



Just a taste

Grass Manual Newsletter

Number 12

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Prepared by Mary E. Barkworth, Intermountain Herbarium, Utah State University, Logan, Utah 84322-5305.
 Email: mary@biology.usu.edu; Voice: 435-797-1584; Fax: 435-797-1575.

The Bad News

On October 15, 2000, work began on Newsletter 12 for the Grass Manual. You are right; you never saw it. We decided to focus on completing one of the grass volumes for FNA.

It is now 15 months later and the first grass volume (FNA vol. 25) is still not in your hands. Why not?

Not for lack of effort; the task is simply much larger than any of us realized.

This Newsletter is, we are determined, the last one to come your way without a firm publication date for FNA vol. 25. If at all feasible, that date will be in 2002.

Why the uncertainty? Because there are some unfamiliar steps to be taken before we (more accurately, Oxford University Press) can set a publication date.

Elsewhere we present a report on the Manual's progress (and reasons for lack thereof), its funding situation, discussion of some issues, our intermediate and long range plans, and a survey.

Goals, 2002

1 Get publication-ready copy of vol. 25 to Oxford University Press by September.

2 Edit 75% of treatments; illustrate 50% of species for vol. 24 before 2003.

Volume 25 contains:

- Arundinoideae
- Chloridoideae
- Danthonioideae
- Aristidoideae
- Centothecoideae
- Panicoideae

In other words, the PACCAD clade.

Volume 24 contains:

- Pharoideae
 - Bambusoideae
 - Ehrhartoideae
 - Pooideae
- and the keys to genera.

Progress

Volume 25: Treatments

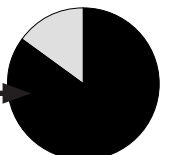
All but three genera (14% of the species) are about to be sent to contributors for final approval and copyright transfer. Some changes will probably be required, but we expect to complete the editing by the middle of March, if not sooner.

Completion of editing was delayed because, although we attempted to make all manuscripts available to FNA's regional reviewers early in 2001, some did not receive their copy until June.

After most regional reviews had been received, Barkworth, Long, and Piep edited each treatment for consistency in wording and content between the keys and descriptions. They also attempted to increase parallelism within and between treatments, and minimize the number of vague statements such as "hairs long".

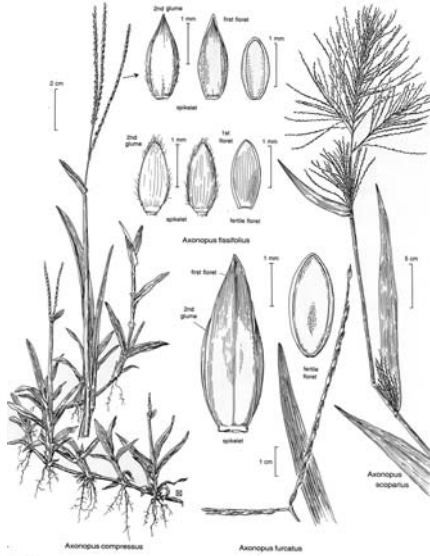
Interested in numbers:? Volume 25 has 6 subfamilies, 11 tribes, 130 genera, and 741 species.

Fully edited species treatments



Grasses are Glorious

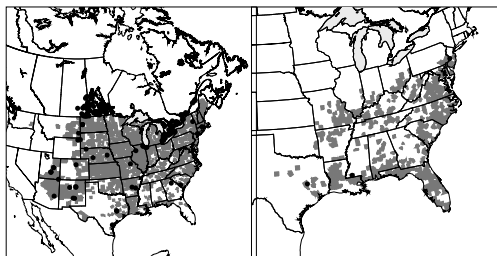
Volume 25: Illustrations



The illustrations are now coming in at a steady rate. To maximize the time Vorobik has for actual illustration, they are now being routed to contributors through Utah State University.

Contributors have been enthusiastic about the quality of the illustrations, even those who have asked for modifications in the draft illustrations.

Maps



Chris Garrard, who developed the mapping program used to generate the maps on the web (<http://herbarium.usu.edu/>

[webmanual/](#)), is now working on a version that will yield high resolution, monochrome maps for use in the printed volumes.

The printed maps are not as attractive, informative, or as large on those on the Web, nor can they be updated once printed.

They will provide a good idea of the distribution of each species within North America and hence, aid in identification. This is the reason for their inclusion.

All maps will be presented in a square box, the same size as those in existing FNA volumes, but the region shown will differ according to the distribution of the species involved.

Locality records are being shown not by dots, which are the same size no matter what the map scale, but by graphic bubbles that will scale with the map. For Canada, Alaska, and Greenland, the bubbles will have a radius of 30 km; for the contiguous United States they will have a radius of 15 km.

Why the difference? Because in the contiguous U.S., the locality data is an addition to county level data; for the rest of the region, locality data is all we have and almost all of it has been determined retrospectively.

How were these radii chosen? By Barkworth, on the basis of what looked good for her favorite species, *Achnatherum hymenoides*.

Names, names, names

Capels maintains the nomenclatural files for the grass volumes in a Word file.

Printing them, together with an index to each name, requires 350 pages using an 8pt Times Roman font and a somewhat more compressed style than in Hitchcock's

Manual of Grasses of the United States. For comparison, FNA vol. 22 has 352 pages.



Agnes Chase

Image Courtesy of Hunt Institute for Botanical Documentation, Carnegie Mellon University.

We had planned to include the nomenclcl files with volume 24, on a compact disk. We are now rethinking this, and invite input.

Adding the compact disk would add \$10 to the cost of the volume. Alternatively, we could sell the disk separately, for \$10-15. This would keep the cost of the volumes down while enabling those interested in the information to obtain it. If sold separately, we would try to keep the cost to \$10, but would have to be able to recoup costs, including paying someone to handle the orders.

Each volume will contain a list of accepted names and the synonyms we have encountered in various floristic works. The presentation will be similar in style to that of *Flora Europaea*.

What next for FNA 25?

1. Complete the illustrations.
2. Obtain approval of treatments.
3. Develop publication-ready copy for Oxford University Press.

The FNA Management Committee decided to provide Oxford University Press with publication-ready copy. This provides greater control over the format, including the formatting of keys, and will minimize the time between submission and publication.

Preparation of publication-ready copy of the grass volumes will be completed at Utah State University. We have elected to use FrameMaker for this task because it has powerful indexing capabilities, permits multichannel publication (which is part of our vision for the future), and because it will facilitate conversion of the manuscripts to SGML.

Preparation of the publication-ready copy is the biggest unknown on the way to publication.

We have invited various companies to bid for preparing the template and for developing the Element Definition Document needed for creating the SGML version.

We anticipate starting work on this aspect of the project in April.

Dactyloctenium radulans in campsite near Moab, Utah.

Volume 24

Yes, we have begun work on this volume. We shall also, however, have to make another estimate of the support needed.

Putting it bluntly, both Barkworth and Vorobik underestimated the amount of work required to complete volume 25. Some activities, such as development of a publication template and a monochrome map generator, will not need to be repeated.

Long and Piep are working through the manuscripts. Their goal is to provide FNA's regional reviewers with much cleaner copy than they received for volume 25, and to send the manuscripts out in manageable chunks.

The first manuscripts will be going out for review in February, 2002.

Vorobik has completed some of the illustrations for the volume.

We planned to have FNA 24 published in 2003 but, with the delay in completing volume 25, this seems unlikely. We shall aim for it, but we are now much more aware of the enormous amount of work that is needed.



Thank you!

Our progress would not have been possible without the financial support we have received over the past two years from units of the U.S. Federal Government and the Chanticleer Foundation. So first, a very heart felt thank you to the individuals within each federal agency that went to bat for the project and to Nancy Morin for persuading Chris Woods of the Chanticleer Foundation that the Flora North America project was worthy of support.

Financial Support (1987-2003)

U.S. Department of Agriculture

Agricultural Research Service	\$173,000
Animal and Plant Health Inspection Service	\$30,000
Forest Service	\$175,000
Natural Resources Conservation Service	\$14,000

U.S. Department of Interior

Bureau of Land Management	\$30,000
Park Service	\$20,000

Chanticleer Foundation (via Flora North America) \$79,720

Utah Agricultural Experiment Station (inc. some MEB salary) \$133,365

Utah State University (overhead waiver, paper, phone, IT support, MEB

The Chanticleer support had the additional benefit of helping provide the 38% match required by the USFS and APHIS contracts. Yes, a combination of Barkworth's salary, waiver of facilities and handling costs, payment of office costs (e.g., paper, mailing, printing, copying and IT support), and some financial support, would come to the required 38%, but the Chanticleer support made it much easier to demonstrate the match. The departmental accountant was particularly happy when this was pointed out to her.

The continuing support of Utah State University, particularly the Department of Biology, has been essential to the project. Our paper, mailing, and copying costs are substantial. Fortunately, we do not need estimate just how substantial.

We did not obtain all the funding that we estimated was needed to finish both volumes. Moreover, it is clear that we underestimated the amount needed. This means that Barkworth will be out begging again, but she really wants to go with volume 25 in her hand. It should be possible, thanks to the recent promise of \$20,000 from the Bureau of Land Management (included in the table).

Grasses are Glorious

And more thanks

When we agreed to adapt the *Manual* manuscripts for publication in the FNA series, we also gained access to that project's regional reviewers.

Phenomenal reviewers

We ran into several difficulties in sending all the manuscripts out, but the reviewers have been phenomenal in their willingness to provide additional information, suggest more effective ways to differentiate between taxa, and draw our attention to inconsistencies that we had missed.

We have even asked some reviewers to help us by measuring specimens. We drew the line at responding to one reviewer's request that treatments state how long 'long rhizomes' are; on the other hand, in many instances we have provided estimates of hair lengths.

What made the reviewers' contributions even more remarkable was that they received all the manuscripts for volume 25, which contains 871 specific and infraspecific taxa, at once AND, at the same time, the treatments of the 854 taxa in volume 4.

One reviewer commented that he had been unable to do any fieldwork last summer, all his time being spent in the herbarium, reviewing manuscripts.

All we can say is THANK YOU.

Thank you!

Web Manual

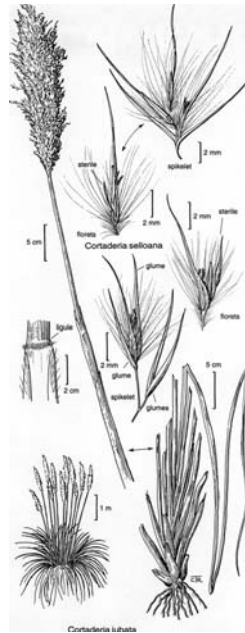
Our primary focus is completion of the printed volumes. Consequently, we devote very little time to the 'Manual on the Web' site (<http://herbarium.usu.edu/webmanual/>).

Chris Garrard, the person who developed our mapping program and the original web site, has made various adjustments to it. Possibly the most visible is the acknowledgement of our funding sources, something that we should have done earlier.

Line drawings

We have begun to make the line drawings for volume 25 available on the Web site. Our priority is on improving the distributional data, but we hope to make the line drawings available as we receive them.

Providing access to the line drawings usually requires electronically 'cutting up' scans of an illustration plate, and replacing the labels with labels of a more appropriate size for viewing over the Web.



Treatments

Dr. Richard Moe, of the University of California Herbaria, developed a program that converted the *Manual* treatments to html format, inserted bookmarks, and restructured the keys. It was wonderful.

Then we went and changed the format. Not only that, the treatments were still being modified in response to reviewers' comments so we gave up on converting them to html format.

One of the advantages of FrameMaker is that it can be used to generate an html version, complete with bookmarks and hotlinks.

Notes

The Web site now contains a button for 'Notes'. If you have tried it, you have probably found nothing. The only genus with notes is *Echinochloa*.



Echinochloa crusgalli

Note rounded apices of upper lemma with tiny hairs below membranous tip (not really visible in this

The idea of the button is to permit the easy incorporation of material that will not be in the printed editions.

In the case of *Echinochloa*, we have added images of herbarium specimens showing the microscopic features that distinguish the species, plus additional comments on what to look for. It would be equally easy to add a page with images of the species

in their natural setting or of comments and data on the physiological attributes of various species (or both these and a whole lot of other information).



Echinochloa muricata

Note the pointed apices and absence of hairs on the upper lemmas and coarse trichomes of lower lemma.

Once the printed volumes are almost completed, we shall look into ways of providing more notes. For now, they will be filled only if people volunteer (hint) or if we have some reason to do so. The notes on *Echinochloa* were started as a means of demonstrating, across a few hundred miles, how to distinguish *Echinochloa crusgalli* from *E. muricata*. And then they grew.



Echinochloa oryzoides

A weed of rice. Note drooping panicles.

Echinochloa orizicola, another weed of rice, has more erect panicles.

Photo: S.W.L. Jacobs

More on Maps

The amount of work that goes into preparing reliable distribution maps is difficult to appreciate.

Most of the information in the maps on the Web was obtained from printed publications. This works reasonably well if there is little disagreement over what constitutes a species. It does not work if there is major disagreement.

Echinochloa crusgalli and *E. muricata* are an example of the latter. Hitchcock, in his *Manual of Grasses of the United States*, did not distinguish between the two species. Moreover, the illustration of *E. crusgalli* looks more like *E. muricata* than *E. crusgalli*.

Hitchcock's treatment has been followed by many North American taxonomists. This means that it is often impossible to determine whether a record for *E. crusgalli* really belongs to that species, or to *E. muricata*. The result is that the apparent distribution of *E. muricata* often follows political boundaries, because floras are generally written for political units.

Barkworth is attempting to improve the accuracy of the maps for *E. muricata*. She has borrowed almost 600 specimens for this purpose. Each specimen has to be carefully examined, and annotated before being returned. That is not a large number of specimens; indeed, it is completely inadequate to the task. Because of the need to finish volume 25, she restricted her loan requests to the

largest herbarium in eastern states for which we had particularly poor data. The holdings of representative western herbaria should also be reviewed, but there are only 24 hours in a day.

Her efforts will not, however, prove that *E. crusgalli* does not grow in any of the counties for which it has been reported because she does not know which specimens were the basis for a particular record.

The only way to develop reliable, verifiable, up to date distribution maps is to develop maps on the Web from direct links to herbarium databases, or to regularly updated posts of the minimal data required for mapping to a central server.

Changing Priorities

At one time, our top priority was development of the nomenclatural material as a separate volume. The primary reason was lack of funding.

With the acquisition of substantial funding, our priorities changed, initially to completion of the *Manual*, a single volume publication designed for use in identifying grasses and only incidentally providing information on their classification.

Chanticleer's funding of the *Flora North America* project changed this priority. The funding came with one condition: publish two volumes per year. Volume 25 is part of the schedule for 2002 (and volume 24 for 2003).

Part, but only part, of our determination to get volume 25 published in 2002 stems from Chanticleer's condition.

An equally large part comes from our own desire to have something to show for all our work.

People

This newsletter has been written by Barkworth, but the the *Manual* project is very much a joint effort.

The Intermountain Herbarium (UTC) of Utah State University is the primary center for the project.

The people at UTC, all of whom work part time on the project, are:

Kathleen Capels: General Editor and maintainer of the nomenclatural and bibliographic files.

Michael Piep and Sandra Long: Scientific Editorial Assistants who help review manuscripts, obtain additional information, and enter geographic data.

Laurel Anderton: Assists in entering geographic data and preparing line drawings for the Web.

Mary Barkworth: Big boss and chief crab.

Linda Vorobik: Illustrations Editor, works out of the University of California, Berkeley, and the University of Washington. She has primary responsibility for the illustrations, including determining , from the keys, which features need illustration. She is assisted by Cecelia Freeman, Karen Klitz, Annaliese Miller, Linda Bea Miller, Hana Pazdírková, Cindy Roché, and Andy Sudkamp.

Grasses are Glorious

Survey

Charles Levine, the CEO of the Flora North America Association, distributed a survey at the annual meeting of the Botanical Society of American and American Association of Plant Taxonomists last summer.

The association is interested in obtaining a broader sampling of opinions, so I am including a copy with this mailing. There is one additional page with a few questions having to do specifically with the grass volumes and the *Manual*.

Your opinions are important to us, so please fill out the survey and return it. Because of the additional page, please return it to:

Mary Barkworth
Intermountain Herbarium
Department of Botany
5305 Old Main Hill
Utah State University
Logan, Utah 84322-5305

Doodling Space

Barkworth ran out of stuff to say!



Distichlis stricta

A plant with long rhizomes