Flora of North America

FNA

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PRESIDENT'S REPORT

Flora of North America Association

Geoff Levin, FNAA president

The *Flora of North America* project is at a critical point in its development. We have two volumes (9 and 28) that are nearly complete, with all treatments undergoing final editing. Several others are almost to that point and, as the volume-updates elsewhere in this newsletter report, we continue to receive treatments at a steady pace. Despite this progress, we have not published any volumes since 2010. As regular readers of the Newsletter know, last October the Board of Directors attempted to address this issue by setting publication targets for all future volumes. If successful, the *Flora of North America* will be completed within the next three years.

A driving force behind this ambitious schedule is the challenge of funding a long-running project that has shown little visible progress in recent years. Simply put, the longer the *Flora* takes to produce, the more it costs. Nancy Morin, Vice President for Business and Development, and Peter Raven, a committed supporter of FNA, have been aggressively seeking new sources of funding. I am pleased to report that their efforts are paying off. By invitation, we recently submitted a successful proposal to the Packard Foundation (see next article), which allows us some breathing room and time to seek out more donors. The art sponsorship program has also provided some much needed funds, as well as being a great help with donors by showing support from our community.

Getting volumes published more quickly will be the most successful argument to foundations and individuals that we warrant their support. It will also generate needed royalty income. I call on all those involved with the project—authors, reviewers, and editors—to do your part to see that the *Flora* can be completed. It is imperative that authors submit any remaining treatments, submit instructions for any remaining illustrations, and respond promptly to questions from editors and artists. Reviewers must submit their comments on time, focusing on the functionality of keys and accuracy of descriptions and distributional information for species in their regions. Editors must process treatments rapidly. To help speed things along, the paid editorial staff, Executive Committee, and I continue to explore ways to expedite the editorial process. If we all do our parts, we will see the *Flora* published.

FNA Receives Grant from the Packard Foundation

The David and Lucile Packard Foundation has awarded a one-year grant of $250,000 to the Flora of North America Association for general operating support. The Packard Foundation was one of FNA's earliest supporters, making grants for the project through Missouri Botanical Garden in 1988, 1990, 1992–93, and 1997–2000. We are extremely grateful to the Foundation for helping FNA again in these final years.

the David & Lucile Packard FOUNDATION

The David and Lucile Packard Foundation was established 45 years ago, a family foundation created "to improve the lives of children, families, and communities, and to restore and protect our planet." According to their website, "David believed in the power of science to improve the human condition and restore the health of the planet."

Within its Conservation and Science program it focuses primarily on marine and coastal issues and climate change, with some special programs on protection and restoration of biologically important and iconic regions of western North America.

Virtual Herbarium Networks

Nancy Morin

There are more and more virtual resources available to authors, editors, reviewers, and everyone else who may want information about the plants of North America. At the country level, literature based summary information and links to other sites can be accessed via USDA PLANTS for the U.S.A. (http://plants.usda.gov), VASCAN for Canada (http://data.canadensys.net/vascan/search), and CONABIO for Mexico (http://www.conabio.gob.mx/otros/cgi-bin/herbario.cgi). Regional herbarium networks exist for Canada and many regions of the U.S.A., and some states have their own networks. The quality and usefulness of these have improved markedly over time, thanks in part to innovative programming that has created analytical tools, due in part to the effort being made to geo-reference as many records as possible, and in part to the work of specialists who recognize unlikely localities or probable misidentifications and provide correct information to the database curators. Most of the herbarium networks are in a very active stage of data accumulation and verification, and it is worth checking them periodically to see what is new. Many of these websites also have observation records, atlases, floras, checklists, other projects, and other tools available.

CANADENSYS
http://data.canadensys.net
Operated by the Université de Montréal Biodiversity Centre, a Canada-wide effort involving 11 universities, two museums, and five botanical gardens.
Taxa: Plants, animals, and fungi of Canada.
Geographical area: Canada, Greenland (Denmark), and Saint Pierre and Miquelon (France)
Generates point maps. Full specimen data can be downloaded. Nice statistical report tool.
Outstanding documentation of the people and institutions involved.

Consortium of Northeastern Herbaria (CNH)
http://neherbaria.org
Participants: 59 institutions in the area covered.
Framework: Symbiota.
Records in database: 440, 934.
Taxa: plants, fungi, diatoms, algae, and lichens.
Geographical area: northeastern North America, a region encompassing the Canadian provinces New Brunswick, Newfoundland & Labrador, Nova Scotia, Prince Edward Island, Ontario, and Quebec, and Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont in the United States.
Generates point maps. Full specimen data can be downloaded.

Southeast Regional Network of Expertise and Collections (SERNEC)
http://www.sernec.org
Specimen information available from about 20 collections.
Geographic area: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, West Virginia.
Map display (county presence) only.

Atlas of Florida Plants
http://www.florida.plantatlas.usf.edu
Joint effort by the Institute for Systematic Botany, the University of South Florida and the Florida Center for Community Design + Research.
Geographical area: Florida.
Records in database: Although covered in SERNec, the Atlas of Florida Plants has a wealth of additional information and images that make it worth special mention, including almost 15,000 images of living plants and nearly 90,000 images of specimens.

Great Plains Herbaria
http://www.k-state.edu/herbarium/GP_herbaria.html
Framework: Specify.
Geographical area: Kansas, Nebraska, North Dakota, South Dakota.

The Flora of North America (FNA) project is a cooperative program to produce a comprehensive account of the plants of North America north of Mexico. The *FNA Newsletter* is edited by Barney Lipscomb, Newsletter Editor, Botanical Research Institute of Texas, with the assistance of Kristin Pierce, Assistant Editor, Missouri Botanical Garden. The newsletter is published twice a year by the Flora of North America Association to communicate news about the FNA project and other topics of interest to North American floristic researchers. For more information, please see the FNA website, www.fna.org.

Readers are invited to send appropriate news items to:
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Botanical Research Institute of Texas
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Fort Worth, TX 76107-3400, USA
Items also can be sent by e-mail to: barney@brit.org or Kristin.Pierce@mobot.org

A list of participating herbaria has links to individual websites that can be queried.
Full specimen data can be downloaded.

Rocky Mountains
http://www.rmh.uwyo.edu
Rocky Mountain Herbarium, University of Wyoming
Framework: In-house by Ben Legler.
Records in database: 806,153 specimen records.
Geographical area: Rocky Mountains and adjacent areas.
Generates point maps. Downloads of full specimen data, links to images of many specimens.

Consortium of Intermountain Regional Herbaria
http://intermountainbiota.org
Utah State University
Framework: Symbiota.
Geographical area: Area between the Sierra Nevada and the Rocky Mountains.
Generates point maps. Downloads of full specimen data.

Southwest Environmental Information Network (SEINET)
http://swbiodiversity.org
Framework: Symbiota.
Geographical area: Collection data from 20 herbaria in Arizona, New Mexico, holdings are predominantly from those states but not restricted to them. Search can also include Intermountain Regional Herbaria Network, Rocky Mountain Regional Consortium, Central Plains Regional Consortium, Herbaria Regional de Mexico Norte.
Generates point maps. Downloads of full specimen data, links to images of specimens and living plants.

Consortium of Pacific Northwest Herbaria (PNW)
http://www.pnwherbaria.org
Managed by the University of Washington Herbarium.
Framework: In-house by Ben Legler.
Records in database: 2,020,206 specimen records and 385,930 images from 27 herbaria.
Geographical area: Alaska, British Columbia, Idaho, Montana, Oregon, Washington, Yukon Territory.
Generates point maps; downloads of full specimen data; Links to images of many specimens and of living plants.
There is more information on PNW on p. 9.

Consortium of California Herbaria (CCH)
http://ucjeps.berkeley.edu/consortium/
Participants include 26 California herbaria, Harvard University Herbaria, and New York Botanical Garden; in process of integrating California records held in SEINet institutions.
Records in database: 1.77 million specimen records.
Geographical area: California.
Generates point maps. Overlays of phytogeographical regions. Full specimen data can be downloaded.

University of Alaska Museum of the North Herbarium (ALA)
http://arctos.database.museum/specimenSearch.cfm
Framework: Arctos (multi-organismal); Berkeley Mapper
Records in database: 192,411
Taxa: Vascular plants.
Geographical area: Alaska.
Generates point maps. Full specimen data can be downloaded.

Flora of North America Regional Reviewers

Nancy Morin

Regional Reviewers are an essential part of the core team producing Flora of North America treatments. Very few authors, at least of treatments of large genera, are able to see all of the herbarium specimens of their group, or most of the populations in the wild. About 80 local botanists, who are most familiar with the plants in their area, receive manuscripts for review. They check that the elevation, state and province distribution, and habitat statements are correct, that the keys work for the plants in their area, and that the descriptions are accurate for the plants as they occur in their area. They also check that all taxa within the group in question have been included. This is especially helpful in the case of non-natives that have become naturalized, since reports of these in herbaria may lag behind the actual spread of the species. Regional reviewers are also more likely to know specifics of the current range of species of conservation concern.

Many FNA regional reviewers are associated with a herbarium, and in the course of reviewing they curate their herbarium's collection. Questions about circumscription and geographic range resulting from review may lead to correspondence between reviewer and author, images of scanned specimens being provided, or selected specimens sent on loan. This back and forth exchange of knowledge is valuable for both author and reviewer, and sometimes leads to considerably improved understanding of the plant group in question. Access at this early stage to draft treatments is useful to regional reviewers who are working on local or regional floras.

Reviews are consolidated at the regional level by Regional Coordinators, who then pass the comments on to the taxon editor, who then compiles all of the regional comments and conveys them to the author. Reviewers sometimes receive very large manuscripts at the least convenient times, and end up spending their holidays with an FNA treatment rather than enjoying a vacation. They tend to be not only excellent botanists but also excellent editors themselves. Unlike authors, who may be involved in FNA only while their particular taxon is being worked on, many FNA regional reviewers have been with the project for many years. The regional review process helps to substantially improve the quality and accuracy of the final published treatments and helps make information contained in treatments accessible before final publication.

Flora of North America Welcomes Two New Regional Reviewers

Kendrick L. Marr, Botany Curator at the Royal British Columbia Museum, has joined the team of reviewers in the Pacific Northwest. He received his Ph.D. in botany from the University of British Columbia in 1995. In addition to his knowledge of the plants of the Pacific Northwest, he has had field experience and taught courses on the flora of the Rocky Mountains. He has published papers on a wide range of plant families and has recent publications on phytogeography, especially of alpine areas in the northwest.

James P. Smith, Professor of Botany, *Emeritus*, at Humboldt State University, is a new reviewer for the Southwestern U.S. region. He received his Ph.D. in plant taxonomy from Iowa State University in 1968. An expert on grasses and on poisonous plants, he was one of the driving forces creating the rare plant program of the California Native Plant Society and publication of the inventory of the rare and endangered vascular plants of California. He wrote the still classic *Vascular Plant Families* in 1977, and continues to publish useful checklists and bibliographies in the Humboldt State University Herbarium Miscellaneous Publications Series.

Flora of North America Regional Coordinators and Reviewers

An asterisk (*) indicates a regional reviewer who was a reviewer for Volume 3, published in 1997, and has been a regional reviewer with FNA continuously since then.

Email addresses and geographic specialties of reviewers can be found on the FNA website: www.fna.org.

***BROUILLET, Luc (luc.brouillet@umontreal.ca)—** coordinator: Eastern Canada, including Greenland; St. Pierre & Miquelon; N.B., Nfld. and Labr., N.S., Ont., P.E.I., Que.

Blaney, Sean
*Cayouette, Jacques
*Crins, William J.
*Halliday, Geoffrey
Munro, Marian
Oldham, Michael J.

***BOUFFORD, David (david_boufford@harvard.edu)—** coordinator: Northeastern United States, including Conn., Ind., Maine, Mass., Mich., N.H., N.J., N.Y., Ohio, Pa., R.I., Vt.

*Angelo, Ray
*Cooperrider, Tom S.
Haines, Arthur
Naczi, Rob
Reznicek, Tony
Sorrie, Bruce
Yatskievych, Kay

***WEAKLEY, Alan (weakley@unc.edu)—**coordinator: Southeastern United States, including Ala., Ark., Del., D.C., Fla., Ga., Ky., La., Md., Miss., N.C., S.C., Tenn., Va., W.Va.

Alford, Mac H.
Carter Jr., J. Richard
Estes, L. Dwayne
Hayden, W. John
Knapp, Wesley M.
Nelson, John B.
Reid, Christopher
Sorrie, Bruce A.
Spaulding, Daniel D.
*Thomas, R. Dale
*Urbatsch, Lowell E.
Witsell, Theo
*Wofford, B. Eugene

***WUNDERLIN, Richard P. (rwunder@usf.edu)—** coordinator: Fla.

Anderson, Loran C.
Hansen, Bruce F.

FORD, Bruce (bford@ms.umanitoba.ca)—coordinator: Western Canada, including Alta., Man., N.W.T., Nunavut, Sask.

Gillespie, Lynn
Gould, Joyce A.
*Harms, Vernon L.
Punter, Elizabeth

***FREEMAN, Craig (ccfree@ku.edu)—**coordinator: North Central United States, including Ill., Iowa, Kans., Minn., Mo., Nebr., N.Dak., Okla., S.Dak., Wis.

*Barker, William T.
*Cholewa, Anita F.
*Harriman, Neil A.
Hoagland, Bruce W.
*Kaul, Robert B.
*Larson, Gary E.
*Lewis, Deborah Q.
*Stritch, Lawrence R.
*Yatskievych, George

***POOLE, Jackie (jackie.poole@tpwd.texas.gov)—**coordinator: South-Central United States, including N.Mex., Tex.
Sivinski, Bob

***HARTMAN, Ron (rhartman@uwyo.edu)—**coordinator: Rocky Mountains, including Colo., Idaho, Mont., Utah, Wyo.
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Björk, Curtis
*Heidel, Bonnie
Nelson, B.E.

ICKERT-BOND, Steffi M. (smickertbond@alaska.edu)—coordinator: Yukon, Alaska
Bennett, Bruce
Lipkin, Robert
Metzgar, Jordan
*Murray, David F.
Parker, Carolyn
*Stensvold, Mary

LISTON, Aaron I. (listona@science.oregonstate.edu)—coordinator: Pacific Northwest, including B.C., Oreg., Wash.
*Alverson, Edward R.
Ceska, Adolf.
*Chambers, Kenton
Giblin, David
Halse, Richard R.
Kozloff, Eugene N.
Legler, Ben
Marr, Kendrick L.
Pojar, Jim
Roché, Cindy
Whitton, Jeannette.
Zika, Peter F.

MORIN, Nancy (nancy.morin@nau.edu)—coordinator: Southwestern United States, including Ariz., Calif., Nev.
Ayers, Tina
Hrusa, G. Frederic
Morefield, James D.
*Pinkava, Donald J.
Smith, James P.
Rebman, Jon P.
Wallace, Gary D.

FNAA Illustrator short listed for prestigious AOI Awards

The stunning illustration of *Dionaea muscipula* (Droseraceae), Venus Fly Trap, by FNA artist, Linny Heagy, was entered in the AOI (Association of Illustrators) annual awards in London where it earned shortlist honors out of thousands of entries. It was entered in AOI's new category of Research and Knowledge. In order to be a shortlist nominee, at least two of the three judges must vote for each entry. The following judges for the Research and Knowledge category were: Wolfgang Stuppy, Seed Morphologist, Royal Botanic Gardens Kew; David Bickle, Partner, Hawkins\Brown Architects; Natalie Kay Thatcher, Illustrator and Founder of Jiggling Atoms. This illustration is the frontispiece for volume 6 in the FNAA series.

Dionaea muscipula by Linny Heagy; frontispiece for volume 6

From the website: "The AOI Illustration Awards are the most comprehensive and highest profile illustration awards based in the UK. The AOI Illustration Awards will promote exceptional work by illustrators and present illustration as a major force in global visual culture. This year launches the AOI awards as an international invitational open to illustrators worldwide working across all sectors and in any medium."

The shortlist honorees can be found at: http://www.aoiawards.com/ Click on "Shortlist 2013" in left column and then scroll to the "Research" tab or click on the "Research and Knowledge Communication" green box.

Kanchi Gandhi (GH) FNA Nomenclatural Editor: Travel Update

During December 2012–January 2013, Kanchi N. Gandhi travelled within India. Gandhi was invited to serve as the Course Director for a Botanical Nomenclature Course workshop. It was jointly organized by the Botanical Survey of India (BSI) and Environmental Information System, of the Ministry of Environment and Forests, Government of India, and was held on 11–13 Jan 2013 at Kolkata, India. The workshop was the first of its kind held within India. The focus of the workshop was on the recently published International Code of Nomenclature for algae, fungi, and plants (Melbourne Code). More than 90 people from different academic and research institutions of India attended the workshop. Dr. Paramjit Singh, Director (BSI), was the Convener; and Dr. P. Lakshminarasimhan, Scientist (BSI), was the Coordinator. The late Dr. Mithilesh K. Pathak, then BSI Botanist, was helpful in organizing the workshop. Gandhi's lectures covered the following topics: 1) An historical overview of the botanical nomenclature from Linnaeus to the Melbourne Code; 2) Review of the physical structure of the Melbourne Code; 3) Preamble, Ranks and Names of Taxa, and Effective Publication

appropriate Articles 1–28); 4) Validity of Names Part I (Articles 32–45); 5) Validity of Names Part II; 6) Authorship Citation (Articles 46–50); 7) Rejection of Names (Articles 51–60) and 8) Anamorphic fungal and hybrid names.

Gandhi also gave botany-/environment-related talks at: BSI Headquarters, Kolkata; Chinmaya Vidyalaya, Kolar; D.V.S. College of Arts and Science, Shimoga; Government Ramnarayan Chellaram College of Commerce, Bangalore; M.L.A. First Grade College for Women, Bangalore; PES Institute of Technology and Management, Shimoga; Shivaji University, Kolhapur; The National College, Mumbai (Bombay); and University of Goa, India.

Volume Updates

Volume reports mention stages of the editorial process. Here is a brief description of the stages:

02: Initial electronic copy saved, undergoes initial cleanup, and is sent to taxon editor (TE); regional reviewers; managing editor (illustrations); editorial director (backbone; initial distributions); nomenclatural editor; and tech editor simultaneously. After the initial tech edit, it goes to the bibliographic editor.

03: Treatment revised in light of reviewer comments; Tech editor does in-depth edit, which involves integrating review comments, entering editors' questions, final verification of names-to-be-accounted-for, amplifications entered, and parallelism among genera/tribes/family adjusted, confirmed.

04: Working version completed; returned to author with questions, comments regarding emendations, corrections; working version returned; updated; near-final version created (e.g., 04a, 04b, etc.) and sent to bibliographic editor for reconciliation edit.

Volume 6 Update: *Robert W. Kiger and Mary Ann Schmidt*

Volume Summary: 19 families, 104 genera, 500+ species.

With the receipt of the Malvaceae subfamilies, all treatments are now in hand for the volume, most in the 04 and 05 stages. Malvaceae treatments require another technical edit before being returned for revisions.

Volume 9 Update: *Luc Brouillet*

Volume 9 is being actively prepared for publication. Illustrations have been in hand for more than three years; three families are in layout.

Both the Rosaceae family description and the key to tribes have been edited; the latter needs to be checked against tribal descriptions. All tribal descriptions and keys to genera within tribes are complete and final editing is being done on them, particularly as the genera they include get edited. There are three subfamilies in Rosaceae which can be used as starting points for page making.

Subfamily Rosoideae has 96% of species in 03 (final correction is still being done on *Potentilla*); 77% are in final editing (04) and none is in galley.

Editing of subfamily Dryadoideae-tribe Dryadeae (4 gen., 17 spp.) is complete and the subfamily is ready to go into layout.

Subfamily Spiraeoideae is all in 03 and 95% are in 04; *Amelanchier* (18 spp.) is in layout.

Volume 10–11 Update: *James L. Zarucchi and Martha Hill*

Volume Summary: Total of 13 families, 220 genera, 1826 species; treatments of 1236 species (68%) received. These exclude drafts of treatments at the editorial center (MOBOT) that have not been released from authors. *Astragalus* (Fabaceae) alone has 345 species with 283 varieties.

The 13 families in the two volumes are: Proteaceae (1 genus/1 species), Buxaceae (2/3), Gunneraceae (1/1), Haloragaceae (3/17), Combretaceae (5/8), Lythraceae (10/31), Onagraceae (17/273), Myrtaceae (13/38), Melastomataceae (3/15), Fabaceae (155/1375), Surianaceae (1/1), Polygalaceae (6/54), and Elaeagnaceae (3/9).

Volumes 10–11 will be a two volume publication and will have at least 87 authors.

Proteaceae (TE: Leila Shultz): treatment by Peter Weston is in post-review stage. **Buxaceae** (TE: Geoff Levin): treatment by Dave Boufford is in post-review stage. **Gunneraceae** (TE: Leila Shultz): treatment by Gordon Tucker is in post-review stage. **Haloragaceae** (TE: Leila Shultz): treatment by M. S. Alix and R. W. Scribailo is in review stage. **Combretaceae** (TE: Dave Boufford): treatment by Walter Judd is in post-review stage. **Lythraceae** (TE: Dave Boufford): treatment prepared by Shirley Graham (& co-author for *Trapa* is C. Barre Hellquist) is in post-review stage. **Onagraceae** (TE: Dave Boufford): Received partial family/subfamily treatment and 13 genera from Warren Wagner, with remainder promised 'soon.' **Myrtaceae** (TE: Dave Boufford): treatment by Leslie Landrum is in post-review stage. **Melastomataceae** (TE: Dave Boufford): treatment by Guy Nesom is in post-review stage. **Fabaceae** (co-TEs: Jay Raveill and Mike Vincent): 949 of the 1375 species have been delivered to date, and treatments with a total of 643 species are in review stage. Some of the larger

genera that remain to be delivered are: *Acmispon* (29 spp.), *Desmodium* (46 spp.), *Lespedeza* (26 spp.), *Pediomelum* (22 spp.), and *Trifolium* (96 spp.). **Surianaceae** (TE: Luc Brouillet): treatment by James L. Pringle is in post-review stage. **Polygalaceae** (TE: Jackie Poole): treatment by J. Richard Abbott is in review stage. **Elaeagnaceae** (TE: Gordon Tucker): treatment prepared by L. Shultz and W.A. Varga is in post-review stage.

Volume 12 Update: *Geoffrey A. Levin and Lynn Gillespie*
All but Linaceae and six genera in Euphorbiaceae (each with one species) have been submitted. Significant changes since the last newsletter are listed below. **Celastraceae** (TE: Dave Boufford, Elizabeth Wells): treatments by four authors are back from authors post review, being prepared to send to John Strother and Bob Kiger. **Elatinaceae** (TE: Geoff Levin): treatment by Gordon Tucker is indexed, but being harmonized with vol. 12 after being transferred from another volume. **Euphorbiaceae** (TE: Lynn Gillespie, Geoff Levin): treatments by various authors are to be submitted (6 by 1 author), out for review (5/3), with the authors' post-review (2/2), with Strother and Kiger (2/1), back from Strother and Kiger and being prepared for author (6/4), back from author post Strother/Kiger and ready for indexing (2/2), and indexed (2/2). **Garryaceae** (TE: Geoff Levin): treatment by Guy Nesom is back from the author, in post-review and being prepared for John Strother and Bob Kiger. **Linaceae** (TE: TBD): Nancy Morin has produced a draft treatment of *Hesperolinon* and is writing *Linum* with Alan Whittemore's help. **Malpighiaceae** (TE: Geoff Levin): treatment by Bill Anderson is in review. **Nyssaceae** (TE: Geoff Levin): treatment is in review. **Phyllanthaceae** (TE: Lynn Gillespie): treatments by 4 authors are back from bibliographic review and being prepared for author. **Picrodendraceae** (TE: Lynn Gillespie): treatment by John Hayden is back from author post Strother/Kiger and ready for indexing. **Putranjivaceae** (TE: Lynn Gillespie): treatment by Geoff Levin is back from Strother and Kiger and being prepared for author. **Simmondsiaceae** (TE: Geoff Levin): treatment by Lynn Gillespie back from the author post-review and being prepared for Strother and Kiger. **Zygophyllaceae** (TE: Geoff Levin): treatment by Duncan Porter is in post-review stage.

Volume 13 Update: *Luc Brouillet*
Volume Summary: Families 13: Rosidae: Sapindales (7), Geraniales (1); Asteridae: Ericales (2); Apiales (3); Escalloniales (1). All genera now have been assigned.

Escalloniaceae and **Pittosporaceae:** fully edited (04), awaiting final harmonization of families, and can be seen as provisional publications on the FNA web site. **Nitrariaceae:** corrected by the author and awaits final editing (03). **Burseraceae, Actinidiaceae,** and **Balsaminaceae** (02): being corrected by the authors.

Other families in (02) have some genera that are ready to be sent back to authors for correction or for which regional reviews are being compiled. **Sapindaceae** (01) has been completely received but requires work from the taxon editor before going to regional review, as are some genera of **Rutaceae**.

Overall, 55% of species have been received, 35% are under review or correction, and 1% are in final editing. About 8% of all illustrations have been inked and two are scanned.

Volume 14 Update: *Robert Kiger*
Volume Summary: 8 families, 102 genera, 500+ species.

All treatments are in hand for most families, with the exception of **Apocynaceae** and a few in **Solanaceae**. Most treatments are in the review or revision stages.

Volume 15 Update: *Nancy Morin*
Volume Summary: 6 families (Cordiaceae and Ehretiaceae are split from Boraginaceae), 76 genera, and ca. 909 species

Fouquieriaceae (TE: Jackie Poole, 1 genus, 1 species): 02 version of family and *Fouquieria*, submitted long ago by Jim Henrickson, has been through a second regional review. **Polemoniaceae** (TE: Nancy Morin, 18 genera, 312 species): Bob Patterson is in contact with Polemoniaceae authors. Mark Porter has several large genera (*Aliciella*, 20 spp.; *Gilia*, 57 spp., *Giliastrum*, 5 spp., *Loeselia*, 2 spp.) and Bob has seen some drafts. Leigh Johnson has most of the rest (*Collomia* 13, *Lathrocasis* 1, *Navarretia*, 13). *Eriastrum*, 16 spp., Sarah De Groot author, has nearly finished her thesis chapter that will form the basis of her FNA treatment. *Leptosiphon* (29 spp.) is ready for review; *Gymnosteris* (2 spp.) is ready for review. *Linanthus* (24 species) was submitted in April. *Polemonium* (21 species) is being edited. *Phlox* (63 spp.) pencils of illustrations have been done and author Carolyn Ferguson is working actively on treatment. *Polemonium* (21 species) illustration inks have been done and treatment is still in editing. Dieter Wilkins has assured the editor that he is working on *Ipomopsis* (25 species). **Hydrophyllaceae** (TE: Nancy Morin & Ron Hartman, 15 genera, 240 species). Bob Patterson has written a family description and he and Genevieve Walden have written a key to genera. *Phacelia* still being edited by Morin; most of the illustrations of *Phacelia* are complete. All of Bob Patterson's treatments are ready for review, which is everything else except *Nama* and *Eriodictyon*. Sarah Taylor, *Nama* author, said she would have her treatment

in soon. *Eriodictyon* author Gary Hannon has pulled specimens and sent instructions for illustrations. **Boraginaceae** (TE: David Giblin, 43 genera, 357 species). Almost all genera have been assigned to authors. Unassigned genera are: *Cerinthe, Cynoglossum, Heliotropium, Nonea, Pulmonaria,* and *Tournefortia*. Ron Kelley will write *Cynoglossum* and *Heliotropium*, if no other author can be found. David is editing *Asperugo, Borago, Omphalodes,* and *Pentaglottis*. Authors have reported progress on *Cryptantha, Oreocarya, Lappula,* and *Lithospermum,* and Ron Kelley spent a week with him working on *Cryptantha* and relatives. Jim Miller submitted draft treatments of **Cordiaceae** and *Cordia,* and **Ehretiaceae**, *Bourreria, Ehretia, Varronia*.

Volume 16 Update: *Nancy Morin and Alan Weakley*
Volume Summary: 3 families, 90 genera, 574 species.

Oleaceae (TE: Leila Shultz; 12 genera, 63 species). Oleaceae will be posted as a provisional treatment once John Strother's edits have been incorporated. Specimens for illustration have been pulled, instructions have not yet been provided. Guy Nesom is the author for all but *Olea*, which he co-authored with Gordon Tucker, and *Fontanesia*, done by George Yatskievych. **Verbenaceae** (TE: Alan Weakley & Nancy Morin; 12 genera, 80 species) have been regionally reviewed. Guy Nesom is author of all treatments except *Lantana*, which was done by Roger Sanders. Specimens and, for some, instructions, have been provided for 10 illustrations; 1 final ink has been done (*Lantana*). **Lamiaceae** (TE: Nancy Morin & Alan Weakley; 66 genera, 431 species). Treatments of 38 genera and 190 species have been submitted (a few in pre-01 stage); 10 genera and 183 species have been reviewed; all are waiting further editing by the taxon editor.

Volume 17 Update: *Craig C. Freeman and Richard K. Rabeler*
Volume Summary: 9 families, 94 genera, 936 species, 48 authors; Linderniaceae (3 genera, 10 species), Mazaceae (1/2), Orobanchaceae (27/284), Paulowniaceae (1/1), Pedaliaceae (2/2), Phrymaceae (7/132), Plantaginaceae (41/459), Polypremaceae (1/1), Scrophulariaceae (9/45). Illustrations: 224 species (projected).

As of 22 June 2013, 89 of 101 treatments (85%) covering 714 species (76%) have been submitted. Since 1 January 2013, 19 new pre-01 submissions have been received:
Progress by family: Linderniaceae (TE: Freeman): all treatments received and in review. **Mazaceae** (TE: Freeman & Rabeler): posted Provisional. **Orobanchaceae** (TE: Freeman & Rabeler): 37% of species submitted, 10 genera are posted Provisionals. *Agalinis* (34 sp.) and *Pedicularis* (37 sp.) are finally ready for review. 8 ms. have not been received, the largest of them being *Castilleja* (113 sp.), *Cordylanthus* (13 sp.), *Euphrasia* (18 sp.), and *Orobanche* (15 sp.). **Paulowniaceae** (TE: D. Lewis): posted Provisional. **Pedaliaceae** (TE: L. Shultz): all treatments received and in review. **Phrymaceae** (TE: Freeman & Rabeler) all treatments received, 2 genera are posted Provisionals; *Diplacus* (46 sp.) and *Erythranthe* (81 sp.) still are pre-review. **Plantaginaceae** (TE: Freeman & Rabeler): 90% of species received, 8 genera are posted Provisionals. We hope that *Plantago* (29 sp.), *Synthyris* (19 sp.), and *Veronica* (34 sp.) can be released for regional review soon. 7 ms. have not been submitted, the largest among them are *Collinsia* (23 sp.) and *Gratiola* (15 sp.). **Polypremaceae** (TE: Lewis): posted Provisional. **Scrophulariaceae** (TE: Freeman & Rabeler): all treatments received; *Limosella* is in review, all others have passed review and all but *Capraria* and *Scrophularia* are posted Provisionals.

Volume 18 Update: *Debra K. Trock*
Volume Summary: Volume 18 will include 16 families, 123 genera and 570 species. The families included in this volume are: Rubiaceae (38 gen/162 sp.); Lentibulariaceae (2/27); Acanthaceae (19/76); Bignoniaceae (14/22); Martyniaceae (2/7); Aquifoliaceae (2/14); Campanulaceae (19/112); Menyanthaceae (3/8); Goodeniaceae (1/2); Calyceraceae (2/2); Adoxaceae (3/ca. 30 per latest draft); Diervillaceae (2/5); Caprifoliaceae (3/50); Linnaeaceae (3/3); Dipsacaceae (5/10); Valerianaceae (4/46).
Progress by Family: Rubiaceae (TE: Craig Freeman): Treatments of 15 of 38 genera have been submitted and are in the hands of the Taxon Editor. Initial edits of 14 manuscripts have been completed by the Taxon Editor: 7 manuscripts were returned to authors for revision, 4 manuscripts still are with authors, and 3 manuscripts returned by authors (*Erithalis, Ernodea, Guettarda*) have been submitted to the tech editor for initial formatting and distribution for regional review. We have received an additional 7 manuscripts (*Diodia, Diodella, Randia, Cephalanthus, Mitracarpus, Mitchella, Paederia, Richardia*). All have been archived at MO and are awaiting a first pass by the technical editor. **Lentibulariaceae** (TE-Leila Shultz): Entire family back from regional review, tech edit completed. Bibliographic and nomenclatural edit completed. Sent back to Taxon Editor for a couple of issues and then ready for provisional publication. Since last report this treatment was edited by John Strother and will now have to go back to the author for several suggested changes. The author had made timely corrections and was ready for this to go up as a provisional. **Martyniaceae** (TE: Leila Shultz): We have received the entire treatment comprising 2 genera/7 species.

It looks to be in good shape and is awaiting a first technical edit. **Linnaeaceae** (TE: Raveill and Tucker): All treatments (3 genera/3 species) are in and awaiting a first pass by the technical editor. **Dipsacaceae** (TE: Raveill & Tucker): *Knautia* treatment is back from regional review. *Sixalix, Succisa,* and *Succisella* have all been submitted and are awaiting a first pass by the technical editor.

Submitted earlier and in various stages of editing are Acanthaceae, Menyanthaceae, Diervillaceae, two genera in Adoxaceae, and 1 genus in **Caprifoliaceae**.

Bryophyte Editorial Center Update: *Richard H. Zander*
Volume 28 (remainder of the mosses): All treatments are now with the technical editor and galleys are going to authors. All figures are finished. A rigorous editorial procedure is being followed to minimize inconsistencies between keys and descriptions and to provide parallelism.

Volume 29 update (Hepatics and Hornworts): Volume Summary: There are 48 families, 53 genera submitted, 42% to date, 564 species with a total of 169 plates and 15% completed.

This volume is tentatively expected to be finished in three years. Forty-two percent of the genera and 44 percent of the species are submitted, with 21 and 20 percent reviewed and done, respectively. Fifteen percent of the plates are finished. Authors have been apprised that their manuscripts are due in two years.

Herbarium and Botanical Garden News

Consortium of Pacific Northwest Herbaria Update

Ben Legler

The Consortium of Pacific Northwest Herbaria's online database has just passed 2 million records. The database now contains the holdings of all major herbaria plus many of the smaller herbaria within the Pacific Northwest region, encompassing Oregon, Washington, Idaho, Montana, British Columbia, the Yukon Territory, and Alaska. Also included are 385,000 high-resolution specimen images that can be viewed online, and derived resources such as checklists and distribution maps. Visit the web site at http://www.pnwherbaria.org/.

The Consortium, known as PNW Herbaria for short, is nearing the end of a collaborative, 3-year NSF grant to image and capture label data from regional herbaria. During this time, the PNW Herbaria database grew from 700,000 to the current 2 million records. Over 400,000 specimens were digitized specifically for the grant, and another 80,000 are being captured through separately funded projects at some Idaho herbaria. The remaining growth came from the incorporation of herbaria with pre-existing databases.

We suggest that FNA authors use the PNW Herbaria database and associated resources to verify species distributions within the region and ensure that occurrences within individual states are not overlooked. The database also may be used to identify herbaria that hold specimens of interest for loans, obtain habitat information from specimen labels, and examine morphological characters directly from the images. Of particular interest to botanists working in the Pacific Northwest are pre-compiled species lists, distribution maps, and specimen label data designed for loading onto mobile phones and tablets, allowing access to nearly the full database in the field without a network connection. The datasets can be found at http://www.pnwherbaria.org/data/mobiledatasets.php.

Electronic Resources

Biodiversity Heritage Library Releases New User Interface

The Biodiversity Heritage Library (BHL) has released a new user interface, including an updated website design, improved book navigation, and article-level access to collections. The new interface was informed by usability studies and is based on the design and functionality of the BHL-Australia portal.

Current Improvements Include:

- **Updated Design:** The website's design has been upgraded to reflect the celebrated aesthetics of the BHLAustralia portal.
- **Article and Chapter Access:** The ability to search BHL by article or chapter titles has been implemented. To date, over 81,000 articles and chapters have been indexed and are searchable within BHL. Additional articles and chapters will become available as the collections continue to be indexed.
- **Open Data Enhancements:** BHL's APIs, OpenURL

interface, and Data Exports have been modified to include available article and chapter information.

- **Book Viewer Updates:** The BHL book viewer has been updated, allowing users to view multiple columns of pages on screen at once and more easily navigate to a specific page within a book. Users can also view OCR text alongside page images, and, where the books have been indexed, users can navigate directly to the articles or chapters within using a new Table of Contents feature.
- **PDF Creation Improvements:** The custom PDF creation process has been improved, allowing users to select pages for their PDF while in the book-viewer mode and more easily review the PDF before creation.

Upcoming Improvements Include:

- **Improved Taxon Name Finding Algorithms:** BHL will soon implement a new algorithm capable of identifying previously undiscovered taxon names throughout the BHL corpus. Test applications of this algorithm on a portion of the BHL corpus have already resulted in an increase of nearly 50 million name instances in BHL.

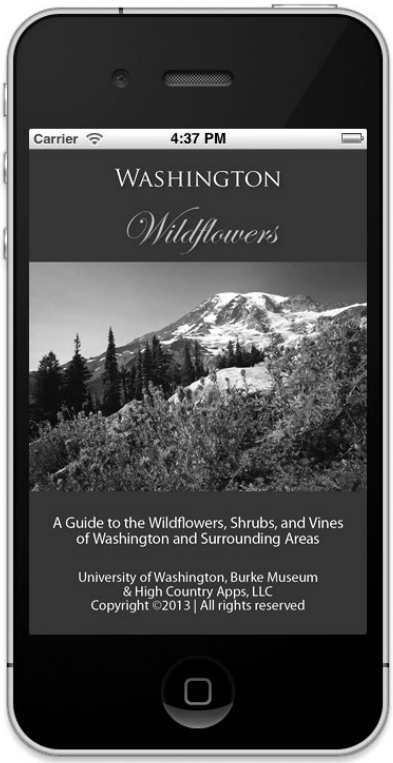
These developments follow BHL's December, 2012, milestone achievement of providing access to over 40 million pages and over 110,000 volumes of freely-available biodiversity literature.

BHL partners comprise 15 natural history libraries in the U.S. and the United Kingdom. They are committed to working together to digitize the published literature of biodiversity held in their respective collections and making that literature available for open access and responsible use as a part of a global "biodiversity commons." The BHL Secretariat is hosted by Smithsonian Libraries. The Technical Director and portal development team are hosted by Missouri Botanical Garden. Affiliated BHL projects have been established in Europe, China, Australia, and Brazil. To further explore the new BHL, visit http://www.biodiversitylibrary.org/.

Wildflower Identification App Released by WTU

David Giblin, University of Washington Herbarium, Burke Museum

The University of Washington Herbarium (WTU) at the Burke Museum, the authors of *Wildflowers of the Pacific Northwest*, and High Country Apps have partnered to produce the new "Washington Wildflowers" plant identification app for iOS, Android, and Kindle mobile devices. The app provides images, species descriptions, range maps, bloom period, and technical descriptions for 870 common wildflowers, shrubs, and vines found in Washington and adjacent areas of British Columbia, Idaho, and Oregon. The majority of species included are native; introduced species common to the region are covered as well. The app does not need an Internet connection to run, so users can access the content anywhere they go.



Though primarily designed for amateur enthusiasts, the breadth of content in *Washington Wildflowers* also makes it appealing to more experienced botanists. Users can browse the species list by common or scientific name, and even by family, to locate a plant and access the related information. Most users will rely on the easy-to-use search key to accurately identify plants of interest.

The key's interface is broken into nine simple categories: growth habit (e.g., wildflower, shrub, vine), flower color, month of year, geographic region, habitat, leaf arrangement, leaf type, duration (annual, biennial, perennial), and origin (native or introduced). Users select choices in as many or as few categories as they wish. As categories are chosen, the number of species found is displayed at the top of the page. When all choices have been entered, the click of a button returns thumbnail images and names for potential matches. Users scroll among the species on the list and tap a thumbnail image to access additional photos, descriptions, and range maps.

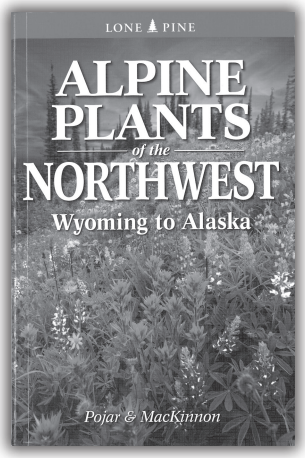
Washington Wildflowers includes supporting documents with extensive information on the ecoregions of Washington, descriptions of habitats found across the state, wildflower destinations with best time to visit, insights into how climate influences plant communities found here, as well as detailed instructions on how to use the app. Users will also find an extensive glossary of botanical terms, along with labeled diagrams of leaves, flowers, and inflorescences. Detailed

descriptions can be found for each family contained in *Washington Wildflowers*. Tapping on a family name brings up a list of images and names for all species in the app belonging to that family.

Washington Wildflowers will appeal to individuals of all ages who are interested in knowing the names and natural history of the plants that they encounter in Washington. A portion of revenues from the app will support continued botanical exploration in the Pacific Northwest region. To learn more about the app please visit http://www.highcountryapps.com/.

Publications

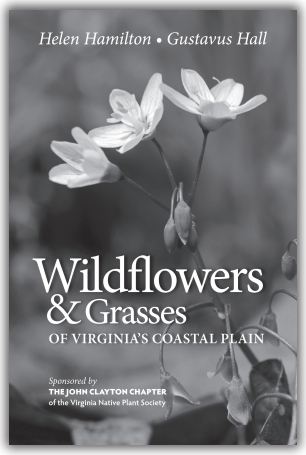
Alpine Plants of the Northwest: Wyoming to Alaska by Jim Pojar and Andy MacKinnon, with Rosamund Pojar, Curtis Björk, and Hans Roemer. 2013. (ISBN 978-1-551-05892-4, pbk.). Lone Pine Publishing, http://www.lonepinepublishing.com/. (**Orders:** In Canada: accounts@lonepinepublishing.com. In the US: order@lonepinepublishing.com. $29.95, 528 pp., 5½" × 8½".



From the Publisher: Two of the Northwest's most respected nature writers have collaborated once again to produce an outstanding field guide to the plants that grow at high elevation, above the tree line, in the mountain systems of the Western Cordillera. The book features more than 500 plants found in the alpine regions of western North America. MacKinnon's and Pojar's rich and engaging notes on each species include descriptions of the unique characteristics of each plant, as well as of its habitat and range. The book features full-color photographs throughout. Whether you are a professional botanist, a mountain guide, an amateur naturalist, or an outdoor enthusiast who loves to brave the high country, you will find this book of immense value. Among other virtues, it will help to enhance your appreciation of the fragility and vitality of this unique group of plants, and to realize the need for care and responsibility when navigating alpine meadows and mountain slopes.

Wildflowers & Grasses of Virginia's Coastal Plain by Helen Hamilton and Gustavus Hall. Aug 2013. (ISBN-13: 978-1-889878-41-6, flexbound). Botanical Research Institute of Texas Press, 1700 University Dr., Fort Worth, Texas 76107-3400, U.S.A. (**Orders:** http://www.brit.org/brit-press/books/VAwildflowers, 817-332-4441 x 264; orders@brit.org). $24.95, 288 pp., 6"×9".

From the Publisher: From articles written and published by the first author in local newspapers over the past seven years, a book is being created about local wildflowers and grasses. The second author, Dr. Gustavus Hall, Professor *Emeritus*, College of William and Mary, rewrote portions of the text to ensure botanical accuracy. Louise Menges, Editor, maintained the photo inventory, selected appropriate images for each page, and designed the layout of each page.



Sponsored by the John Clayton Chapter of the Virginia Native Plant Society, many plants included are native to the Coastal Plain of Virginia; some are introduced from other areas in the U.S. and from other countries. Included are non-woody plants often seen along roadsides, in meadows, gardens, and lawns. Many are weedy, with small flowers, not usually seen in field guides. Also included are grasses commonly seen in the Virginia's Coastal Plain.

The plants included here occur in most counties of the Coastal Plain of Virginia, and some may be found throughout the Atlantic and Gulf coastal plains from Cape Cod to Mexico. Originally, the book was conceived to include only plants native to the Coastal Plain. In decades of field work, the authors have observed very conspicuous non-native (introduced) plants displacing natives in many locations. These familiar, introduced plants are in the book, to help users distinguish desirable native plants from unwanted species.

Obituary

Timothy J. Motley

Timothy J. Motley, the J. Robert Stiffler Distinguished Professor of Botany at Old Dominion University and director of science at the Norfolk Botanical Garden (NBG), died Thursday, March 28, after suffering a heart attack. He was 47.

Motley, who grew up on a farm in central Illinois, became interested in plants and gardening at an early

age. He earned bachelor's and master's degrees in botany at Eastern Illinois University. For his doctoral work, he moved to the University of Hawaii, Manoa, and his core research became Pacific-based. "I am intrigued by how these remote islands became populated by plants and animals, and what the relationships are between plants that occur on separate islands or archipelagos," he said in an interview soon after arriving at ODU in 2006.

Prior to joining ODU, Motley was associate curator of the Lewis B. and Dorothy Cullman Program for Molecular Systematics Studies at The New York Botanical Garden. The molecular studies program was just getting started when he took a job there in 1997. "When I saw this position in Norfolk, I once again saw a chance to build a molecular plant research program with the NBG and Old Dominion," Motley said in the 2006 interview.

Motley was the first researcher to hold the joint ODU/NBG professorship named for Stiffler, a former gardening columnist of The Virginian-Pilot and the author of *Gardening in Southeastern Virginia and Northeastern North Carolina*. The professorship was made possible by a $1 million anonymous gift. Motley also directed ODU's Arthur and Phyllis Kaplan Orchid Conservatory.

Although Motley did research in the Pacific islands, he often pointed out that a plant group he studied has a close relationship to the bluets of the U.S. East Coast, where Stiffler's expertise was centered. Motley was an expert in molecular systematics and used molecular techniques-for example, to study DNA-in order to learn the sort of evolutionary relationship that would tie bluets to plants on a Pacific island.

A species in the coffee family was named in honor of Motley in 2011. The plant that is now known as *Chiococca motleyana* had previously been classified as the only member of the genus *Asemnantha*. Motley authored a journal article in 2005 describing DNA analyses he and colleagues had conducted on this small shrub. Although he did not transfer the name, he made a case for a reclassification to the genus *Chiococca* in that article

His research interests included the fields of plant systematics, population genetics, conservation, ethnobotany, and reproductive biology. The studies focused on the molecular systematics of the coffee family (Rubiaceae) and the strychnine family (Loganiaceae).

Meetings/Workshops

Botany 2013: Celebrating Diversity
July 27–31, 2013
Riverside Hilton
New Orleans, Louisiana

More details at http://www.2013.botanyconference.org/

60th Annual Systematics Symposium
October 11–12, 2013
Missouri Botanical Garden
Saint Louis, Missouri

With support from the National Science Foundation

Organizing committee

Peter Hoch, Amy Zanne, and Peter Stevens

Phylogeny meets Ecology

Patterns of diversity, community assembly, and niche evolution.

For more information and agenda

http://www.mobot.org/MOBOT/research/symposium/welcome.shtml

Position Available

Missouri Botanical Garden
Senior Vice President, Science & Conservation
Classification: Full time, Regular
Dept/Div: Research

Summary: Responsible for providing Science leadership in support of the Garden across multiple domestic and international locations. Responsible for leading the definition, development, and implementation of the Garden's scientific and conservation strategy, and business plans to support the Garden's strategic plan. Ensures that science and conservation initiatives function proactively to support the organization to achieve its objectives. Leads, develops and motivates an effective and professional research team. Helps to promote the Garden's role in science and conservation to internal and external audiences. Performs duties personally and through subordinates.

For more information go to http://www.missouribotanicalgarden.org/about/additional-information/jobs/open-positions.aspx.