

Ribbens, Eric. 2007. The Wired Herbarium #2: USDA. In *The Vasculum* (newsletter of the Society for Herbarium Curators), January 2007.

The USDA Plants Database (<http://plants.usda.gov/>) “provides standardized information about the vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and its territories.” It is a collaborative effort of several USDA agencies, and contains information for more than 89,000 taxa, with about 42,000 synonyms. The home page loads quickly, has the appropriate navigational buttons (home, help, etc.), but curiously has broad strips of dead space to the left and the right of the text. Fortunately, the dead space is only a feature of the root page. There is a lot of information available on this webpage, and in this review I’m going to focus only on the search ability and associated data.

The user can search for taxa by common name or scientific name, including subspecies, although subspecies searching requires the addition of var. or ssp., and unfortunately the database does not conflate those two categories (i.e., a search for “*Asclepias tuberosa* ssp. *tuberosa*” will work, but “*Asclepias tuberosa* var. *tuberosa*” does not). Therefore, I usually do not search for subspecies, since they will be automatically shown after a search for a species. One nice feature of the search engine is that it returns all hits with a partially spelled species, so if the user can’t remember how to spell *androsaemifolium* or if the user isn’t sure if it is *androsaemifolium* or *androsaemifolia* simply entering “*Apocynum andr*” will find it. A successful search brings the user to a page with a picture, although often the picture is not very useful taxonomically. (For example, compare *Apocynum cannabinum* to *Apocynum androsaemifolium*). A set of thumbnails connect to other images, including drawings from Britton and Brown, which can be very helpful. The images come from a set of more than 30,000 images, and users are invited to submit additional ones. Then synonyms are listed, and searching for a synonym will lead the user to the same page. After this a map of the US shows distributions by state, and clicking on states usually produces a state map of distributions by county. Of course, these distribution maps are only as good as the data underlying them, which is not accessible, but users are invited to submit information about additional county records. However, it is not clear whether, for example, *Apocynum cannabinum* in Alabama has a scattered distribution in reality or if it has been poorly collected and documented. Finally, a variety of other information is presented, including taxonomic classification, threatened and endangered classifications, invasive warnings, and links to other websites.

I have had few problems using this webpage. Searches can take variable lengths of time, but my biggest challenge has been when I make repeated unsuccessful searches. After one unsuccessful search, the error message doesn’t change when another search is finished unsuccessfully, and until I learned to watch the status bar on the lower left of my web browser (where it says “waiting for ..” or “Done”) I was uncertain whether the search was finished or still in progress. Perhaps having the search dialog box cleared after completion of a search would help, and certainly a minor annoyance is needing to delete an old search string before entering a new one. The distributional data should also be treated cautiously. For example, *Opuntia fragilis* in Michigan is shown as present in two counties, one in the upper peninsula and one in the lower peninsula. The lower peninsula population has disappeared and may have resulted from deliberate introduction by a resident. Should it be displayed? Certainly it once was found in that county.

This webpage is unusual in its attempt to systematically manage synonyms. I have just completed annotating my herbarium (40,000 specimens) using this database. I know of other herbariums doing the same, and I have talked to people who dislike their system. The classification is fairly conservative; for example, the Liliaceae are not split into different families. One nice feature is the "Plant Source and Reference" link on each taxon's page, which connects to a page listing references and experts used to make that taxonomic decision. Serious attempts to use this page for annotations will want to consider downloading the data set (under Download on the root page). Checklists can be downloaded by state or for the entire US. Unfortunately, the data is not available as a text file, but must be copied from the webpage and pasted into an ASCII editor. A nice recent feature is that the data in each line is separated by commas, which makes uploading it into Excel considerably easier, although those of us who like to separate genera, species, and subspecies into separate fields will need to fiddle with the results, and missing fields are simply ignored, so expect the column of accepted new names to also contain many common names. Another problem is that changes are not marked or separately available. I also wish that the downloadable database included divisions. There are a few mistakes in the database. For example, *Smilax ecirrhata* is spelled *ecirrata*, and the genus *Guaiacum* is spelled *Guajacum*.

In summary, this page is an important attempt to sort and present information about the flora of the US and associated territories. The database download feature needs improvement, and this site is no substitute for a good field guide, but I find I'm regularly accessing it.