore: Vitaceae
Volume 8
George Yatskievych: Lennoaceae

*** * * * * * ***

Undergraduate Internships for Flora of North America - Flora of North America has received supplemental funding from the National Science Foundation to support undergraduate interns in 1993 at Missouri Botanical Garden. Internships are available for any academic term. Interested undergraduates who have had courses in basic botany and plant taxonomy should send a résumé and name and telephone number of their undergraduate advisor to Dr. Nancy Morin, Flora of North America, Missouri Botanical Garden, P. O. Box 299, St. Louis, Missouri 63166 by May 31. Candidates will be notified of their acceptance by June 15.

FNA ITEMS for sale include:

T-shirts, all cotton, white: only S and M; teal: only L and XL	$9
green coffee **mugs**	$7
cloisonne lapel **pins**	$5
white painter's **caps**	$2
wheat or white rectangular **buttons** with habit of *Floerkea*	$1

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

Editorial Committee

CompEd Committee Formed for Volume 10 (Asteraceae) - The current taxonomy of the composites (Asteraceae) derives largely from circumscriptions and placements proposed by George Bentham. For North American composites, current taxonomy is, perhaps, best exemplified in floristic treatments by Arthur Cronquist (e.g., Vascular Plants of the Pacific Northwest, Manual of Vascular plant of Northeastern U.S. and adjacent Canada). Cronquist's floristic treatments are models of clarity in presentation and provide standards of excellence for our generation.

For production of the FNA treatment of composites (Vol. 10 - Asteraceae), a committee of Ted Barkley, Luc Brouillet, and John Strother (CompEd) has been formed to serve as taxon editors for the family and to assist contributors in hewing to established standards of excellence. Members of CompEd will set initial circumscriptions and tribal placements and will prepare draft descriptions for all genera of composites to be recognized in FNA. Because the members of CompEd are convinced the Flora of North America should employ taxonomic concepts that reflect the best understanding that is available, some circumscriptions and tribal placements adopted by CompEd may differ significantly from tradition.

Although circumscriptions and tribal placements of most genera of composites have been stable since Bentham's time, the past quarter century or so has seen an abundance of literature addressing problems of generic circumscriptions and tribal placements of some problematic groups of Compositae. These publications reflect new information plus application of new techniques and ideologies for utilizing the information. Particularly significant have been biochemical analyses, especially DNA studies, and the use of cladistic methods to create justifiable phylogenetic postulates. A result has been support for many long-standing circumscriptions and tribal placements and substantial remodeling of others. The recent research has very seldom led to changes in circumscriptions or placements of individual species; it is clusters of species (e.g., genera, subgenera, and sections) that have been notably re-aligned. In future classifications, Compositae will almost certainly comprise moderately greater numbers of tribes and genera.

Tribal placements, circumscriptions, and descriptions wrought by members of CompEd are intended only to be starting points for contributors and are intended to assure that genera are treated evenly and uniformly across the family. Contributors are expected to correct errors and oversights found in the initial descriptions. Similarly, contributors are expected to return any "misassigned species" (i.e., species assigned to a wrong genus) to the appropriate editor.

Because results of recent research have sometimes been used to justify segregating small, evidently monophyletic groups from traditionally large and, presumably, polyphyletic genera, members of CompEd are concerned that recognition of segregates may sometimes leave horribly mutilated "residue genera." Therefore, a segregate genus will not be adopted by CompEd unless all of the species traditionally included in the larger genus have been considered in the study that proposes the segregate. For example, segregates of Artemisia, Aster, and Haplopappus will not be adopted unless all of the relevant species in our flora are satisfactorily accounted for by proponents of the segregates. It is hoped that adherence to such a philosophy will prevent the pruning away of various segregates from a large, heterogeneous genus while leaving a residue of miscellaneous and mis-matched species. It is further hoped that all species of a genus under revision can be accounted for at approximately equal levels of understanding.

The traditional taxonomic system rests upon an understanding and interpretation of natural relationships. As understanding improves and interpretations change, taxonomic classifications change. Changes in classifications commonly result in changes in nomenclature. Many users of FNA will be nonsystematists who are not greatly moved by the systematist's desire to repeatedly add subtle improvements to existing phylogenetic postulates, especially "improvements" that result in name changes. They want a single, immutable handle attached to each kind of plant.

Everyone concerned with plants requires a stable nomenclature in order to communicate effectively. A purported strength of FNA is the promise of a uniform nomenclatural base for the flora of North America north of Mexico. The nomenclatural implications of changes in the classification of composites will not be taken lightly by members of CompEd. Members of the committee consider it a practical matter to regard "history" as a kind of taxonomic character. Consequently, members of CompEd will not accept a deviation from traditional nomenclature unless a clear justification and explanation for the change is provided.

As this is written, contributing authors for groups of composites are being solicited informally. Inquiries from other potential contributors are welcome. Formal invitations to contributors will be sent by the Convening Editor of FNA as the project progresses. -- The CompEd Committee

COMPUTER NEWS

FNA - For all of you e-mail junkies, here are the Internet email addresses for all the full-time staff at the FNA Organizational Center! In addition, there are two addresses that you should know about:

fna@mobot.org	general FNA related questions and/or comments to be addressed by the Organizational Center staff
fnanews@mobot.org	news items or questions for the quarterly FNA Newsletter
morin@mobot.org	Dr. Nancy R. Morin, Convening Editor
parfitt@mobot.org	Dr. Bruce D. Parfitt, Managing Editor and Scientific Editor
jeude@mobot.org	Helen K. Jeude, Technical Editor

kama@mobot.org	Deborah L. Kama, Database Manager
lawrence@mobot.org	Mary H. Lawrence, Secretary
unger@mobot.org	Judith M. Unger, Project Coordinator
kearns@mobot.org	Dr. Denis M. Kearns, Post-Doc
whittemo@mobot.org	Dr. Alan T. Whittemore, Post-Doc

Though new to the Internet arena, FNA has long seen the advantages of e-mail. A lot of you know that Dr. Robert E. Magill, co-developer and sole architect of TROPICOS, the RDBMS used by MO, wrote the e-mail program that we still use today to keep in touch with FNA Editorial Committee members on administrative and technical issues. Thank you Bob!

*** * ***

I'd like some feedback: **should FNA start up a list server hosting various discussion groups on anything related to plants in the FNA area**? And if so, should discussions be limited to the FNA area? Who of you out there would subscribe? What plant-related topics would interest you the most? Would we have to limit subscriptions?

As I mentioned earlier, FNA already provides and will continue to provide a private forum for Editorial Committee members where members discuss administrative and technical issues related to the production of the volumes. Can FNA be doing more and yet not duplicate any of the existing discussion groups found throughout the Internet system?

Send your opinions to **kama@mobot.org**. I look forward to hearing from any of you!

*** * ***

Not long ago, the Botanical Information Management Department here at MO (known as BIM by us locals) began support of a **public access Wide Area Information Server (WAIS)**. Some of us hardy types have been experimenting with placing data into it for public consumption. Christine McMahon, BIM Department Head, acknowledges that the public user interface needs more work but that hasn't kept those of us working with data from bubbling over with excitement!

Currently, WAIS contains data from: the Index of Plant Chromosome Numbers published at MO; FNA accepted gymnosperm names that are in FNA volume 2 (Sept. 1993!); US Index Herbariorum entries.

NYBG's Pat and Noel Holmgren submitted the **Index Herbariorum entries for the United States** and Noel had this to say about their experimental writing of data to WAIS:

"... [the entries] consist of mailing addresses, phone numbers, fax numbers, and e-mail addresses for all staff. There is nothing about the herbaria they come from except the acronym. What is in the WAIS file is updated and enhanced somewhat, so it has value to even those possessing copies of the latest edition of IH. We want to make some improvements in what is in WAIS or how it can be accessed before we add other countries."

Currently, the **FNA Gymnosperm entries** consist of FNA accepted gymnosperm names with place of publication and publishing author(s),

family, family common name, common name(s) of the accepted gymnosperm name, FNA designated synonyms, chromosome number, and distribution. Also included in each entry is the name of the contributing author and the name of the FNA Taxon Editor responsible for guiding that particular family to completion.

To see what's available, you can access the MO WAIS located on the MO IBM system by modem or by telneting to mobot.org. To reach the MO IBM system by modem, dial (314) 577-5181, and set your communications parameters to 1 stop bit, 8 data bits, full duplex, and no parity. 1200-9600 baud rates are supported. If you have TELNET capability, just TELNET to mobot.org. At the login prompt, enter **wais** (lowercase). The system will not prompt for a password; however, it will ask for the type of terminal you are using. Terminal emulations vt100 or viewpoint are acceptable.

Send "How to use?" questions, and general questions or comments about MO WAIS to **mcmahon@mobot.org**. IPCN data questions should be sent to **magill@mobot.org**; send FNA gymnosperm data questions to me, **kama@mobot.org**; **pholmgre@nybg.org** and **nholmgre@nybg.org** await your Index Herbariorum questions. All of us data providers would love to know how we can make presentation of our information more useful to you.

*** * ***

All e-mail users should know about the service provided by Jane Mygatt, Assistant Curator of the UNM Herbarium, called **Plant Taxonomists OnLine (PTO)**. The PTO is an electronically distributed list of people along with their physical and electronic addresses. If you're not already on the list and have already been bitten by the e-mail bug, why not drop Jane a note at JMYGATT@UNMB (Bitnet) or JMYGATT@BOOTES.UNM.EDU (Internet) and ask for a copy? There's no charge. --Deborah Kama

*** * * * * ***

The **Carnegie Museum** of Natural History herbarium (CM) maintains a **database of all plant specimens** at CM collected in Pennsylvania. This database presently contains over 120,000 records, all based on individual specimens and updated as specimens are annotated or re-determined. Former CM staff members extensively collected plants in western Pennsylvania and thus CM has the most complete representation of plants from this region.

A database of CM specimens from outside Pennsylvania is in the beginning stage. It includes all primary types and isotypes, collections made by current staff members, and miscellaneous other specimens, including over 60% of Orchidaceae specimens. There are presently almost 30,000 records entered.

Although researchers are encouraged to examine CM specimens firsthand, data requests will be considered. Address requests to Sue Thompson, Section of Botany, Carnegie Museum of Natural History, 4400 Forbes Ave., Pittsburgh, PA 15213; FAX 412-622-8837.

NEWS AND NOTES

FLORA NEOMEXICANA A Fertile Field for Discovery by Robert

Sivinski, New Mexico Forestry Division. (Condensed from the Native Plant Society of New Mexico Newsletter March/April 1993 Volume XVIII Number 2) - New Mexico is a fertile field for botanical discovery. The great variety of geology, climate, and elevation creates a wealth of unique habitats for floristic diversity. Our large state has many out-of-the-way places and relatively few botanists. There are still areas of New Mexico that have not received adequate floristic scrutiny by professional or amateur botanists in the field. Therefore, it is not uncommon for several new state records to be added to our flora each year. What is surprising, however, are the numerous newly described plants that have been recently discovered in our state. The possibility that there may yet be undescribed species out there is demonstrated by the discovery or publication of more than twenty new species and a varieties since the Flora of New Mexico (Martin & Hutchins, 1980) was published. The following is a brief summary of these exciting new finds.

The genus *Astragalus* (milkvetch) in the Pea Family (Fabaceae) is well represented in our state by more than seventy species. Three new New Mexican species have been recently added to this genus. *Astragalus knightii* Barneby (Knight's milkvetch) was discovered on sandstone outcrops within the Rio Puerco drainage of Sandoval County. It is named for Paul Knight, the New Mexican botanist who found this plant. *Astragalus kerrii* Knight & Cully (Kerr's milkvetch) was found in the foothills of the Capitan Mountains. *Astragalus chuskanus* Barneby & Spellenberg (Chuska milkvetch) is a new species endemic to the Chuska Mountains on the New Mexico/Arizona border.

The Aster Family (Asteraceae) is the largest plant family in New Mexico and most of our new species belong here. *Senecio spellenbergii* T. M. Barkley (Spellenberg's groundsel) was named for its collector, Dr. Richard Spellenberg of NMSU. *Chaetoppa elegans* Soreng & Spellenberg (Sierra Blanca cliff daisy) was discovered in the Sacramento Mountains and is know only from two small localities on Sierra Blanca. Also from our southern mountains, the new variety *Perityle staurophylla* (Barneby) Shinners var. *homoflora* Todsen (San Andres rock daisy) was located in several San Andres Mountain canyons and cliffs on White Sands Missile Range. Another new variety is *Aster laevis L.* var. *guadalupensis* A. G. Jones (Guadalupe Mountain aster).

The large Aster Family genus *Erigeron* (fleabane) also has several new species from New Mexico. *Erigeron scopulinus* Nesom & Roth (rock fleabane) was located on cliffs and rhyolitic outcrops in several localities in the Gila National Forest of New Mexico and in adjacent Arizona. *Erigeron rybius* Nesom (Sacramento Mountain fleabane) grows in the open woodlands and meadows of the Sacramento Mountains and was only recently recognized as something quite different from its nearest relative, *E. rusbyi* of the Mogollon Mountains. Further north, the new *Erigeron acomanus* Spellenberg & Knight (Acoma fleabane) was discovered on sandstone outcrops near the Acoma Pueblo Reservation. Finally, an obvious personal favorite of mine is *Erigeron sivinskii* Nesom (Sivinski's fleabane), which grows on shale outcrops in the Zuni Mountains near Fort Wayne.

In the Milkwort Family (Polygalaceae) the new variety *Polygala rimulicola* Steyer. var. *mescalerorum* Went & Todsen (Mescalero milkwort) was located on limestone in the San Andres Mountains. A new mustard (Brassicaceae), also on southern New Mexico limestones, is *Sibara griesea* Rollins (gray sibara). In the Dogbane Family (Apocynaceae), the new *Amsonia fugatei* McLaughlin (Fugate's amsonia) was discovered growing on conglomerate outcrops in Socorro County. In our northern mountains,

Ipomopsis sancti-spiritus Wilken & Fletcher (Holy Ghost impomopsis) was discovered in a single canyon in the Sangre de Cristo Mountains. This rare member of the Phlox Family (Polemoniaceae) has recently been proposed to be listed as endangered by the U.S. Fish and Wildlife Service. *Stellaria porsildii* C.C. Chinappa (Porsild's starwort) in the Pink Family (Caryophyllaceae) was recently found in the Pinos Altos Mountains of southwestern New Mexico and the Chiricahua Mountains in adjacent Arizona. [ed. comment: Dr. Rich Spellenberg and Dr. Ted Barkley are on the FNA Editorial Committee]

PUBLICATIONS

The new Jepson Manual (**The Jepson Manual, Higher Plants of California**. James C. Hickman, ed. The University of California Press, Berkeley and Los Angeles. xviii + 1400 pp. 1993.)

The new Jepson Manual, subtitled "Higher Plants of California," was just published in February. It is a monumental achievement, and a worthy successor to the work of Munz of a generation ago, and its linear antecedent, Jepson's Manual of 1925. The new manual will soon become our generation's acknowledged authority for the plants of the richest floristic region in the country.

Anyone with more than a handful of years in botany can recall that the writing of a regional flora was once largely a one-man effort. As recently as 1959, the late Prof. P. A. Munz capably did just that. However, the eager enterprise of systematists has provided such an abundance of published information and herbarium specimens that it overwhelms the ken of a single floristicist. The future in floristics must be in collaborative efforts, and the new Jepson Manual is a model for such a project. It is the product of nearly 200 experts, specialists, committed generalists, and a dedicated staff. My hand in the Flora of the Great Plains, a much less extensive project that was also created by committee, lets me appreciate the complexities in assimilating and publishing the Jepson Manual. To paraphrase Samuel Johnson, it is not merely a matter of how well they could do it, but rather that they could do it at all. And, they did it very well.

The Jepson Manual is traditional in that it provides keys, descriptions, current nomenclature, and range statements for all of the vascular plants known to occur in California outside of cultivation. It is not traditional in that the Manual is intentionally designed to be "user friendly" so that the serious non-botanist may extract information and identify plants with a degree of confidence and ease. The Jepson Manual is intended to be a "People's Flora," and it gives all indication of succeeding at this admirable goal.

The Manual further supplies information on habitats, relative abundance, and the legal status of plants, i.e., if threatened, endangered, or legally noxious. The introductory chapters include essays on the geographic subdivision of California, on the geological history and changing landscapes, and on climates and how they affect the flora. The glossary includes several plates of line drawings to illustrate many of the more complex terms, and some terms are defined and then an example is cited, e.g. "**tubercle**. Small, wart-like projection, (example, Plagiobothrys hystriculus nutlet.)" Then in the text, the illustrations show a nutlet of P. hystriculus with its tubercles indicated. A nice touch.

The California flora is so rich and complicated that any modern account of it could be justified as a several-volume work. However, the Jepson

Manual was conceived at the start as a 1-volume affair and thus some rather ruthless abbreviation was inevitable. The nearly 200 contributors and other participants in the project occasionally made jocular comments translating their traditionally written MSS from "Bot-Speak" into "Jep-Speak," (I was one of those contributors), but it is a pleasure to note that "Jep-Speak" works. The descriptions are terse to be certain, but they clearly communicate the needed information. Furthermore, they include abbreviated but accurate statements of habitat and distribution, and many have information about cultivation. Distributional data and information on cultivation are explained more fully in separate introductory essays.

The one-volume constraint naturally prevented the illustration of every single entity, but each genus is illustrated by line drawings for one or more species. The drawings were conceived "to corroborate understanding of keys and descriptions, as well as to be easily browsed, independently of the text." The drawings are necessarily small, but with the stated goals in mind, they succeed admirably.

Does the Manual have any flaws? No doubt, it does, for typographical errors and a few inconsistencies, etc., are inevitable in any effort of this size and complexity. Such problems are likely to be minor, and they will work themselves out as people use the Manual. For the nonce it is more than enough to applaud the achievement of the Jepson Herbarium and all of the Manual project staff and participants. They brought it off! They have produced a Manual that will be useful to many people for years to come.

All of us contributors and the entire botanical community owe special thanks to the memory of the late Larry Heckard who long kept the idea of the Manual alive, to Jim Hickman who conceived the Manual and served as its editor, to Dieter Wilken who managed the completion of the project, and to Susan d'Alcamo who was seen by us contributors as an ever-able facilitator. --Theodore M. Barkley, FNA Editorial Committee

MEETINGS

Southwest Botanical Systematics Symposium - The Ninth Annual Southwestern Botanical Systematics Symposium will be held 28-29 May 1993. This year's topic is "Plant Reproductive Biology." Invited speakers include William L. Crepet, Cornell University; W. Scott Armbruster, University of Alaska; John F. Addicott, University of Alberta; Elizabeth M. Lord, University of California, Riverside; Allison Snow, Ohio State University, C. Thomas Philbrick, Rancho Santa Ana Botanic Garden. The evening address will be given by Robert Ornduff, University of California, Berkeley.

The cost to attend is $50.00 per participant ($45.00 per student). This includes the Friday evening social, continental breakfast, boxed lunch, and banquet dinner on Saturday. To register, send your name, address, and telephone or fax number, with a check for the proper amount payable to Rancho Santa Ana Botanical Garden to RSABG, Systematics Symposium, 1500 North College Avenue, Claremont, California 91711. There will be no refunds after May 14, 1993. For more information, please call 909/625-8767, ext. 251. Be sure to register early as space is limited.

POSITIONS AVAILABLE

Fairchild Botanical Garden seeks Herbarium Curator to: maintain the herbarium (including processing of loans, evaluating incoming material,

keeping records, supervising volunteer technicians, and performing pest management); consult with Horticulture and Public Garden Departments concerning taxonomic problems and interpretive displays; identify native and cultivated tropical plants for the public; expand the herbarium by vouchering the living collections and documenting the Florida and Caribbean floras; and teach short courses. The successful candidate will be encouraged to participate in the Flora of Florida and/or Flora of the Greater Antilles projects.

Qualifications: Master's degree in Botany or B.S. with equivalent training; experience in a major herbarium; knowledge of or the ability to quickly learn the Floridian and West Indian floras and the cultivated members of tropical families; and ability to interact well with horticulturists, researchers, volunteers, and the public.

FAIRCHILD TROPICAL GARDEN also seeks a Palm Biologist to establish and maintain an active research program in the biology of palms using the living collection at FTG and field studies; consult with the Curator of Palms and the Herbarium Curator to strengthen and improve the living and preserved collections; participate in the Garden's education and outreach programs; and seek funding for program development. **Qualifications**: Ph.D. degree; experience with palms; strong publication record.

Both positions are to begin mid-1993. For either position, send cover letter and resume with names and phone numbers of three references before April 15, 1993 to: Dr. Jack Fisher, Chair of Botanical Sciences, Fairchild Tropical Garden, 11935 Old Cutler Road, Miami, FL 33156, Telephone: 305/6765-2844; FAX: 305/665-8032. Fairchild Tropical Garden is a non-profit research institution and display botanical garden of 83 acres featuring palms, cycads and a diverse collection of other tropical families. It has comprehensive tropical botany library and herbarium of 65,000 specimens featuring the plants of Florida, the Caribbean, and tropical horticulture.*

*** * * * * * ***

The **American Orchid Society (AOS)** seeks highly motivated, recognized orchid authority with strong organizational, managerial and communication skills for the position of **Director of Education & Conservation** to develop and supervise the Society's educational- and conservation-related programs. The broad nature of these concerns will involve close coordination with relevant AOS committees, the Society's editor, manager of information services and the executive director, to whom the director of education and conservation will report. The candidate should possess outstanding taxonomic, botanical, and horticultural expertise; excellent writing and speaking skills; a thorough understanding of CITES and current conservation trends; the ability to research and prepare grant proposals; computer programming and word processing skills; and be familiar with current research in the Orchidaceae. He or she will work closely with the Society's staff and members, and the public, and strive to develop educational and conservation programs and products that benefit the Society and the general public at both the local and national level. Original research will not be a part of this service-oriented position.

Applicants should possess a M.S. or Ph.D. or equivalent experience. Qualified and interested applicants should direct an appropriate cover letter and curriculum vitae no later than 15 June 1993, to the attention of Lee S. Cooke, Executive Director, American Orchid Society, 6000 South Olive Avenue, West Palm Beach, Florida 33405 (phone 407-585-8666); fax 407-

585-0654).*

*An Equal Opportunity/Affirmative Action Employer

VOLUME 11 FAMILIES AND GENERA

Families are listed taxonomically, genera alphabetically, as of March 1993.
Curators may contact authors directly if they wish their collections checked.

Butomaceae		
	Butomus	Robert Haynes
Limnocharitaceae		
	Hydrocleys	Robert Haynes
Alismataceae		
	Alisma	Robert Haynes
	Echinodorus	Robert Haynes
	Machaerocarpus	Robert Haynes
	Sagittaria	Robert Haynes
Hydrocharitaceae		
	Egeria	Robert Haynes
	Elodea	Robert Haynes
	Halophila	Robert Haynes
	Hydrilla	Robert Haynes
	Limnobium	Robert Haynes
	Ottelia	Robert Haynes
	Thalassia	Robert Haynes
	Vallisneria	Robert Haynes
Aponogetonaceae		
	Aponogeton	Robert Haynes
Scheuchzeriaceae		
	Scheuchzeria	Robert Haynes
Juncaginaceae		
	Lilaea	Robert Haynes
	Triglochin	Robert Haynes
Potamogetonaceae		
	Halodule	Robert Haynes
	Phyllospadix	Robert Haynes
	Potamogeton	Robert Haynes
Ruppiaceae		
	Ruppia	Robert Haynes
Najadaceae		
	Najas	Robert Haynes
Zannichelliaceae		
	Zannichellia	Robert Haynes
Posidoniaceae		
	Posidonia	Robert Haynes
Cymodoceaceae		
	Cymodocea	Robert Haynes
Zosteraceae		
	Zostera	Robert Haynes
Arecaceae		
	Accelorraphe	Scott Zona
	Coccothrinax	Scott Zona
	Cocos	Scott Zona
	Inodes	Scott Zona
	Phoenix	Scott Zona
	Pseudophoenix	Scott Zona
	Rhapidophyllum	Scott Zona
	Roystonea	Scott Zona
	Sabal	Scott Zona
	Serenoa	Scott Zona
	Thrinax	Scott Zona
	Washingtonia	Scott Zona
Araceae		
	Acorus	Sue Thompson
	Arisaema	Sue Thompson
	Arum	Sue Thompson
	Calla	Sue Thompson
	Colocasia	Sue Thompson
	Lysichiton	Sue Thompson
	Orontium	Sue Thompson
	Peltandra	Sue Thompson
	Pinellia	Sue Thompson
	Pistia	Sue Thompson
	Symplocarpus	Sue Thompson
	Syngonium	Sue Thompson

	Zantedeschia	Sue Thompson
Lemnaceae		
	Lemna	Elias Landolt
	Spirodela	Elias Landolt
	Wolffia	Elias Landolt
	Wolfiella	Elias Landolt
Xyridaceae		
	Xyris	Robert Kral
Mayacaceae		
	Mayaca	John Thieret
Commelinaceae		
	Callisia	Robert Faden
	Commelina	Robert Faden
	Cuthbertia	Robert Faden
	Gibasis	Robert Faden
	Leiandra	Robert Faden
	Murdannia	Robert Faden
	Rhoeo	Robert Faden
	Setcreasea	Robert Faden
	Tinantia	Robert Faden
	Tradescantia	Robert Faden
	Zebrina	Robert Faden
Eriocaulaceae		
	Eriocaulon	Robert Kral
	Lachnocaulon	Robert Kral
	Syngonanthus	Robert Kral
Juncaceae		
	Juncus	Ralph Brooks
		Steve Clemants
	Luzula	Janice Coffey Swab
Cyperaceae		
	Carex	Charles Bryson
		Peter Ball
		Leo Bruederle
		Paul Catling
		Jacques Cayouette
		Theodore Cochrane
		William Crins
		Debra Dunlop
		Bruce Ford
		Gary Larson
		Joy Mastrogiuseppe
		David Murray
		Robert Naczi
		Jeff Rettig
		Anton Reznicek
		Paul Rothrock
		Lisa Standley
		Heikki Toivonen
		Marcia Waterway
		Richard Whitkus
		Daniel Wujek
	Abildgaardia	Robert Kral
	Bulbostylis	Robert Kral
	Cladium	Gordon Tucker
	Cymophyllus	Anton Reznicek
	Cyperus	Richard Carter
		Gordon Tucker
	Dulichium	Joy Mastrogiuseppe
	Eleocharis	Jeremy Bruhl
		Richard Carter
		Francis Menapace
	Eriophorum	Peter Ball
		Daniel Wujek
	Fimbristylis	Robert Kral
	Fuirena	Robert Kral
	Hemicarpha	Gordon Tucker
	Isolepis	Galen Smith
	Kobresia	Peter Ball
	Kyllinga	Gordon Tucker
	Lipocarpha	Gordon Tucker
	Oxycaryum	Jeremy Bruhl
		Richard Carter
	Rhynchospora	Robert Kral
	Schoenoplectus	Galen Smith
	Schoenus	Gordon Tucker
	Scirpus	Alfred Schuyler

		William Crins
		Galen Smith
	Scleria	John Fairey III
	Websteria	Jeremy Bruhl
		Richard Carter
Sparganiaceae		
	Sparganium	Robert Kaul
Typhaceae		
	Typha	Galen Smith
Bromeliaceae		
	Catopsis	Gregory Brown
		Harry Luther
	Guzmania	Gregory Brown
		Harry Luther
	Hechtia	Gregory Brown
		Harry Luther
	Tillandsia	Gregory Brown
		Harry Luther
Musaceae		
	Musa	Richard Wunderlin
Zingiberaceae		
	Alpinia	Richard Wunderlin
	Hedychium	Richard Wunderlin
Cannaceae		
	Canna	Helen Kennedy
Marantaceae		
	Maranta	Helen Kennedy
	Thalia	Helen Kennedy
Pontederiaceae		
	Eichhornia	Charles Horn
	Heteranthera	Charles Horn
	Monochoria	Charles Horn
	Pontederia	Charles Horn
Haemodoraceae		
	Lachnanthes	Kenneth Robertson
	Lophiola	Kenneth Robertson
Liliaceae		
	Aletris	Victoria Sullivan
	Allium	Dale McNeal
		Terry Jacobsen
	Alstroemeria	Walter Holmes
	Amaryllis	Walter Holmes
	Amianthium	Frederick Utech
	Androstephium	James Reveal
	Anthericum	James Reveal
		Robert Cruden
	Asparagus	Gerald Straley
	Asphodelus	Gerald Straley
	Brodiaea	Theodore Niehaus
	Calochortus	Peggy Fiedler
	Camassia	Thomas Ranker
	Chamaelirium	Frederick Utech
	Chlorogalum	Judith Jernstedt
	Clintonia	Frederick Utech
	Colchicum	C. D. Brickell
	Convallaria	Frederick Utech
	Cooperia	Walter Flory
	Crinum	Walter Holmes
	Disporum	Frederick Utech
	Echeandia	Robert Cruden
	Eremocrinum	James Reveal
	Erythronium	Kenneth Robertson
	Fritillaria	Bryan Ness
	Galanthus	Gerald Straley
	Habranthus	Walter Flory
	Harperocallis	Loran Anderson
	Hastingsia	Harry Sherman
		Rudolph Becking
	Helonias	Frederick Utech
	Hemerocallis	Frederick Utech
	Hesperocallis	Samuel Jones
	Hosta	Samuel Jones
	Hymenocallis	Walter Flory
		Gerald Smith
	Hypoxis	Alan Herndon
	Leucocrinum	James Reveal

	Leucojum	Gerald Straley
	Lilium	Mark Skinner
	Lloydia	James Reveal
	Lycoris	Frederick Utech
	Maianthemum	James LaFrankie
	Medeola	Frederick Utech
	Melanthium	Norlyn Bodkin
	Milla	Dale McNeal
	Muilla	James Reveal
	Muscari	Gerald Straley
	Narcissus	Gerald Straley
	Narthecium	Frederick Utech
	Nothoscordum	Terry Jacobsen
	Odontostomum	Mark Skinner
	Ornithogalum	Gerald Straley
	Pleea	John Packer
	Polygonatum	C. D. Brickell
	Schoenocaulon	Dawn Frame
	Schoenolirion	Harry Sherman
		Rudolph Becking
	Scilla	John McNeill
	Scoliopus	Frederick Utech
	Stenanthium	Frederick Utech
	Streptopus	Frederick Utech
	Tofieldia	John Packer
	Triantha	John Packer
	Trillium	John Freeman
	Tulipa	Gerald Straley
	Uvullaria	Frederick Utech
		Shoichi Kawano
	Veratrum	James Zimmerman
	Xerophyllum	Frederick Utech
	Zephyranthes	Walter Flory
	Zigadenus	James Zimmerman
Iridaceae		
	Alophia	Peter Goldblatt
	Belamcanda	Peter Goldblatt
	Chasmanthe	Peter Goldblatt
	Crocosmia	Peter Goldblatt
	Crocus	Peter Goldblatt
	Freesia	Peter Goldblatt
	Gladiolus	Peter Goldblatt
	Herbertia	Peter Goldblatt
	Iris	Norlan Henderson
	Libertia	Elizabeth McClintock
	Nemastylis	Peter Goldblatt
	Olsynium	Doug Henderson
		Anita Cholewa
	Romulea	Peter Goldblatt
	Salpingostylis	Peter Goldblatt
	Sisyrinchium	Anita Cholewa
		Doug Henderson
	Sphenostigma	Peter Goldblatt
	Watsonia	Peter Goldblatt
Aloeaceae		
	Aloe	Walter Holmes
Agavaceae		
	Agave	James Reveal
	Cordyline	William Hess
	Dasylirion	David Bogler
	Dracaena	William Hess
	Furcraea	Susan Verhoek
	Hesperaloe	Laurie Robbins
	Manfreda	Susan Verhoek
	Nolina	William Hess
	Sansevieria	William Hess
	Yucca	James Reveal
		Laurie Robbins
		William Hess
Stemonaceae		
	Croomia	David Whetstone
Smilacaceae		
	Smilax	Walter Holmes
Dioscoreaceae		
	Dioscorea	Ihsan Al-Shehbaz
Burmanniaceae		
	Apteria	Deborah Qualls-Lewis

Burmannia Deborah Qualls-Lewis
Thismia Deborah Qualls-Lewis

Orchidaceae

Amerorchis Charles Sheviak
Paul Catling
Aplectrum Charles Sheviak
Paul Catling
Arethusa Charles Sheviak
Paul Catling
Basiphyllaea Ruben Sauleda
Ralph Adams
Beadlea Ruben Sauleda
Ralph Adams
Beloglottis Paul Catling
Charles Sheviak
Bletia Ruben Sauleda
Ralph Adams
Brassia Mark Chase
Bulbophyllum Ruben Sauleda
Ralph Adams
Calopogon Paul Catling
Calypso Charles Sheviak
Paul Catling
Campylocentrum Ruben Sauleda
Ralph Adams
Cephalanthera Charles Sheviak
Paul Catling
Cleistes Paul Catling
Katherine Gregg
Coeloglossum Charles Sheviak
Paul Catling
Corallorhiza Lawrence Magrath
John Freudenstein
Cranichis Ruben Sauleda
Ralph Adams
Cypripedium Charles Sheviak
Cyrtopodium Gustavo Romero
Dactylorhiza Charles Sheviak
Paul Catling
Deiregnye Paul Catling
Charles Sheviak
Dichromanthus Paul Catling
Charles Sheviak
Eltroplectris Ruben Sauleda
Ralph Adams
Encyclia Eric Hagsater
Epidendrum Eric Hagsater
Epipactis Paul Catling
Charles Sheviak
Eulophia Gustavo Romero
Galeandra Gustavo Romero
Galearis Charles Sheviak
Paul Catling
Goodyera Jacquelyn Kallunki
Govenia Edward Greenwood
Habenaria Charles Sheviak
Harrisella Ruben Sauleda
Ralph Adams
Hexalectris Paul Catling
Ionopsis Mark Chase
Isotria Loyal Mehrhoff
Michael Homoya
Leochilus Mark Chase
Lepanthopsis Carl Luer
Liparis Paul Catling
Charles Sheviak
Listera Paul Catling
Macradenia Mark Chase
Malaxis Paul Catling
Maxillaria John Atwood
Mesadenus Paul Catling
Oeceoclades Roger Hammer
Oncidium Mark Chase
Pelexia Ruben Sauleda
Ralph Adams
Piperia James Ackerman
Randall Morgan

Platanthera	Charles Sheviak
Platythelys	Ruben Sauleda
	Ralph Adams
Pleurothallis	Carl Luer
Pogonia	Charles Sheviak
	Paul Catling
Polyrrhiza	Ruben Sauleda
	Ralph Adams
Polystachya	Ruben Sauleda
	Ralph Adams
Ponthieva	Ruben Sauleda
	Ralph Adams
Prescottia	Ruben Sauleda
	Ralph Adams
Pseudorchis	Charles Sheviak
Pteroglossaspis	Gustavo Romero
Sacoila	Paul Catling
	Charles Sheviak
Schiedeella	Paul Catling
Spiranthes	Paul Catling
	Charles Sheviak
Stenorrhynchos	Paul Catling
Tetramicra	Eric Hagsater
Tipularia	Paul Catling
	Charles Sheviak
Tolumnia	Mark Chase
Triphora	Max Medley
Tropidia	Ruben Sauleda
	Ralph Adams
Vanilla	Ruben Sauleda
	Ralph Adams
Zeuxine	Ruben Sauleda
	Ralph Adams