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In This Issue —

Taxonomy: Impediment or Expedient?

Quentin Wheeler, Peter H. Raven, and Edward O. Wilson

Cornell University, Missouri Botanical Garden, and Harvard University

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Society has a growing need for credible taxonomic information in order to allow us to conserve, manage, understand, and enjoy the natural world. At the same time support for taxonomy and collections is failing to keep pace. Funds nominally allocated to taxonomy go largely to reconstruct molecular phylogenies, while thousands of species are threatened by imminent extinction. Ecologists working in the tropics have felt this lack of taxonomic knowledge as an impediment that inhibits their ability to analyze community-level phenomena. It is time to evaluate the sources of this impediment and address them.

Taxonomy must facilitate, not obstruct biodiversity studies and conservation. Existing taxonomic practices have served us well for centuries, but are clearly inadequate for the challenge at hand. The taxonomic community must rally around a common vision, critically evaluate its needs, set an ambitious research agenda, embrace emerging technologies, and univocally communicate its aspirations. This will require a major change in approach, engaging individual scholars, professional societies, and institutions. Molecular data, abundant and inexpensive, have revolutionized phylogenetics but not diminished the importance of traditional work. Morphology links living and fossil species, is the object of natural selection, inspires the search for causal explanations, and democratizes science. Visual morphological knowledge is ideally suited to Internet communication. The need for this research has been masked, because molecular researchers could draw on centuries of banked morphology knowledge. That knowledge, however, is limited to a fraction of Earth's species and will very soon be exhausted. Fashionable DNA bar-coding methods are a breakthrough for identification, but they will not supplant the need to formulate and rigorously test species hypotheses. Predicted advances in cyber-infrastructure suggest that the time is right to re-envisage taxonomy.

Some naively see the information technology challenge as liberating data from cabinets. The reality is that for all but a few taxa, much data is outdated or unreliable. Many specimens represent undescribed or misidentified species. Rapid access to bad data is unacceptable; the challenge is not merely to speed data access but to expedite taxonomic research. We can envision virtual monographs, revisions, floras, and faunas that are living dynamic works rather than static documents.

It is time to approach taxonomy as large-scale international science. The goal of discovering, describing, and classifying the species of our planet assuredly qualifies as big science. In the face of the biodiversity crisis, the need for urgency could not be greater. Imagine a taxonomic renaissance built on a foundation of cyber-infrastructure. A taxonomist in her laboratory examines a type specimen in another city in real time with remote microscopy. She sets priorities for teams of collectors in several countries who are also using such tools to evaluate the day's catch. Turned around, the same digital microscope electronically brings a taxonomist into a classroom. Aspiring taxonomists in developing countries have full access to taxonomic literature formerly reserved for a few great libraries. Peer-reviewed species descriptions are published electronically and made instantly available. Teams of taxonomists speed species exploration, as in the recent National Science Foundation Planetary Biodiversity Inventories.

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Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.
— Linnaeus

(Taxonomy, continued from page 1)

Taxonomy is planetary-scale science and deserves a planetary-scale tool. This virtual instrument could vastly accelerate taxonomic research and education. Taxonomic understanding of biodiversity, constrained only by evolutionary history, complements long-term and place-based studies of the role of biodiversity in ecosystem functions. Both perspectives are necessary. This tool would be a biodiversity observatory, permitting scientists to "see" across continents and geologic time.

Our generation is the first to fully comprehend the threat of the biodiversity crisis and the last with the opportunity to explore and document the species diversity of our planet. Time is rapidly running out. Society's investment for centuries in great natural history collections can now be repaid through a powerful taxonomic research platform connecting researchers, educators, and decision- makers. The grand biological challenge of our age is to create a legacy of knowledge for a planet that is soon to be biologically decimated. To meet it, 21st-century taxonomists and museums must have the right tools.

William Gambel: New Mexico Plant Specimens

Gene Jercinovic

P.O. Box 246, Torreon, NM 87061

Virtually any botanist in New Mexico would recognize the name *Quercus gambelii*. Fewer would likely recognize the name *Callipepla gambelii*. The first is, of course, the ubiquitous montane species, Gambel oak. The second, Gambel's quail. Both are named for William Gambel, M. D. Gambel is commonly credited with being the first trained botanist to reach Santa Fe (1841). By passion more devoted to ornithology, Gamble also collected the mountain chickadee (*Poecile gambeli*) from the area. Although not a prodigious botanical collector, he gathered several type specimens from New Mexico.

The Man

William Gambel was actually born William Gamble Jr. in June 1823, in Philadelphia. William Gamble Sr. had immigrated to Lancaster County Pennsylvania from Northern Ireland. He served in the War of 1812. He left Lancaster County after the death of his wife and moved to Philadelphia. The elder William remarried in August 1822 and, a few months later, William Jr. was born. Two daughters followed. Tragically, William Sr. died of pneumonia in 1832. Elizabeth Gamble (1802 – 1867) managed to provide for the family by teaching.

Perhaps as a result of his mother's involvement with education, young William displayed a talent for study and progressed rapidly. He also began spelling his last name as Gambel. In 1838 William made the acquaintance of Thomas Nuttall, perhaps the greatest field naturalist in the United States at that time. Gambel and Nuttall became friends. Late in 1838, Gambel left with Nuttall on a trip to the Carolinas and southern Appalachians. Like many naturalists of the time, Nuttall's interests were diverse, including not just botany, but mineralogy and ornithology, sciences that quickly captivated the young Gambel. They returned briefly to Philadelphia in April 1839, before going mineralizing in the pre-Cambrian limestone in Northern New Jersey.

Both men attended the October 15, 1839 meeting of the Philadelphia Academy of Natural Sciences. Gambel presented a specimen of gold from North Carolina. In December 1839, Nuttall was contacted by John Amory Lowell, the son of an old friend of his from his days on the faculty of Harvard University as curator of the Botanic Garden and Professor of Botany. Lowell asked Nuttall to present a set of lectures on botany at the Lowell Institute in Boston beginning in the spring of 1840. Nuttall invited Gambel to accompany him. The pair left Philadelphia in late February 1840, setting up shop in Cambridge.

They stayed in Cambridge for over four months. Nuttall delivered the lectures and renewed acquaintances. Gambel essentially served as his apprentice. Nuttall did considerable work in ornithology during this time and actually named a species of western sparrow for his young protégé (*Zonotrichia gambeli*).

The two found opportunities to go on mineralizing trips. In April they journeyed to Portland, Maine and walked about 50 miles to the vicinity of Paris to collect tourmaline and beryl. In May, their goal was the area of Bath and the Kennebec River in Maine, again for minerals. By the end of their stay, Gambel was well schooled in not only botany, but mineralogy and ornithology as well. They were back in Philadelphia in early August.

During the following winter, Gambel wrote to Edward Tuckerman, his new friend from Cambridge, that he was going to California via the Santa Fe Trail to collect specimens for Nuttall. He left Philadelphia in March 1841 at the age of 18. After making his way to Independence, Missouri, he joined a group of traders bound for Santa Fe. The band departed in early May and arrived in Santa Fe in June. From Independence the route proceeded westward for about four hundred miles to the vicinity of Dodge City, Kansas. From this point, there were two possible routes to Santa Fe. One veered southward, across the Arkansas river, overland to the Dry Cimarron river which drains into the Arkansas River near Tulsa, Oklahoma, then westward along the Dry Cimarron into what is now northeastern New Mexico. The route then crossed the plain between the Dry Cimarron and the Canadian Rivers, crossing the Canadian near what is now Wagon Mound, then heading south and west to Santa Fe along roughly the route of I-25. The second route followed the Arkansas River from Dodge City to the area of La Junta, Colorado, then turning south through Raton Pass and on to Wagon Mound and Santa Fe. There is uncertainty about which route

(Continued on page 3, Gambel)

(Gambel, continued from page 2)
Gambel's party took, but evidence seems to favor the Raton Pass route.

Gambel spent July and August of 1841 exploring, birding, and making a few collections in the Santa Fe area and along the "Rio del Norte", as the Rio Grande was commonly called in the 1840s. In early September, he joined an expedition organized by William Workman and John Rowland and headed for California. The group of 25 left Abiquiu and followed a trail blazed in the winter of 1830-31 by a group of trappers and their leader, William Wolfskill. From Taos they headed northwest crossing the upper Colorado (then called the Grand) River below its junction with the Dolores River, then following the Colorado southwest to the junction with the Green River. Turning northwest after crossing both rivers, they proceeded to the Sevier Valley in southern San Pete County, Utah, entering the valley about 100 miles south of present day Salt Lake City. Moving southwest down the Sevier Valley, they made their way to the Virgin River in the extreme southwest corner of Utah. After crossing the Mojave Desert, they traversed Cajon Pass, arriving in Los Angeles in late November 1841.

Gambel traveled about and collected bird and plant specimens in southern California in 1841-42. He was the first botanist to reach California from the east and the first to explore Santa Catalina Island. During 1842, he became pressed for funds and became a clerk on the United States Navy ship *Cyane* under Commander T.A. Catesby Jones. During the next three years, Gamble continued his naval service on several ships, visiting and making some minor collections on the western coasts of both North and South America and also in the Sandwich (Hawaiian) Islands. He returned to the Philadelphia area in July 1845 via Cape Horn.

Gambel entered medical school at the University of Pennsylvania in 1845 and received his M.D. in 1848. He became Recording Secretary at the Academy of Natural Sciences and married Catherine Towson, a childhood friend. Establishing a medical practice in popular Philadelphia, however, was a daunting task. This, combined with his wanderlust and the discovery of gold at Sutter's mill, led to his decision to try his hand at establishing himself in a medical profession in California. He resigned his position at the Academy, shipped his medical library and equipment to San Francisco, and on April 5, 1849 left for Independence with Isaac Jones Wistar (1827-1905), future Civil War general and great-nephew of Caspar Wistar, and a group of young companions. They planned to take the Oregon Trail. Leaving Independence on April 25, they followed the Kansas River to the junction of the Little Blue River. The group was afflicted with cholera, small pox, and pneumonia. Gambel became a practicing physician sooner than he had imagined. They crossed from the headwaters of the Little Blue to the Platte River on May 30. According to Wistar, "Gambel being desirous of traveling more leisurely and comfortably" left the group on June 2, joining a party led by a Captain Boone.

Boone's plan was to take a somewhat more southerly course in order to cross the Sierra near the upper end of the Sacramento Valley. The company continued along the Oregon Trail until it entered the Snake River Valley, then turned southwest across Nevada. Sand, drought, and lack of grass turned the expedition into a disaster. Many animals died. Wagons were abandoned. So much time was lost that the ragged band got caught in snows in the Sierra. Few survived.

Gambel somehow made it across the Sierra. He emerged in poor condition near present-day Quincy in Plumas County, California. Placer miners were actively seeking gold in the Yuba and Feather Rivers in the vicinity. Mining camps were set up on large sand bars in the rivers. Typhoid fever was rampant. Gambel began treating the desperately ill miners, but contracted the disease himself, dying December 13, 1849 at Rose's Bar. It is probable that some historians have a completely inaccurate impression of Gambel's final hours.

The Plants

During his first excursion to the West, Gambel maintained contact with Nuttall by means of occasional letters. In 1842, Nuttall accepted an inheritance from his family in England. Terms of the inheritance required that he reside at the family estate at least nine months a year, requiring his repatriation.

This further slowed the communication. In England late in 1842 Nuttall received a letter Gambel had written in early 1842 from Pueblo Los Angeles, which included Gambel's manuscript describing eleven new species of birds from the southwest. Nuttall forwarded the manuscript to the Philadelphia Academy. The paper was read at the April 1843 meeting and published in the *Proceedings*. In August, Gambel was elected in absentia to the Academy.

After Gambel's return to New England in 1845, he sent a letter to Nuttall indicating that he had returned, but that his plant collection, which he had placed on a whaling ship bound for Massachusetts, had not. At the August meeting of the Academy, Gambel presented a paper describing 5 species of western birds. By the middle of 1846, the collection of roughly 350 species had arrived and Gambel forwarded it to Nuttall in England. Although Nuttall reportedly brought a set of specimens to John Amory Lowell in Cambridge, no record of them has been located there. The rest of Gambel's specimens are at the British Museum. Nuttall examined the collection and prepared a report describing about 115 species, the majority collected by Gambel, but roughly 40 percent plants collected by Nuttall himself in the West. Nuttall decided to take a brief trip to the United States late in 1847. On February

(*Continued on page 4, Gambel*)

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

(Gambel, continued from page 3)

1, 1848, he read his paper at a meeting of the Academy. The paper was subsequently published in the *Journal.* Nuttall honored Gambel by designating a new genus, *Gambelia*, for one of Gambel's plants from Santa Catalina Island in California. Asa Gray later reduced it to a species of *Antirrhinum* [*Antirrhinum speciosum* (Nutt.) Gray]. Nuttall's paper shows 11 new species gathered by Gambel from the Santa Fe area and along the Rio del Norte (Rio Grande). Paul C. Standley, in *Type Localities of Plants First Described from New Mexico*, corrected the listing of *Bulbostylis annua* as being from New Mexico, noting in regard to Nuttall's specified locality: "Such is the locality given by Nuttall, but there is reason to believe that it is incorrect. The plant seems not to have been collected in New Mexico since, and the genus is one which reaches its fullest development farther west. This species occurs in Utah and Arizona and westward." Nuttall's list is summarized in the table below, along with a summary of more recent taxonomic treatments.

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New Mexico Type Specimens Collected by William Gambel

Nuttall (1848)	**Wooton & Standley** (1915)	**Martin & Hutchins** (1980, 81)	**Allred** (2003)
Phlox nana Nutt.	*Phlox nana* Nutt.	*Phlox nana* Nutt.	*Phlox nana* Nutt.
Gilia multiflora Nutt.	*Gilia multiflora* Nutt.	*Ipomopsis multiflora* (Nutt.) V. Grant	*Ipomopsis multiflora* (Nutt.) V. Grant
Dieteria gracilis Nutt.	*Sideranthus gracilis* (Nutt.) Rydb.	*Haplopappus gracilis* (Nutt.) Gray	*Machaeranthera gracilis* (Nutt.) Shinners
Bulbostylis annua Nutt.	*Psathyrotes annua* (Nutt.) A. Gray		Not present in NM; reported by W&S based on erroneous info in type locality
Quercus gambelii Nutt.	*Quercus gambelii* Nutt.	*Quercus gambelii* Nutt.	*Quercus gambelii* Nutt.
Orobanche multiflora Nutt.	*Myzorhiza multiflora* (Nutt.) Rydb.	*Orobanche multiflora* Nutt. var. *multiflora*	*Orobanche ludoviciana* Nutt. subsp. *multiflora* (Nutt.) Collins ex H.L.White & W.C. Holmes
Bartonia multiflora Nutt.	*Nuttallia multiflora* (Nutt.) Greene	*Mentzelia pumila* var. *multiflora* (Nutt.) Urb & Gilg	*Mentzelia multiflora* (Nutt.) Gray
Monarda pectinata Nutt.	*Monarda pectinata* Nutt.	*Monarda pectinata* Nutt.	*Monarda pectinata* Nutt.
Hedeoma ciliata Nutt.	*Hedeoma ciliata* Nutt.	*Hedeoma drummondii* Benth.	*Hedeoma drummondii* Bentham
Calycodon montanum Nutt.	*Muhlenbergia subalpina* Vasey	*Muhlenbergia montana* (Nutt.) Hitchcock	*Muhlenbergia montana* (Nutt.) Hitchcock
Pleopogon setosum Nutt.	*Lycurus phleoides* H.B.K.	*Lycurus phleoides* H.B.K.	*Lycurus setosus* (Nutt.) C. Reeder

Datura (Solanaceae) in New Mexico

Kelly W. Allred

Department of Animal & Range Sciences, New Mexico State University, Las Cruces, NM 88003

In the first floristic treatment of New Mexico, Wooton and Standley (1915) listed four species of *Datura* from the fledgling state: large flowered *D. meteloides*, stout-spined *D. quercifolia*, white-flowered *D. stramonium*, and violet-flowered *D. tatula*. Tidestrom and Kittell (1941), in their plant manual of the once-united territory encompassing Arizona and New Mexico, reduced this number to three species, submerging *D. tatula* within *D. stramonium* as only a color variant. Martin and Hutchins (1981) reinstated the total species to four, but with the addition of the glandular-pubescent *D. inoxia*, while recognizing violet-flowered *D. stramonium* at the varietal level (var. *tatula*). Finally (and in reverse alphabetical order), Bye (2001) foot-noted the occurrence of the smooth-fruited *D. ceratocaula* in the state.

Nomenclatural matters were elucidated by Barclay (1959), though confusion on names and identities continues to this day.

The species can be distinguished by fruit ornamentation, size and frequency of spines, corolla size, and vestiture of foliage and stems.

Only one of our species is native to the state, *D. wrightii*.

Apparently all *Datura* produce high concentrations of potent tropane alkaloids, such as L-hyoscyamine, scopolamine, and atropine, rendering the plants highly toxic to all animals, including humans. Greatest concentrations are found in the seeds. Poisoning in humans most often results in delirium and fever, but fatalities may occur when the plants, particularly seeds, are ingested in an attempt to experience hallucinatory effects.

The name *Datura* is perhaps derived from the Arabic "*tatorah*" or the Hindustani "*Dhatura*."

1 Plants semi-aquatic; calyx split on one side to form a spathe-like structure; fruit smooth, lacking spines.....***D. ceratocaula***
1 Plants terrestrial; calyx not split; fruit spiny
  2 Corolla 12-26 cm long; capsule pendant, globose
    3 Stems and petioles (especially new growth) densely villous or glandular-villous with spreading hairs; corolla 12-16 cm long.....***D. inoxia***
    3 Stems and petioles densely covered with short appressed or curved hairs, glandular hairs lacking; corolla 14-26 cm long.....***D. wrightii***
  2 Corolla 5-10 cm long; capsule erect, ovoid or oblong
    4 Leaves mostly deeply pinnately lobed; spines of capsule relatively few and stout, at least some of them (often the terminal ones) 20-35 mm long; corolla 4-7 cm long .....***D. quercifolia***
    4 Leaves shallowly lobed; spines of capsule relatively numerous and slender, all spines 5-15 mm long; corolla 6-8 cm long .....***D. stramonium***

* = exotic in New Mexico

****Datura ceratocaula*** Ortega MEXICAN THORN-APPLE (horned stem). Found only in the bootheel region (Hidalgo County), in shallow temporary ponds at the south end of Playas Lake; native to the highlands of central Mexico. This is a recent discovery in New Mexico, found in 1989 and grown from seed. It is our only *Datura* with smooth fruits. A specimen is at NMC.

****Datura inoxia*** P. Miller DOWNY THORN-APPLE (not noxious) [*Datura meteloides* DC. ex Dunal]. Loose soils of the southeastern plains; native to central and southern Mexico. This has been confused with the native *Datura wrightii*, from which it differs quite conspicuously in the spreading glandular hairs on the stems and foliage; hairs of *D. wrightii* are shorter and incurved against the epidermis, and eglandular. This renders the plant with a downy appearance on new growth. The specific epithet is sometimes transcribed as 'innoxia,' but the original spelling was with a single 'n.' A glabrous garden ornamental (*D. fastuosa* Linnaeus) similar in flower size and pods to *D. inoxia*, may be encountered in cultivation only; it lacks the conspicuous spreading and glandular hairs of this species.

****Datura quercifolia*** Humboldt, Bonpland, & Kunth OAK-LEAF THORN-APPLE (oak-leaved) [*Datura ferox* of some New Mexico reports, not Linnaeus]. Roadsides and disturbed habitats in central to southern regions; southwestern border states, to central Mexico. Spines of the capsule are noticeably stouter, fewer in number, and longer than those of the similar-flowered *Datura stramonium*.

****Datura stramonium*** Linnaeus JIMSONWEED (*Stramonium*, an old generic name) [*Datura tatula* Linnaeus]. Moist, disturbed ground; native to tropical America and naturalized throughout most of the United States, though apparently not as common in New Mexico as some of the other species. If desired, plants with violet-colored corollas may be referred to var. *tatula* (Linnaeus) Torrey, PURPLE JIMSONWEED, though the taxonomic distinction is tenuous. Current research in nuclear waste storage is finding that jimsonweed will remove plutonium, cadmium, boron, and copper from polluted water. The name 'jimsonweed' derives from its misuse as a scruvy-preventative at Jamestown by British soldiers, quartered there to put down the tobacco tax rebellon of 1676 led by Nathaniel Bacon.

Datura wrightii Hort ex Regel SACRED THORN-APPLE (for Charles Wright) [*Datura inoxia* P. Miller subsp. *quinquecuspida* (Torrey) Barclay, *Datura meteloides* of New Mexico authors, not Dunal]. Roadsides, disturbed ground in a variety of habitats, widespread; widely distributed in the western United States and northern Mexico. This species passed for a long time under the name *Datura meteloides* DC. ex Dunal, but that name is a taxonomic synonym of *D. inoxia* P. Miller (Barclay 1959). Herbage is conspicuously malodorous.

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Miscellaneous Book Notes

The name Cockerell is appended as author to over 140 names (including synonyms) of New Mexico plants, and appears in eponymy (*cockerellii*) on four species. For a further look into the life of this extraordinary naturalist, see Bill Weber's follow-up to his earlier biography of T.D.A. Cockerell, "The American Cockerell":

The Valley of the Second Sons: Letters of Theodore Dru Alison Cockerell, a young English naturalist, writing to his sweetheart and her brother about his life in West Cliff, Wet Mountain Valley, Colorado 1887-1890, William A. Weber, F. L. S., Editor. ISBN 0-9710609-9-1. 592 pages. $39.95. A vivid account by a master naturalist.

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Rabbitbrush Notes

Roger Peterson

1750 Camino Corrales, Santa Fe, NM 87505

Across northern New Mexico uplands including my 3 woodland acres there's a low (1-2 foot) *Chrysothamnus* (*Ericameria*) of Section *Nauseosi*, that is, its stems are covered with matted whitish hairs. Looking back I see that over 35 years I've sometimes called it *C. parryi* and sometimes *C. nauseosus.* Discussion with David Ferguson and Bob Sivinski revealed that opinions are split between botanists as well as within this botanist.

So in 2003 I looked carefully at 122 specimens from 46 sites, mostly from 3 bushes per site. They were from South San Ysidro (San Miguel County) to the De-na-zin Wilderness (San Juan County), but mostly from Santa Fe and Rio Arriba counties, with a few from Sandoval and Los Alamos counties.

The root of the problem is a seeming conflict. The subspecies of *C. nauseosus* of northern New Mexico are supposed to have corymbose inflorescences and the subspecies of *C. parryi* are supposed to have flower-heads scattered. On that ground, the taxon in question is *C. parryi*. But no *C. parryi* achenes should be glabrous, and these are.

From original descriptions of the many subspecies and varieties, 117 of my 122 specimens are clearly what Asa Gray in 1856 named *Linosyris bigelovii*, now called *Chrysothamnus nauseosus* (Pallas ex Pursh) Britton subsp. *bigelovii* (Gray) Hall & Clements. My collection sites included the type area of *bigelovii* if Gray's "Cieneguilla" "north of Albuquerque" is today's Cieneguilla or Cienega (Santa Fe County).

Of the other 5 specimens of low rabbitbrush, 4 keyed to *C. parryi* (Gray) Greene subsp. *attenuatus* (M.E. Jones) Hall & Clements (Los Alamos and Rio Arriba counties) and one was *C. parryi* subsp. *affinis* (A. Nels.) L.C. Anderson (Rio Arriba County). In our herbarium we also have *C. parryi* subsp. parryi from northern Rio Arriba County (farther north than the current survey). These all have hairy fruits and several other differences from *bigelovii*, but they resemble *bigelovii* in their non-corymbose inflorescences. They were in deeper-soil sites than *bigelovii*.

Whether *bigelovii* is better assigned to *C. nauseosus* or to *C. parryi* (if either), I don't know. But at least I'm pleased to have a definite name, *bigelovii*, for this widespread, often dominant plant. And there were enough interesting variants that I'll be looking at more rabbitbrushes and their tephritid galls this year.

My thanks to Chick Keller, George Cox, and Mimi Hubby, who helped with collections.

Botanical Literature of Interest

Taxonomy and Floristics

Jewett, D.K., M.A. Gaffri, & N.R. Spencer. 2003. **A collection of *Cardaria draba* (Brassicaceae) and related taxa from the western United States and its implications for their management.** Madroño 50(3):203-208.

McCauley, R.A. 2004. **New taxa and a new combination in the North American species of Froelichia (Amaranthaceae).** Syst. Bot. 29(1):64-76. [includes a key to North American species]

Prather, L.A., O. Alvarez-F., M.H. Mayfield, & C.J. Ferguson. 2004. **The decline of plant collecting in the United States: A threat to the infrastructure of biodiversity studies.** Syst. Bot. 29(1):15-28.

Roberts, R.P. & L.E. Urbatsch. 2004. **Molecular phylogeny of *Chrysothamnus* and related genera (Asteraceae, Astereae) based on nuclear ribosomal 3' ETS and ITS sequence data.** Syst. Bot. 29 (1):199-215. [rescues some of our *Chrysothamnus* from *Ericameria*]

Schultheis, L.M. & M.J. Donoghue. 2004. **Molecular phylogeny and biogeography of *Ribes* (Grossulariaceae), with an emphasis on gooseberries (subg. *Grossularia*).** Syst. Bot. 29(1):77-96. [generic segregation of *Grossularia* is not supported]

Simpson, B.B., A. Weeks, D.M. Helfgott, & L.L. Larkin. 2004. **Species relationships in *Krameria* (Krameriacee) based on ITS sequences and morphology: Implications for character utility and biogeography.** Syst. Bot. 29(1):97-108.

Snow, N. & J.W. Brasher. 2004. **Provisional checklist of vascular plants for the Southern Rocky Mountain Interactive Flora (SRMIF).** University of North Colorado, Greeley. (www.unco.edu/biology/herbarium/SRMIF).

Spooner, David M., Ronald G. van den Berg, Aaron Rodriguez, John Bamberg, Robert J. Hijmans and Sabina I. Lara Cabrera. 2004. **Wild potatoes (*Solanum* section *Petota*; Solanaceae) of North and Central America.** Systematic Botany Monographs 68:1-209.

Welsh, S.L., N.D. Atwood, S. Goodrich, & L.C. Higgins. 2003. **Utah Flora, 3rd ed.** Brigham Young University, Provo, Utah. 912 pp.

University of Colorado Herbarium Database

The University of Colorado at Boulder database of vascular plant specimen labels fromColorado housed at Herbarium COLO is now searchable online at <http://cumuseum.colorado.edu/Research/Botany/Databases/search.php>/. Approximately 70,000 records of the ca. 90,000 Colorado specimens have been entered to date. For additional information, contact: Tom A. Ranker, Associate Professor & Curator, University of Colorado Museum, 265 UCB - Bruce Curtis Building, Boulder, CO 80309-0265; e-mail <Ranker@colorado.edu>; voice, 303 492-5074; Fax, 303 492-4195.

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 (+).

— Ken Heil [San Juan College, 4601 College Blvd., Farmington, NM 87402]

Astragalus preussi A. Gray var. ***latus*** M.E. Jones (Fabaceae): San Juan County: B-Square Ranch, slopes east of Stewart Canyon near the southern boundary of the ranch, mostly clay soils, 5840 ft, T28N R12W S18 SE/SW, 9 Jun 1999, Ken Heil 13139 (SJNM). McKinley County: Navajo Nation, Red Willow Wash ca 0.5 mi W of Tohatchi, slopes above the wash, N35° 51'59" W108° 46' 09", 1982 m, 17 May 2000, Ken Heil 14,597 with S.L. O'Kane Jr. & Arnold Clifford (SJNM). Rio Arriba County: Bureau of Land Management in the Largo Canyon region, Crow Canyon, ca. 0.5 miles from jct with Largo Canyon, UTM's S0265728 E4047886, sandy soils in wash bottom, 6335 ft, 5 Jun 2000, Ken Heil & S.L. O'Kane, Jr. 14702 (SJNM). All specimens verified by S.L. Welsh (BRY).

Astragalus flavus Nutttall ex Torrey & Gray var. ***higginsii*** S. Welsh (Fabaceae): San Juan County: 3 miles south of Bloomfield, north side of Kutz Canyon, T28N, R11W, S10, 3 May 1985, J.M. Porter 1011 (SJNM). Rio Arriba County: Carson National Forest, Jicarilla District, slopes along Salada Canyon on Forest Service Road 218A, pinyon-juniper woodland, T32N R4W S11 SE 1/4, 1 Jun 1995, Ken Heil 8915 (SJNM). [Det. by S. Welsh]

Acacia angustissima (P. Mill.) Kuntze var. ***hirta*** (Nutt.) B.L. Robins. (Fabaceae): San Juan County: About 2 miles west of The Hogback on US 64, along the margin of a field with alfalfa, gumweed, Russian olive, and bindweed, N36° 45' 09" W108° 33'25", 5119 ft, 2 Jul 2002, Ken Heil & Arnold Clifford 19310 (SJNM). [Det. by S. Welsh]

— Kelly Allred [Box 3-I, New Mexico State University, Las Cruces, NM 88003]

Gamochaeta rosacea (I.M. Johnston) A. Anderberg (Asteraceae): Hidalgo County: Peloncillo Mts, Granite Gap, occasional on W-facing granitic slope with Ericameria laricifolia, Fouquieria splendens, Agave palmeri, Opuntia phaeacantha var. discata, 21 Apr 1993, L. McIntosh 2665 (NMC). [Det. by G. Nesom]

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Kelly Allred
The New Mexico Botanist
MSC Box 3-I
New Mexico State University
Las Cruces, NM 88003
or
Email: kallred@nmsu.edu

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Kelly Allred

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COOPERATIVE EXTENSION SERVICE
U.S. Department of Agriculture
New Mexico State University
Las Cruces, NM 88003