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In This Issue —

Tortuous Taxonomy of the Utah Little Fendlerbush

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[From his web-blog: Botanizing (http://botanizing.typepad.com/botanizing/), 12 August 2006; used by permission]

The varieties of perception and powerful opinions can make a tortuous history of taxonomy. Taxonomies give us names, and biological taxonomies, we hope, reflect entities, such as species and varieties, that exist in nature. How to define such entities, especially those things we would call species, has engendered a voluminous debate, which has raged ceaselessly since the Enlightenment, but I'm less concerned here with those definitions than I am with perception and opinion.

Whatever definition we use for species, varieties, and other taxonomic ranks, it is the characters of organisms that provide the data for our decision-making. There have been, however, those taxonomists who have had such intuitive power that characters seem to have been superfluous to their decision-making. All knowledge, I suppose, comes ultimately from some opinion, but taxonomy has suffered from the opinions of powerful taxonomists who have used intuition more other than characters. Perception, too, is influenced by opinion, but I want to think of it here as an issue of weighting—that is, some taxonomists may focus undue attention on one or a small set of characters to the exclusion of other variation, which effectively weights those few characters more in the process of decision-making.

I have a loan of specimens of *Fendlerella* (little fendlerbush), a genus in the hydrangea family, from major herbaria, and I wanted know whether the specimens were identified correctly. That sounds like a simple-enough problem, but behind that lies the issue whether the taxonomic names for species of *Fendlerella* correspond to discrete patterns of character variation found in the distribution of the genus in nature.

The name *Fendlerella* was first used by E. L. Greene in 1881 to describe what he thought was an undescribed, new species. Here's Greene's description of the discovery: "Last September, while exploring the highest rocky summits of the San Francisco Mountains of South-eastern Arizona, I came upon some bushes growing in the rocky crevices, and the first sight of which called forth the exclamation: 'A second species of *Fendlera*!'"

The taxonomy that Greene created with the name *Fendlerella* was not a new genus but a part of the existing genus *Fendlera*. That suffix –ella connotes something diminutive, and Greene was telling us that this new species was a second, small species of *Fendlera* which he called *Fendlera cymosa*.

By 1881, however, "one of my correspondents," Greene wrote, had told him the new, diminutive *Fendlera*—the *Fendlerella*—had already been described by Sereno Watson as *Whipplea utahensis*. *Whipplea* was, by this time, a genus known already from a species, *Whipplea modesta*, that was found in shady forests of the hills and mountains along the Pacific Coast of North America, as well as Watson's *Whipplea utahensis*, which was described from a collection made on the Colorado Plateau. In one of those little circles of natural history personalities, it is curious that the first specimen of *Whipplea utahensis* was collected by Ellen Thompson. Ellen lived in Kanab, a small town in southern Utah, but the collection was made while she was exploring canyons with her brother John Wesley Powell. Powell, a one-armed, visionary explorer, is known, of course, for his adventures on the Colorado River and description of the Grand Canyon.

Greene accepted that his *Fendlera cymosa* was the same kind of plant that Watson had earlier described *Whipplea utahensis*, but he didn't accept that the plant from the Colorado Plateau could be in the same genus as the Pacific coastal *Whipplea modesta*. Taxonomically, Greene made what is called a new combination—he "combined" *Whipplea utahensis* with *Fendlera* to make the name *Fendlera utahensis*. In Greene's mind *Fendlera utahensis* would now include the plant he had originally called *Fendlera cymosa* and this plant would be more closely related to the other known species of *Fendlera* (*Fendlera*

(*Continued on page 2, Fendlerella*)

Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.
— Linnaeus

(*Fendlerella, continued from page 1*)
rupicola), which as was also distributed in the southwestern U.S., than to *Whipplea modesta.*

Amos Heller was one of the early botanical gypsies of the American West. He roamed the west in the late nineteenth and early twentieth centuries. Heller had round cheeks and glasses, thin hair and a thick mustache, and he was a prolific plant collector and writer. Heller enters our story in 1898, when he wrote that *Fendlera* (or *Whipplea*) *utahensis* "is not a *Whipplea*" but "neither does it agree much better with the genus *Fendlera*. He listed the characteristics of *Fendlera* that made it much at odds with the plant that Watson's *Whipplea utahensis* and Greene's *Fendlera utahensis*. Heller's solution was to leave us with a genus *Fendlera* that had the single species, *Fendlera rupicola*, with a genus *Whipplea* that had a single species, *Whipplea modesta*, and to make a new genus for the plant from the Colorado Plateau. Heller reached back to Greene's name *Fendlerella* for this new genus, creating *Fendlerella utahensis* as the name for the plant that Watson had called *Whipplea utahensis* and Greene had called first *Fendlera cymosa* and then *Fendlera utahensis*.

While the name *Fendlerella utahensis* established itself, the idea of Greene's *Fendlera cymosa* was not lost. Wooton and Standley in 1913 described a new species as *Fendlerella cymosa*, curiously attributing the name to Greene. To further confuse things, Wooton and Standley based the new species on plants collected in the mountains of southeastern Arizona, especially the Huachuca Mountains, but also the San Luis and Organ Mountains of New Mexico, and Guadalupe Mountains of Texas. This constrasts with Greene's sense of *cymosa* as a plant of the Colorado Plateau from the northern Arizona region (San Francisco Peaks). What Wooton and Standley didn't tell us was how their *Fendlerella cymosa* was different from *Fendlerella utahensis*.

Not enough different was the answer of T. H. Kearney and R. H. Peebles. In 1939, they combined *Fendlerella cymosa* with *Fendlerella utahensis* to create the variety *Fendlerella utahensis* var. *cymosa*. They are effectively telling us that the plants from southeastern Arizona, southern New Mexico, and western Texas are different from the Colorado Plateau *Fendlerella utahensis* but not different enough to be a separate species. Kearney and Peebles explained that "leaves are normally narrower and more acute in variety *cymosa* than in typical *F. utahensis* and the two forms are widely separated geographically. . ."

Although Kearney and Peebles did not provide data to support their contention, their ideas are easy to test. The specimens I have on loan cover the geographic range of the cymosa and utahensis forms. To test the ideas that leaves of the cymosa form are narrower than those of the utahensis form, I simply measured leaf lamina lengths and widths to calculate a length to width ratio and plotted those ratios with populations segregated by the regions where Wooton and Standley as well as Kearney and Peebles recognized the entities utahensis and cymosa as differing.

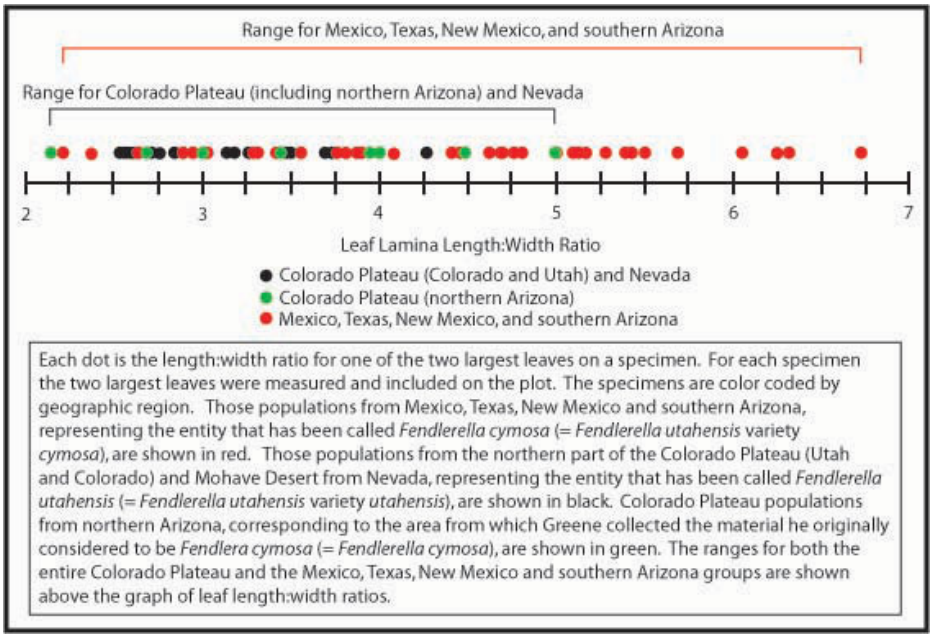
The results of this simple test show that many, but not all, individuals from the southern part of the range, where the *cymosa* entity has been recognized by some botanists, have much narrower leaf laminas than are found among populations to the north on the Colorado Plateau and in Nevada. The results, however, show something unexpected based on the writing of Kearney and Peebles: leaves of both Colorado Plateau/Nevada region and the southern area (Mexico, Texas, New Mexico, and southern Arizona) have extensively overlapping ranges for length:width ratios. We find simply a greater range of length:width ratios, including far narrower leaves, among more southern populations than among those of the Colorado Plateau and Mohave Desert. The contention of Kearney and Peebles that the southern populations have narrower leaves than the northern is only partly, perhaps insufficiently, true—it might be better to say that both regions have continuous variation in leaf length:width ratios with considerable overlap in the range of values.

This differing range of variation between northern and southern populations may point to genetic differences or simply different environmental selection regimes. We would need to conduct further research to distinguish between those alternatives.

As for the contention of Kearny and Peebles that northern and southern populations are geographically widely separated, this also is not strictly true. The extensive collections that are now available show that populations extend continuously from the Colorado Plateau to those in the south through the mountains of western New Mexico.

What does all of this mean for the taxonomy of *Fendlerella*? The results show greater ambiguity than some of the earlier perceptions and opinions might have led us to expect. The greater variation in the leaves of the southern populations may have a

(*Continued on page 3, Fendlerella*)



(*Fendlerella, continued from page 2*)
genetic and evolutionary basis, which would be interesting to investigate. Even if this is discovered to be true, it might not be sufficient to accept that all southern populations form a species or variety different from the *Fendlerella utahensis* on the Colorado Plateau.

Rather than focusing on leaf variation, the next research might better investigate whether we can identify genetically unique sets of populations across the geography of *Fendlerella*. For example, my survey of leaf variations recovered distinctive populations in a handful of geographic enclaves. Each of these distinctive population sets may be reproductively isolated and genetically differentiated—each possibly representing different species.

I would also like to harken back to Heller's idea that *Fendlerella* is something different from both *Fendlera* and *Whipplea*. Our molecular phylogenetic studies have shown that Greene was wrong to ally his *Fendlerella* with *Fendlera* rather than with *Whipplea*. Our studies show that *Fendlerella* is more closely related to *Whipplea* than to *Fendlera*. Although *Fendlerella* and *Whipplea*, as they have been distinguished now for many decades, differ in vegetative form and geography, they have nearly identical flowers. We need further research to test whether the Pacific coastal *Whipplea* evolved from *Fendlerella*, especially its populations in Mexico. If *Whipplea modesta* evolved from ancestral *Fendlerella*, then Watson may have been correct after all in naming originally populations from Utah as *Whipplea utahensis*.

The taxonomic problems of the Utah little fendlerbush may not be resolved, but I believe we can go beyond the limitations of opinion and the weight of perception by testing ideas with data.

Notes

I quote E. L. Greene from "Emendation of the Genus Fendlera" in Bulletin of the Torrey Botanical Club 8: 25-26 (1881) and T. H. Kearney and R. H. Peebles from "New Species, Varieties, and Combinations" in Journal of the Washington Academy of Science 29: 474-492 (1939).

I discuss information from A. A. Heller (1898) Bulletin of the Torrey Botanical Club 25: 626-629 and Wooton and Standley (1913) Contributions to the U. S. National Herbarium 16: 109-196.

Biographical information for selected botanists was taken from John H. Thomas (1979) "Botanical Explorations in Washington, Oregon, California, and Adjacent Regions" Huntia 3(1).

Chamaesyce villifera in New Mexico?

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I have recently been reviewing specimens of various species of *Chamaesyce* in order to elucidate the status of the genus in New Mexico and to develop a local key. There are 28 species listed under *Chamaesyce* in the Working Index of New Mexico Vascular Plant Names (Allred 2007). By examining material at NMC, NMCR, and UNM, I have been able to locate representative specimens of 27 of the 28 species listed. One remains elusive, namely *Chamaesyce villifera* (Scheele) Small. Not a single sheet exists in any of the three herbaria, and no listing appears in the INRAM database from either SNM or ENMU.

Chamaesyce villifera is listed in the Working Index as a result of the citation in *A Flora of New Mexico* by Martin and Hutchins (1980, 1981). Of the 24 taxa now recognized as *Chamaesyce* in New Mexico listed by Martin and Hutchins, *C. villifera* is unique in being described as "Probably flowering from May to October." No others include the word "probably" in describing the flowering period. This would seem to imply the lack of a vouchered specimen. In addition, the typical range of *C. villifera* does not seem to include New Mexico. Louis Cutter Wheeler, in his 1941 treatise on the group, describes the range as "Texas, south to Oaxaca, Yucatan, and Guatemala." His range map shows the plant's only presence in the United States occurs in the state of Texas. Correll and Johnston (1970) in their *Manual of the Vascular Plants of Texas* describe the range as "Dry uplands, Trans-Pecos and Edwards Plateau e. to Bell and Travis cos., May-Oct.; Tex. s. and s.e. to Guat. and Yuc.", again implying that this plant does not appear outside Texas in the United States.

Thus, in view of documentation to the contrary, it would appear that *Chamaesyce villifera* does not occur in New Mexico and should be deleted from the Working Index.

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Botany is the natural science that transmits the knowledge of plants.

— Linnaeus

Plant Collection in New Mexico

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Introduction

The Institute of Natural Resource Analysis and Management (INRAM) made its on-line Internet début in 2005. INRAM (2005) is becoming a comprehensive database of all the biological collections in five museums at New Mexico universities. These include the herbarium in the University of New Mexico's Museum of Southwestern Biology (UNM); the Biology Department (NMC) and Range Science (NMCR) herbaria at New Mexico State University; the Dale Zimmerman Herbarium at Western New Mexico University (SNM); and the herbarium at Eastern New Mexico University (ENMU). This ambitious database project is still incomplete and has several operational problems and limitations, but can be made better with renewed funding and stewardship. At this time, the INRAM database contains the collection records of 122,426 New Mexico plant specimens – enough to make a general assessment of more than a century of efforts in this state by botanical collectors. The INRAM database can be searched by taxon and location, so a broad assessment of collections for counties and some common plant families reveals interesting insights.

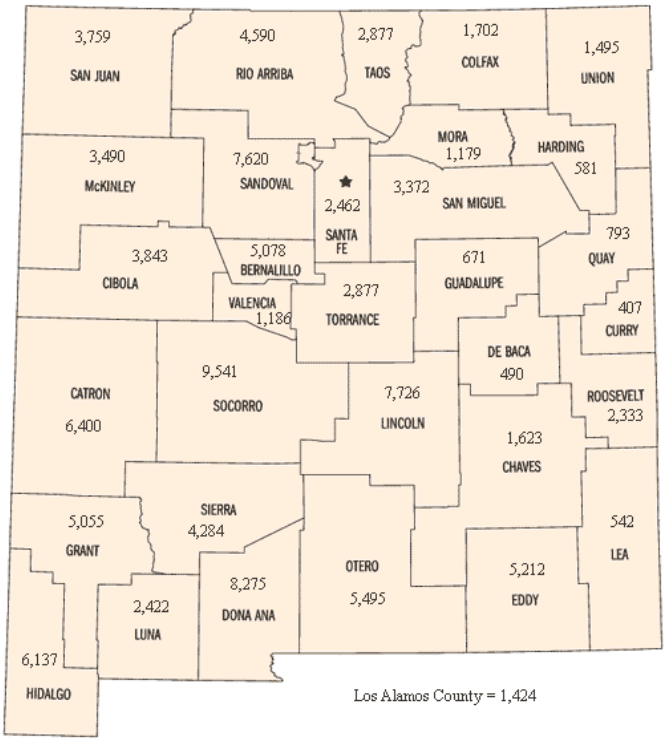
Plant Collection Patterns

Specimen tallies for each New Mexico county are illustrated in Figure 1. Not surprising, counties that have university research herbaria (Bernalillo, Doña Ana, Grant, and Roosevelt) are relatively better collected than some adjacent counties of similar size. Counties with significant areas of public domain, especially national forests, also are generally better collected than adjacent counties with less public access. For instance, Valencia County is relatively close to the University of New Mexico, but has very little public land and is poorly collected. Taos County is approximately 50% public domain. It is much better collected than adjacent Colfax and Mora counties, which have similar or even more species diversity, but very little public land. The eastern one-third of New Mexico is mostly privately owned and generally closed to public access. This limitation is one of the reasons the plants of eastern counties are so poorly represented in New Mexico herbaria.

Remoteness does not appear to be a significant limiting factor for plant collectors. If a remote area has a diverse and interesting flora, botanists will be drawn to it. For instance, Hidalgo County is remote, but has a rich, unique flora that entices botanists to collect there. As a result, Hidalgo County is relatively well represented in the major New Mexico herbaria. Likewise, the diverse floras of the Organ, Sacramento, and Guadalupe mountains, and the mountain ranges of southwestern New Mexico have inspired botanical collectors to document the floras in those counties. Plant collectors have apparently focused more efforts in areas with diverse habitats and rich floras than in more monotonous regions, such as the shortgrass prairie counties of eastern New Mexico.

The pattern of collection efforts, which have focused on certain counties or areas in New Mexico, can be attributed to botanists concentrating on counties that are either proximate to universities and/or have large areas of public land with relatively high species diversity. Socorro County, however, stands out with a comparatively higher number of plant specimens recorded in the INRAM database. This is the result of relatively intense collection activities on the Sevilleta National Wildlife Refuge.

Figure 1. Plant collection efforts by county in New Mexico. Numbers indicate specimens entered into the INRAM (2005) database from five New Mexico herbaria.



Nearly one-fifth of the specimens recorded for Socorro County are from the Sevilleta.

Collection efforts are also somewhat uneven among taxonomic groups. Table 1 shows the 15 largest vascular plant families in New Mexico and their individual percentage of the total state flora. Their specimen representation in the INRAM database allows a comparison of collection effort to taxon diversity for each family. The Poaceae, Scrophulariaceae, Rosaceae, Cactaceae, Ranunculaceae, and Boraginaceae come closest to being proportionally represented in New Mexico herbaria compared to their contributions of species to the total state flora. The over-representation of the Poaceae is undoubtedly the result of the agrostology emphasis at New Mexico State University – Range Science Herbarium. That the Cactaceae is almost proportionally represented in the database is surprising considering the difficulty of preparing specimens from these succulent plants. However, cacti are popular plants with some very dedicated collectors such as the first curator of the UNM Herbarium, Edward Castetter, and his associates.

Table 1. Specimen representation of the 15 largest New Mexico vascular plant families in five New Mexico herbaria (from INRAM 2005) and percent contribution of each family to the total number of state vascular plant taxa (from Allred 2003).

Family	Herbarium Specimens	% of Collection	% of NM Flora
Asteraceae	16,237	13.36	17.25
Poaceae	14,653	12.06	11.27
Fabaceae	7,486	6.16	7.99
Brassicaceae	3,371	2.77	3.99
Cyperaceae	1,525	1.25	3.36
Scrophulariaceae	3,985	3.28	3.28
Polygonaceae	2,116	1.74	2.33
Cactaceae	2,692	2.22	2.33
Rosaceae	2,703	2.22	2.13

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Boraginaceae	1,897	1.56	1.84
Chenopodiaceae	1,633	1.34	1.81
Euphorbiaceae	1,494	1.23	1.79
Lamiaceae	1,550	1.28	1.74
Onagraceae	1,576	1.30	1.69
Ranunculaceae	1,687	1.39	1.62

Most of the other large families are represented by specimens at about three-quarters of the numbers they should be in the overall combined collection. This is likely the result of smaller families with common species (Cupressaceae, Pinaceae, Zygophyllaceae, etc.) being disproportionally represented with large numbers of specimens in herbaria. When some families are over-represented, other families will be under-represented in proportion to the total collection. Collection efforts for Cyperaceae are unusually low. This species-rich family is collected at a rate of about one-third of what it should be. The difficulty of identifying Cyperaceae species, especially in the genus *Carex*, and lack of a good regional dichotomous key have apparently caused many botanists to overlook this family in their New Mexico collection activities.

The Future

The most exciting aspect of the IRAM database is that it has the potential to become a continuously updated geospatial atlas for the New Mexico flora. At this time, the specimen records in the INRAM database are sufficient in number to display (when fully functional) the county distributions of most common plants in New Mexico. However, county lines are political abstractions that provide very little phytogeographic information. The future of this database includes plans for conversion of specimen label locality information to geographically referenced point data that can be placed on maps of New Mexico topography, watershed basins, geology, floristic regions, ecological communities, and land ownership. The UNM Herbarium currently has over 60% of its specimens georeferenced. The ability to visualize and document species distributions in context with the land would have great utility for science and land management. New Mexico botanists (professionals and keen amateurs) can help make this dream come true.

We need more people to go to the field to bring back plant specimens for our New Mexico university herbaria. New Mexico is the fifth largest state in the union and ranks forth in plant species diversity (NatureServe 2002). Yet our specimen documentation of that diversity is relatively low compared to other states with similar size and flora. For instance, the three largest university herbaria in Arizona (ASU, UA, NAU) collectively have 720,000 specimens while the three largest New Mexico university herbaria (UNM, NMC, NMCR) total only 205,000 specimens. Only a small number of New Mexico collectors are presently contributing to our university herbarium collections. The trend for plant specimen acquisition at UNM has significantly declined from its peak decade during the 1960s (Prather et al. 2004).

We can do better. Federal and state agency botanists and biologists should convince their supervisors that specimen documentation of the flora within their jurisdictions is worthy of their time and effort. Plant collection and specimen preparation should be made a part of the job. Keen amateurs that go to the field simply for the love of botanical exploration should be encouraged to collect specimens for our university herbaria. With a little guidance and encouragement from herbarium curators, amateur botanists can provide significant specimen contributions and can also be a source of volunteer help for specimen processing and data entry tasks.

Botanical collectors need to consider the future utility of their specimens when deciding which herbarium to deposit them. Plant specimens in obscure herbaria in agency offices or local community institutions are unlikely to be studied by other botanists or entered into the INRAM database. One notable exception is the San Juan Community College Herbarium (SJCC), which experienced a flurry of collection and study during the last decade for the publication of a San Juan Flora (in prep.). Hopefully, the thousands of northwestern New Mexico specimens at SJCC will eventually be incorporated into the INRAM database, but this is not certain. If you do collect for obscure herbaria, it is only a little extra effort to make duplicate specimens for one of the five university herbaria participating in INRAM. UNM has the greatest potential for expansion due increased storage capacity in its new facilities.

Botanists should also use the INRAM database to guide their collection efforts. Additional specimens of species from places where they have already been collected have less utility than specimens from new locations. Species with no, or few, database records in the counties where they occur should be sought out and vouchered. A quick look at the county floras generated by INRAM can indicate which species need collection for good county coverage. I can see four species (*Yucca baccata, Houstonia rubra, Nama retrorsum, Lepdium latifolium*) in the arroyo near my home in Santa Fe that have not been recorded in the database for Santa Fe County. I will be sure to voucher them next year. Collectors also need to consult the database to identify taxa that are under-represented in university collections compared to their abundance and distribution. Additional specimens of under-collected species of *Carex, Cuscuta, Toxicodendron,* Agavaceae, Viscaceae, exotic plants, etc. will be especially valuable in providing additional collection points to accurately map their distributions.

New Mexico is very large state with many out-of-the-way places that are poorly, or not at all, sampled by plant collectors. General collections, including dominant plants, should occur in these less visited areas to ensure their floras are known and represented in herbaria. Mountain ranges are generally better collected than lower elevations in open areas. We need additional specimens from deserts and grasslands in all counties, but especially northern Luna County, Sierra County, Valencia County, Chaves County, eastern San Miguel and Mora counties, and all the eastern counties. The next time you find yourself in what seems like the middle of nowhere, chances are good that no botanist has ever collected there. So fill up your plant press with everything that has flowers or fruits. Remote, low elevation areas with special habitats like wetlands, sand dunes, gypsum or limestone outcrops, etc. should also be generally collected for everything on them.

Complete and accurate label data make plant specimens useful for phytogeographic and ecological research. The INRAM database presently contains 5,970 New Mexico specimen records from 'unknown' counties. These are usually very old collections. Some may eventually be assigned counties, or even point locations, but with much additional effort. Most of these poorly labeled specimens will likely remain useless for geographic mapping. Even the specimens with good narrative locations, or Township-Range-Section, label data can provide only a general location and not an accurate point location. Fortunately, recent advances in global position satellite technology have given us the ability to pinpoint the locations of our collections. Hand-held GPS units are now affordable and every plant collector can take one to the field to document the exact latitude-longitude, or UTM location, for each specimen. Additional label data for elevation, substrate, and associate species makes each specimen that much more valuable.

Botanical collectors will have to be careful not to get into trouble with

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(Plant Collecting, Continued from page 5)

landowners. At present, only Bureau of Land Management lands and some public road rights-of-way are safe to collect from without landowner permission. Other state and federal land agencies need to lighten-up. Permits or permission for collectors to take plant specimens for university herbaria should be readily available and easy to obtain. Botanists also need to put more effort into asking private landowners for permission to collect. In my experience, most landowners are willing to have plant specimens taken from their properties for university herbaria.

A New Mexico floristic database for phytogeographic study and land management is a very worthy goal of the INRAM program. Its future usefulness will be determined by the amount of accurate information obtained from specimen collections. At this time, there is not enough. We desperately need more plant specimens with good label data to populate this database. I hope all New Mexico botanists and keen amateurs will shake the dust off their plant presses and contribute more specimens to our university herbaria. Collecting entails some extra work, but the results will benefit all of us and future New Mexicans.

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For those unfamiliar with the torrid botanical prose of Dwight Ripley (d. 1973), herein a sample: "Yet 'pink,' inadequate word, quite fails to describe the brilliance and anguish and venomous perfection of this violet [*Viola cazorlensis*], at sight of which the hardened botanist has been known to fall sobbing to his knees, as deeply moved as was the schoolgirl Bernadette when first confronted with the image of Our Lady. It is the colour of flags, of tragedy at mid-day, and of the bullfighter's satin thighs. It is at once delicate and garish, hopelessly sophisticated, the inspiration of poets and the despair of aunts with taste." — A Journey through Spain, Quarterly Bulletin of the Alpine Garden Society 12(1): 38-52. 1944.

Plant Distribution Reports

New records and significant distribution reports for New Mexico plants should be documented by complete collection information and disposition of a specimen (herbarium). Exotic taxa are indicated by an asterisk (*), endemic taxa by a cross (+).

— Hartman et al. (2006), q.v. for locality citations
Neoparrya lithophila Mathias
Erigeron nivalis Nuttall
Lactuca biennis (Moench) Fernald
Rudbeckia laciniata Linnaeus var. ***laciniata***
Betula glandulosa Michaux
Cardamine cordifolia Gray var. ***incana*** Gray ex M.E. Jones
Draba grayana (Rydberg) C.L. Hitchcock
Lepidium ramosissimum A. Nelson var. ***bourgeauanum*** (Thellung) Rollins
****Rorippa sylvestris*** (Linnaeus) Besser
Carex deweyana Schweinitz var. ***deweyana***
Carex rosea Schkuhr ex Willdenow
Equisetum ×nelsonii (A.A. Eaton) J.H. Schaffner
Juglans nigra Linnaeus
****Syringa vulgaris*** Linnaeus
Achnatherum nelsonii Scribner var. ***nelsonii***
****Cynosurus echinatus*** Linnaeus
Piptatherum pungens (Torrey ex Sprengel) Dorn
Ranunculus alismifolius Geyer ex Bentham var. ***montanus*** S. Watson
****Ranunculus repens*** Linnaeus
Geum triflorum Pursh var. ***triflorum***
Potentilla fissa Nuttall
Prunus persica (Linnaeus) Batsch
Heuchera hallii Gray
Penstemon glaber Pursh var. ***alpinus*** (Torrey) Gray

— Nesom & Turner (2006), q.v. for locality citations
Stevia salicifolia Cavanilles

— Richard Worthington [P.O. Box 1333, El Paso, TX 79913]
****Lapsana communis*** Linnaeus (Asteraceae, nipplewort): Lincoln County: White (Sacramento) Mts, Ruidoso, along Rio Ruidoso at Gavilan Canyon Road, N33°19.58 W105°38.07, 6540 ft, 22 May 2006, R.D. Worthington 34183 (UNM, NMC, SRSC, UTEP).

— Kelly Allred [Box 3-I, New Mexico State University, Las Cruces, NM 88003]
Prunella vulgaris Linnaeus var. ***hispida*** Bentham (Lamiaceae, self-heal): Quay County: City of Logan, along Salt Lakes Road, about 3 miles west of town, near Ute Lake, weedy yard, approx. N35° 21.583 W103°27.849, 3800 ft, 20 Oct 2006, [collector unknown] (NMCR). [This is the hispid-pilose phase of self-heal, also known from Texas, 28 miles eastward.]
****Pennisetum villosum*** R. Brown ex Fresenius (Gramineae, feathertop): Dona Ana County: Corralitos Gun Range, about 1 mile west of exit 127 of I-10, N32°16'51.2" W106°45'16.6", disturbed gravel, 3650 ft, 1 Nov 2006, Dominic Bell s.n. (NMCR). [First report of the escape to the wild of this increasingly common ornamental grass.]
****Leymus racemosus*** (Lamarck) Tzvelev (Gramineae, mammoth wildrye): San Miguel County: Cowles, at junction of Pecos River and Winsor Creek, along state road 63, several plants to 6 ft tall, 8200 ft (2500 m), 29 June 200, K.W. Allred 7554 (NMCR). [Receipt of a copy of Michael Schiebout's thesis at University of Northern Colorado, reporting *Leymus racemosus* from Colfax County, caused me to look again at this specimen from San Miguel County, which I had thought to be a giant *L. cinereus*: *Leymus racemosus* is the correct identification.]

— Barkworth et. al. (2007).
Elymus villosus Muhlenberg ex Willdenow (Gramineae, hairy wildrye): Union County [without precise locality].

— Rob Strahan [New Mexico State University, Dept. Animal & Range Sciences, Las Cruces, NM 88003]
Bouteloua rigidiseta (Steudel) A.S. Hitchcock (Gramineae, Texas grama): Roosevelt County: Milnesand, The Nature Conservancy Praire Chicken Preserve, ca. 0.25 miles south of County Road 39, ca. 0.25 miles west of Hwy 206, moist sandy loam, N33º40.392 W103º23.009, low intermediate area between shin oak moats, with *Chamaesyce* species, *Lycurus setosus*, *Bothriochloa ischaemum*, *Melampodium leucanthum*, *Xanthisma spinulosum*, *Thelesperma megapotamicum*, 4260 ft, 16 September 2006, Rob Strahan 734 (NMCR).

— Ken Heil [San Juan College, 4601 College Blvd., Farmington, NM 87402]
Botrychium campestre Wagner & Farrar (Ophioglossaceae, Iowa moonwort): McKinley County: Navajo Nation, Chuska Mts, southeast side of Whiskey Lake, N35º58' 38" W108º48' 40", ponderosa pine, mutton grass, *Packera neomexicana*, *Lithophragma*, and Gambel's oak, 8885 ft (2708 m), 13 Jun 2005, Ken Heil 25410 (SJC). [Det. by D. Farrar.]
Antennaria dimorpha E. Nelson (Asteraceae, cushion pussytoes): San Juan County: Los Pinos River, south of La Boca Ranch, T32N R7W Sec8, on red clay-cobble hills, 7 May 1984, J. Mark Porter 84-073 (SJNM). [Determined by Guy Nesom; this documents the report for NM in FNA vol. 19.]
Erigeron argentatus A. Gray (Asteraceae, silver fleabane): San Juan County: Navajo Nation, ca 4.5 mi south of Bechlabito towards Cottonwood on Road 63, with cliffrose, Utah juniper, *Opuntia polyacantha*, *Swertia albomarginata*, *Erigeron aphanactis*, steep north-facing hillside, N36º47' 24" W109º01' 49", 5895 ft, 20 May 2005, Arnold Clifford & Ken Heil # 25210 (SJNM). [Det. by Guy Nesom]
Erigeron utahensis Gray (Asteraceae, Utah fleabane): San Juan County: Navajo Nation, 1.5 mi south of Bechlabito Trading Post on Road 63, Morrison Fma, pinyon-juniper with cliffrose and single-leaf ash, N36º47' 49" W109º00' 50", 21 May 2004, Ken Heil, Arnold Clifford, and Dave Schleser # 23785 (SJNM); Rio Arriba County: BLM land, half-way down Gould Pass Road into Cereza Canyon, T27N, R7W, Sec6 NE/SW, 6 Jul 1995, Cyndie Holmes #474 (SJNM). [Det. by Guy Nesom; this documents the report for NM in FNA vol. 19.]

Unpublished inventories and checklists for various regions in New Mexico are now available online at http://spectre.nmsu.edu/dept/academic.html?i=1382, or "Google" Range Science Herbarium and take the link to "Plant Lists and Floras for New Mexico." We invite submissions of accurate and preferably vouchered checklists to this site. Contact Kelly Allred at kallred@nmsu.edu.

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Kelly Allred

"If I could remember the names of all these sub-atomic particles, I could have been a botanist." — Enrico Fermi

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