



A Newsletter for the flora of New Mexico, from the Range Science Herbarium and Cooperative Extension Service, College of Agriculture and Home Economics, New Mexico State University.

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A Taxonomic Review of the Tendril-bearing Legumes (Leguminosae) in New Mexico: II. *Vicia*

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Introduction

An earlier article (Johnson & Allred 2003) reviewed the genus *Lathyrus* in New Mexico. This paper takes up the remaining tendril-bearing plants of the Leguminosae of New Mexico, *Vicia*. The genera are similar and may be easily confused if one fails to examine the style tip: *Vicia* has a prominent tuft of hairs in a ring at the tip, whereas *Lathyrus* has hairs extending down one side only, being glabrous on the other. Species of *Vicia* usually have smaller leaflets and flowers than those of *Lathyrus*, but there is considerable overlap in these features.

We have not undertaken to monograph the genus, only to provide keys, descriptions, and geographic information for New Mexico plants. Synonymy is generally taken from other pertinent monographs or revisions. Types were not consulted, except as they may have been available on the internet (such as the type collection at NY).

No new combinations or taxonomic novelties are proposed herein.

- 1 Style hairy on all sides in a tuft or ring at the apex; wings of corolla adherent to the keel*Vicia*
- 1 Style hairy above the middle only on one side, glabrous on the other; wings of corolla essentially free from the keel.....*Lathyrus*

Vicia Linnaeus vetch

Annual or perennial herbs, often trailing or somewhat vine-like, the pubescence basifixed. Leaves pinnately compound, the terminal leaflet modified into a tendril, this simple or branched, prehensile (usually) or not; stipules clasping or sagittate, usually toothed. Inflorescence an axillary raceme, with 1- numerous flowers. Flowers perfect. Calyx of united sepals forming a campanulate tube, pubescent or glabrous, the lobes (teeth) nearly linear and equal or unequal. Corolla papilionaceous, with banner (standard), wings, and keel, the 2 wing petals somewhat adherent to the keel. Stamens 9+1. Style compressed or terete, pubescent in a ring just below the capitate sigma. Fruit a legume, sessile or essentially so, the valves dehiscent and coiling.

The classic work for North American *Vicia* is F.J. Hermann's "Vetches of the United States — native, naturalized, and cultivated" (USDA Agr. Hndbk. 168). Additional references useful in this review, mostly of a floristic nature, were Barneby (1989), Great Plains Flora Association (1986), Isely (1998), Lassetter (1984), Martin & Hutchins (1981), Tidestrom & Kittell (1941), Welsh et al. (1993), and Wootton & Standley (1915).

Apart from the technical features of the style and stigma, many *Vicia* can be told from most *Lathyrus* by the larger leaflets of the latter. Leaflets in *Vicia* are mostly 1-2 cm long (sometimes longer in *V. ludoviciana*, *V. americana*, and *V. pulchella*), whereas leaflets in *Lathyrus* are mostly 3-10 cm long (sometimes shorter in *L. arizonicus*, *L. laetivirens*, *L. leucanthus*, and *L. polymorphus*). In addition, no *Vicia* possess the winged stems and petioles of some *Lathyrus*.

We have included in the key and text (not bolded) *Vicia sativa*, a common garden escape, even though we as yet have no record of its occurrence in New Mexico.

- 1 Racemes sessile or subsessile, bearing only 1-2 (sometimes 3) flowers; flowers 1-3 cm long.....*V. sativa*
- 1 Racemes pedunculate, 1- to several-flowered; flower length various, 0.5-2.5 cm long

(Continued on page 2, *Vicia*)

Botanice est Scientia Naturalis quae Vegetabilium cognitioem tradit.
— Linnaeus



(*Vicia*, continued from page 1)

- 2 Flowers large, 12-25 mm long
 - 3 Herbage rather densely to sparsely villous; racemes densely 10- to 20-flowered or more; calyx gibbous so the pedicel appears to be attached laterally *V. villosa*
 - 3 Herbage glabrous to sparsely pilose; racemes loosely 1- to 9-flowered; calyx not or only slightly gibbous so the pedicel appears to be attached basally *V. americana*
- 2 Flowers small, 5-10 mm long
 - 4 Flowers whitish or cream-colored; peduncles bearing 10-20 flowers; plants perennial *V. pulchella*
 - 4 Flowers bluish; peduncles bearing 1-15 flowers; plants annual or perennial
 - 5 Leaflets 6-16; pods glabrous; calyx with appressed, whitish hairs; plants annual *V. ludoviciana*
 - 5 Leaflets 4-6; pods silky hairy; calyx with spreading, usually yellowish, hairs; plants perennial *V. leucophaea*

Vicia americana Muhlenberg ex Willdenow AMERICAN VETCH
 [*Vicia americana* Muhlenberg ex Willdenow var. *minor* Hooker, *Vicia americana* Muhlenberg ex Willdenow var. *linearis* (Nuttall) S. Watson, *Vicia caespitosa* A. Nelson, *Vicia linearis* Nuttall, *Vicia linearis* Nuttall var. *caespitosa* (A. Nelson) A. Nelson, *Vicia sparsifolia* Nuttall].

Plants perennial, rhizomatous. Stems erect to sprawling, 10-100 cm long. Leaflets 8-16 in number, 1-3.5 cm long, 1-15 mm wide, broadly elliptic to linear, the herbage generally glabrous or puberulent. Tendrils prehensile, simple or branched (ours). Racemes 3- to 9-flowered, shorter than the leaves. Flowers bluish, purplish, or whitish, 1.5-2.5 cm long. Pods glabrous or pubescent, 2-3.5 cm long, 4-7 mm wide, on a stipe 2-5 mm long.

Distribution in New Mexico: Essentially throughout the state except for the eastern plains; probably our most common vetch.

Of New Mexico vetches, only *Vicia americana* and *V. villosa* have large flowers (longer than 12 mm). The latter is rather easily distinguished by the features in the key.

Hermann (1960) recognized *Vicia americana* as comprising a single species with five varieties. In a more detailed study, Gunn (1968) reduced the number of varieties to two, and this has been followed in subsequent treatments (i.e., Barneby 1989; Isely 1998). The two varieties (var. *americana* and var. *minor*) have been distinguished by a variety of features, most notably tendril development, leaflet shape and texture, and tendril development (Table 1).

Examination of New Mexico plants showed a range of variation in these features spanning from one variety to the other. Tendril development aligned with var. *americana*, flower number with var. *minor*, and leaflet shape and texture was intermediate. In particular, leaf shape showed a continuum of variation. It was impossible to distinguish any meaningful discontinuities in this feature (Figure 1, Chart 1), even though the extremes are markedly different.

Any attempt to define boundaries between these two varieties in New Mexico populations would seem to be entirely arbitrary. We



Figure 1. Leaflet silhouettes from 62 plants of *Vicia americana* from New Mexico, arranged by length.

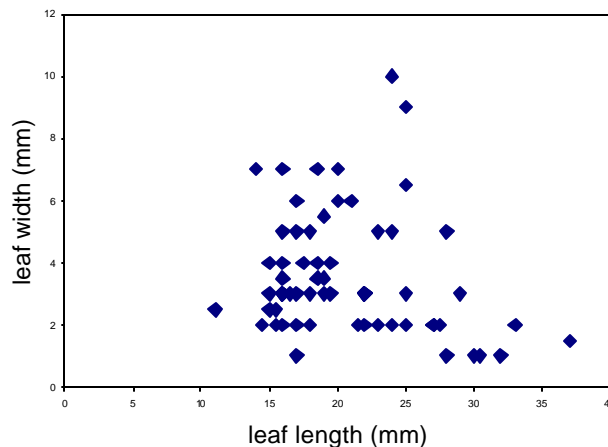


Chart 1. Display of leaf length & leaf width for 62 plants of *Vicia americana* from New Mexico.

have therefore chosen not to recognize infraspecific variation in New Mexico plants of *Vicia americana*.

Vicia leucophaea Greene MOGOLLON VETCH.

Plants perennial. Stems erect to sprawling, 30-80 cm long. Leaflets 4-6(8) in number, 1-2 cm long, 1-3 mm wide (those of the basal leaves sometimes broader), linear to narrowly oblong, the herbage plainly to sparsely pilose. Tendrils prehensile, mostly simple. Racemes 1- to 2-flowered, shorter than the leaves. Flowers whitish to cream-colored, spotted or striate, 7-9 mm long. Pods puberulent, 2-4 cm long, 4-6 mm wide, nearly sessile.

Distribution in New Mexico: Rather uncommon in the mountains of the southwestern quarter.

Mogollon vetch extends southward through southeastern Arizona to Durango, Mexico.

Vicia ludoviciana Nuttall ex Torrey & Gray subsp. *ludoviciana*

LOUISIANA VETCH [*Vicia exigua* Nuttall].

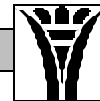
Plants annual. Stems erect to sprawling, 10-60 cm long. Leaflets 6-16 in number, 1-2(3) cm long, 1-3 mm wide, elliptic to linear, the herbage glabrous or pubescent. Tendrils prehensile, simple or branched. Racemes 1- to 15-flowered, equaling or surpassing the leaves. Flowers bluish to purplish, 4.5-8 mm long. Pods glabrous, 1.5-3.5 cm long, 4-7 mm wide, on a short stipe about 1 mm long.

Distribution in New Mexico: Widely scattered locales throughout the state.

The *Vicia ludoviciana* complex comprises numerous races, both geographical and ecological, and is notoriously difficult to evaluate. Without attempting yet another revision, we rely here on Lassetter's (1984) monograph of the complex. He reports a single subspecies for New Mexico, subsp. *ludoviciana*, composed of several races or phases, two of which occur in the state (referred to as races 4 & 5 by Lassetter). His race 5 may have numerous flowers on the raceme (up to 15 or so), and could be confused with *V. pulchella*, which also has numerous flowers. The latter is distinguished by whitish or cream (Continued on page 3, *Vicia*)

Table 1. Comparison of features distinguishing the varieties of *Lathyrus americana*

var. <i>americana</i>	New Mexico plants	var. <i>minor</i>
tendrils prehensile, branched	prehensile, all branched	tendrils not prehensile, not branched
leaflets broadly elliptic to oblong, generally not coriaceous	broadly elliptic to linear, hardly to somewhat coriaceous	leaflets oblong to linear, commonly coriaceous
flowers 5-9 per raceme	3-4	flowers 3-4 per raceme



(*Vicia*, continued from page 2)

flowers, whereas *V. ludoviciana* always has bluish flowers (though they may have whitish patches). We find little utility in distinguishing the races, and are content with being able to identify the species.

Vicia ludoviciana subsp. *leavenworthii* (Torrey & Gray) Lassetter & Gunn has been reported from New Mexico in earlier floristic literature, but Lassetter (1984) confines this subspecies to central Texas and Oklahoma.

Vicia pulchella Humboldt, Bonpland, & Kunth SWEET VETCH [*Vicia melilotooides* Wooton & Standley].

Plants perennial. Stems sprawling to scandent, sometimes entangled, 50-150 cm long. Leaflets 8-16 in number, 1-2 cm long (sometimes shorter or longer), 1-3 mm wide, elliptic to linear, the herbage generally glabrous or puberulent. Tendrils prehensile and branched. Racemes (5)10- to many-flowered, exceeding the leaves. Flowers whitish with a spotted keel, 5-10 mm long. Pods glabrous, 2-3.5 cm long, 6-8 mm wide, nearly sessile.

Distribution in New Mexico: Rather common in the central and western mountains.

Vicia sativa Linnaeus var. *angustifolia* Linnaeus GARDEN VETCH [*Vicia angustifolia* Linnaeus, *Vicia sativa* Linnaeus subsp. *nigra* (Linnaeus) Ehrhart].

Plants annual. Stems erect to sprawling, 10-50 cm long. Leaflets 8-16 in number, 1.5-3 cm long, 1-3 mm wide, oblong to linear, the herbage glabrous to puberulent. Tendrils prehensile, simple or branched. Racemes sessile, 1- to 3-flowered, shorter than the leaves. Flowers bluish, purplish, or whitish, 1-3 cm long. Pods glabrate, 2.5-6 cm long, 4-8 mm wide, sessile.

Distribution in New Mexico: Not definitely known from New Mexico in the wild.

Wooton and Standley (1915) reported this exotic European species from "a wet meadow near Chama" based on Standley 6696, but this specimen cannot be found in any of our herbaria, and the record stands undocumented by any later collections. Isely (1998) does not record it from the state and says it is "almost absent from Mountain and Intermountain regions" (p. 954). It may occasionally escape from gardens, but apparently does not persist.

Isely (1998) and others choose to treat this at the subspecific level (as subsp. *nigra*).

Vicia villosa Roth WOOLY VETCH [*Vicia dasycarpa* Tenore, *Vicia villosa* Roth var. *glabrescens* W.D.J. Koch, *Vicia villosa* Roth subsp. *varia* (Host) F.M.L. Corbière].

Plants annual. Stems erect to sprawling, 50-100 cm long. Leaflets 12-18 in number, 1-3 cm long, 2-4 mm wide, oblong to elliptic, the herbage glabrous to villous. Tendrils prehensile and branched. Racemes 10- to numerous-flowered, equaling to exceeding the leaves. Flowers bluish to whitish, 1-2 cm long. Pods glabrous, 1.5-4 cm long, 6-10 mm wide, on a stipe 2-3 mm long.

Distribution in New Mexico: Scattered locales in the state, all from disturbed roadsides, fields, etc.

Vicia villosa is widely cultivated in the world for forage, and as such it had been known for many years in New Mexico from a few old collections from agricultural plantings. Recent work (since the 1970s) has disclosed wooly vetch in the wild, apparently escaping and persisting along roadways and similar sites.

Two weak subspecies (or varieties) have been distinguished, largely based on vestiture. All the specimens we have seen belong to subsp. *villosa*, with the herbage rather conspicuously spreading-villous. Subspecies *varia*, where the herbage is glabrous or nearly so, was reported from Curry County (Great Plains Flora Association 1977), but we have not seen a specimen. Numerous flowers and a gibbous calyx separate glabrous forms from *Vicia americana*.

Acknowledgments

We acknowledge with pleasure the assistance and cooperation of the curators and staff of NMC, NMCR, SJNM, and UNM, who generously allowed access to their collections. Ron Mortensen plotted the maps. Lynda Allred helped to record locality data during our visits to herbaria.

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Appendix: Specimens Examined

Vicia americana

Bernalillo Co.: Sandia Crest, 10600 ft, 10-Jul-76, Hutchins, R. 6263 (UNM); Sandia Mts, ft, 20-Jun-42, Clark 10230 (UNM). **Catron Co.:** Mogollon Mts, Gila National Forest, ponderosa forest 3.7 miles southeast of jct with Bursum Rd and 5.3 miles southeast of Collins Park, northeast of Elk Mt, 7645 ft, 11-Aug-99, Allred, Kelly W. 7564 (NMCR); Datil mts, 9000 ft, 11-Jun-76, Fletcher, R. 335 (UNM); hwy 180, w of Reserve, 20-Sep-80, Hutchins, R. 9242 (UNM); Tularoso Mts, Eagle Peak, 9700 ft, 19-Jun-78, Moir, W.H. 112 (NMC); Mogollon Mts, w fork Gila River, 8000 ft, 13-Aug-03, Metcalfe, O. B. 464 (NMC); Beaverhead, ft, 21-Jun-52, 6687 (UNM); 5 mi n of Willow Creek, ft, 25-Jul-62, Martin, W.C. 73 (UNM); Mineral Creek [about 6 mi n of Glenwood], 7500 ft, 01-Jul-1919, Warnock, C. s.n. (NMC); Willow Creek, Mogollon Mts, Jones 1054 (UNM); Silver Creek, 7000 ft, 03-Jul-1912, (NMC). **Cibola Co.:** La Mosca Canyon, 25-Jul-76, Hutchins, R. 6310 (UNM); Mt Taylor, Lilies Spring, 12-Jun-61, Osborn 623 (UNM); Mts w of Grants Station, 01-Aug-1892, Wooton, E.O. 293 (NMC); Craters, 28-Jul-06, Wooton, E.O. s.n. (UNM); La Mosca Lookout, Mt. Taylor, 14-Jun-61, Osborn 643 (UNM); summit of Mt. Taylor, 11280 ft, 18-Jul-59, Martin, W.C. 3365 (UNM); Mt. Taylor, Salazar Spring, 20-Jun-98, Ivey s.n. (UNM); Mt. Taylor, 8900 ft, 09-Jul-32, Castetter 6696 (UNM); Mt Taylor, bottom of Water Canyon, 16-Jun-60, Osborn 40 (UNM); Zuni Mts, La Jara Spring, 14-Jun-69, Riffle s.n. (UNM). **Colfax Co.:** hwy 64 w of Cimarron, 06-Jun-77, Hutchins, R. 6963 (UNM); Along hwy 64 7 miles east of Raton, plains grassland vegetation, disturbed roadside pull-out, 6700 ft, 27-May-98, Allred, Kelly W. 7129 (NMCR); 10 mi e of Yankee, 02-Jul-73, Higgins, L.C. 7513 (NMC). **Red River pass,** 01-Jul-55, Nisbet 8671 (UNM). **Dona Ana Co.:** Organ Mts, 01-Jun-1891, Wooton, E.O. s.n. (NMC). **Grant Co.:** Mogollon Creek, 8000 ft, 20-Jul-03, Metcalfe, O.B. 278 (NMC); Mogollon Mts, lower plaza, Frisco, 6000 ft, 25-Jul-1900, Wooton, E.O. s.n. (NMC); Black Range, e of Santa Rita, 14-Aug-42, Clark, O.M. 3243 (UNM); Black Canyon campground, 32 mi n of Mimbres, 7100 ft, 18-Jun-68, Hess, W. 1998 (NMC); 15 mi nw of Silver City, 5500 ft, 09-May-68, Hess, W. 1880 (NMC). **Hidalgo Co.:** Animas Mts, upper Pine Canyon, 04-Jun-76, Hubbard, J.P. s.n. (NMC); Animas Mts,

(Continued on page 4, *Vicia*)



(*Vicia*, continued from page 3)

6800 ft, 17-Jul-75, Wagner, W. 1029 (UNM). Lincoln Co.: South Fork Creek area, 7480 ft, 31-Aug-68, Hutchins, R. 1634 (UNM); Eagle Creek, 6 mi w of Alto, 7600 ft, 16-Jul-77, Hutchins, R. 7105 (UNM); e side of Eagle Creek Canyon road, 3.5 mi nw of Alto, 7800 ft, 19-May-81, Ward, D. 129 (NMC); 3 mi w of Lincoln, 28-Apr-90, Sanderson, M.W. s.n. (NMC); head of Pierce Canyon, 8000 ft, 13-Jul-1920, Hendricks, B.A. 2 (NMC); Cedar Creek 1/2 mi n of Ruidoso, 16-Aug-59, Hrrington s.n. (UNM); White Mts, 01-Aug-65, Hutchins, R. 786 (UNM); Eagle Creek, Gilmore's Ranch, 17-May-1899, Turner 41 (NMC); hwy 37, 7 mi s of Nogal, 04-Sep-71, Hutchins, R. 3646 (UNM); Capitan Mts, 10060 ft, 10-Aug-95, Lee-Chadde, S. 103 (NMC); White Mts, 25-Aug-07, Wooton & Standley 3418 (NMC); 1 mi w Alto, 7600 ft, 28-Jul-81, Ward, D. 468 (NMC); McBride's Place, White Mts, 26-Jul-1899, Turner, B.A. 90 (NMC). Los Alamos Co.: between hwy 4 and Apache Spring, 27-Jul-75, Halley 47 (UNM); Pajarito Canyon, 7000 ft, 24-Jul-79, Tierney 303 (UNM); Bandelier Nat. Mon., Frijoles Mesa, 27-Jul-75, Halley 54 (UNM); upper Frijoles Canyon, 7000 ft, 07-Jul-82, Dunbar 592 (UNM); Pajarito Canyon, 6200 ft, 07-Jul-79, Tierney 135 (UNM); Frijoles Mesa, 6800 ft, 27-Jul-75, Halley 54 (UNM); Frijoles Canyon, Bandalier Nat. Mon., 27-Jun-41, Clark s.n. (UNM). Luna Co.: on open slope just below ridgetop, just E of summit of Cooke's Peak, 7600 ft, 20-Sep-87, Columbus, J. Travis 1828 (NMCR). McKinley Co.: Navajo Reservation, s Chuska Mts, 7500 ft, 04-Jun-01, Clifford, A. 569 (SJNM). Mora Co.: Pecos Wilderness, along river, 9380 ft, 15-Jul-82, Andrews 225 (UNM); Canyon Colorado Equid Sanctuary, Wagon Mound, 5960 ft, 28-May-90, Smith, G. 10 (NMC); n of Wagon Mound, 14-Jun-80, Hutchins, R. 9006 (UNM); Coyote Creek State Park n of Guadalupita, 03-Oct-81, Hutchins, R. 9980 (UNM); 16 mi nw of Mora, 9300 ft, 31-Jul-76, Hutchins, R. 6411 (UNM). Otero Co.: Sacramento Mts, La Luz Canyon, Lincoln National Forest, at jct with road to Bailey Canyon, mixed conifer forest with ponderosa, douglas fir, aspen, 8500 ft, 23-May-02, Kelly W. Allred 8229 (NMCR); Sacramento Mts, La Luz Canyon, meadow area at junction with Bailey Canyon road, mixed conifer vegetation, 8385 ft, 31-May-01, Allred, Kelly W 8056 (NMCR); White Mts, Mescalero Indian Reservation along hwy 244, about 6 miles southeast of jct with hwy 70, ponderosa pine community along weedy roadside, 7500 ft, 18-Sep-93, Allred, Kelly W. 6069 (NMCR); 12 mi nw of Cloudercroft, Schofield Canyon, 13-Sep-60, Martin, W.C. 4456 (UNM); Cloudercroft, 03-Jul-49, Castetter 6908 (UNM); 1 mi ne of Cloudercroft, 8700 ft, 29-Jun-52, Dunn, D.B. 8183 (NMC); Sacramento Mts, 8 mi w of Weed, 8000 ft, 30-May-77, Higgins, L.C. 10233 (NMC); 4 mi se of Cloudercroft, 22-Jun-73, Higgins, L.C. 7417 (NMC); Sacramento Mts, Cloudercroft, 19-Jul-1899, Wooton, E.O. s.n. (NMC); 1 mi ne of Cloudercroft, 8700 ft, 29-Jun-52, Dunn, D.B. 8197 (NMC); 1 mi ne Cloudercroft, 9000 ft, 29-Jul-51, Dunn, D.B. 7550 (NMC); 5.9 mi w of Sacramento, 8800 ft, 06-Aug-69, Conley, W. s.n. (NMC); 8 mi se of Cloudercroft, 7700 ft, 30-May-81, Hutchins, R. 9560 (UNM); Sacramento Mts, James Canyon, 26-Jun-1899, Wooton, E.O. s.n. (NMC). Rio Arriba Co.: Meadows, Cumbres Range, 07-Aug-51, Clark s.n. (UNM); San Pedro Peaks area, 10000 ft, 18-Jul-64, Fleck s.n. (UNM); Canjilon, Foster 17 (UNM); San Pedro Peak, 10500 ft, 11-Jul-64, Fleck s.n. (UNM); Jicarilla Reservation, ft, 18-Jul-96, Heil, K. 10200 (SJNM); Carson Nat. For., 24-Jun-95, Clifford, A. 524 (SJNM); Jicarilla Reservation, 18-Jul-96, Heil, K. 10154 (SJNM). San Juan Co.: Chuska Mts, 02-Jul-55, 8646 (UNM); Chuska Mts, 9120 ft, 04-Jun-00, Clifford, A. 418 (SJNM). San Miguel Co.: Pecos, 01-Jul-1904, Bartlett, F. 196 (NMC); upper Pecos River, 16-Jun-1898, Maltby & Cayhill 7 (UNM); 5 mi se of Gallinas, 6600 ft, 05-Jun-77, Hutchins, R. 6901 (UNM); Soldier Creek, 9500 ft, 01-Sep-62, Weissenborn 69 (UNM); n of Gloriaeta, 7400 ft, 24-Aug-08, Standley, P.C. 5264 (NMC); Beulah, 01-Aug-1899, Cockerell, T.D.A. s.n. (NMC); Winsor's Place [near Cowles], 8400 ft, 29-Jun-08, Standley, P.C. 4008 (NMC); near Cowles, 05-Jul-31, Castetter 6699 (UNM); near Pecos, 6700 ft, 17-Aug-08, Standley, P.C. 5019 (NMC); Pecos River n of Terrero, 01-Jun-80, Hutchins, R. 8857 (UNM); Jack's Creek campground, 21-Jul-79, Hutchins, R. 8344 (UNM); hwy 85, 2 mi n of Las Vegas, 05-Jun-77, Hutchins, R. 6905 (UNM); near Storrie Lake, 6500 ft, 28-Jun-73, Malcheski, P. 603 (SJNM). Sandoval Co.: Valles Caldera National Preserve, Hartman, R.L. (NMCR); 16 mi w of Los Alamos, 13-Jun-76, Hutchins, R. 5909 (UNM); Redondo Peak, 11-Jun-63, Osborn 1203 (UNM); Valles Caldera, 8500 ft, 26-Jun-01, Hartman, R. 71399 (UNM); Sandia Mt near North Sandia Peak, 07-Aug-95, Sivinski, R. 3163 (UNM); Bland Canyon, 6400 ft, 05-Jun-64,

Robertson 99 (UNM); Valle Grande, 09-Jul-60, Jones 170 (UNM); Baca Land & Cattle Co., Suphur Creek, 8250 ft, 01-Jul-75, Ludwig, J. 1280 (NMC); Las Conchas marsh, meadow, 18-Sep-60, Howe 2 (UNM); e slope Redondo Peak, 11-Jun-63, Osborn 1122 (UNM). Santa Fe Co.: 18 mi ne of Santa Fe, 10000 ft, 31-Jul-76, Hutchins, R. 6349 (UNM); Holy Ghost Creek, 9000 ft, 24-Aug-60, Martin, W.C. 4354 (UNM); hwy 475 ne of Santa Fe, 31-Jul-76, Hutchins, R. 6343 (UNM); Twinings, 8900 ft, 02-Jul-32, Castetter 6695 (UNM). Sierra Co.: along Diamond Creek. About .25 mi S of its jct with Trail 42. Ponderosa, Gambel's oak, Picea dominant. Flowers purple., 7900 ft, 07-Jun-94, Roalson, E. H. 837 (NMCR); 1 mi w of Kingston, 8000 ft, 08-May-05, Metcalfe, O.B. 1603 (UNM); 1 mi w of Kingston, 8000 ft, 08-May-05, Metcalfe, O.B. 1603 (NMC). Socorro Co.: below S. Baldy above Water Canyon, 11-Jun-59, Martin, W.C. 3237 (UNM); Bear Trap Canyon, San Mateo Mts, 29-Jul-61, Jones s.n. (UNM); Magdalena Mts, 8000 ft, 10-Mar-64, Skinner 49 (UNM). Taos Co.: hwy 3 w of Tres Ritos, 01-Aug-76, Hutchins, R. 6449 (UNM); Sangre de Cristo Mts, 2.5 air mi n of Red River, 10500 ft, 17-Aug-73, Holmgren, N.H. 7257 (NMC); Lake Fork Trail, 10400 ft, 07-Aug-67, Mackay 184 (UNM); below Hematitio Peak, 01-Aug-96, Atwood, D. 21117 (UNM); Kiowa Road 5 mi n of hwy 48, 1 mi e of Questa, 25-Jun-95, Hevron, B. 2334 (UNM); Hondo Canyon, 9500 ft, 08-Jul-67, Mackay 132 (UNM); La Sombra campground, 5 mi e of Taos, 20-Jun-61, Dixon 44 (UNM); hwy 150, w of Taos Ski Valley, 06-Jun-77, Hutchins, R. 6982 (UNM). Torrance Co.: along crest trail, Manzano Mts, e of Mosca Peak, 30-Jun-63, Bedker 1197 (UNM); Manzano Peak, 29-Jun-63, Bedker 1103 (UNM); Manzano Mts, near Tajiique, 7500 ft, 28-Jul-62, Bedker 242 (UNM); Manzano Peak, 14-Jul-63, Bedker 880 (UNM). Union Co.: a few mi n of Clayton, 20-Jun-51, Clark, O.M. s.n. (UNM); Sierra Grande, 17-May-46, Hershey, A.L. 10952 (UNM); base of Capulin Mt, 20-Jun-51, Clark s.n. (UNM); Clayton, 01-Jun-1906, Bartlett, F. 213 (NMC); 13 mi n of Union-Quay county line on hwy 18, 28-May-73, Higgins, L.C. 6931 (NMC); Sierra Grande, 8000 ft, 02-Jul-76, Hubbard s.n. (UNM).

Vicia leucophaea

Catron Co.: Mogollon Mts, middle fork of the Gila River, 7000 ft, 05-Aug-00, Metcalfe, O.B. s.n. (NMC); Mogollon Mts, west fork of the Gila River, dry hills, 7500 ft, 05-Aug-03, Metcalfe, O.B. s.n. (NMC); Mogollon Mts, on Mogollon Creek, 8000 ft, 18-Jul-03, Metcalfe, O.B. 257 (NMC). Hidalgo Co.: Animas Mts, 7000 ft, 10-Apr-75, Wagner, W. 1725 (UNM); Animas Mts, 6600 ft, 22-Jul-75, Wagner, W. 1234 (UNM). Socorro Co.: San Mateo Mts, For. Rd. 330, 9330 ft, 27-Aug-78, Moir 469 (NMC).

Vicia ludoviciana

Bernalillo Co.: Sandia Mts, 20-Apr-70, Hutchins, R. 2833 (UNM). Colfax Co.: hwy 56 e of Springer, 05-Jun-77, Hutchins, R. 6950 (UNM). DeBaca Co.: hwy 20 s of Ft. Sumner, 13-May-78, Hutchins, R. 7391 (UNM); hwy 285, 15 mi nw of Mesa, 18-May-80, Hutchins, R. 8763 (UNM). Dona Ana Co.: Organ Mts, Van Patten's, 25-Apr-1895, Wooton, E.O. s.n. (NMC); Organ Mts, Bishop's Cap, 04-Apr-08, Wooton, E.O. 3805 (NMC); Organ Mts, Filmore Canyon, 25-Mar-08, Wooton, E.O. 3822 (NMC); White Sands Missile Range, Mineral Hill, 07-Apr-92, Anderson, D.L. 5466 (NMC); Organ Mts, 08-Apr-38, Heep s.n. (NMC); Organ Mts, 5000 ft, 30-Apr-1898, Wooton, E.O. s.n. (NMC); Organ Mts, Van Patten's, 25-Apr-1895, Wooton, E.O. s.n. (NMC); San Andres Mts, Black Mt, 5500 ft, 24-Mar-72, Todsens, T.K. s.n. (NMC); w base of Organ Mts, mouth of Dripping Springs Canyon, 6000 ft, 25-Apr-82, Ward, D. 8 (NMC); Organ Mts, Filmore Canyon, 15-Apr-1899, Wooton, E.O. s.n. (NMC); Organ Mts, Acquire Springs Campground, 13-Apr-94, McIntosh, L. 2964 (NMC); College Ranch, 20-May-53, Dunn, D.B. s.n. (UNM); Acquire Spring, 21-Apr-84, Hutchins, R. 11150 (UNM); St. Nicholas Canyon, San Andres Mts, Andrew 26 (UNM); San Andres Mts, Ash Canyon, Lucero Tank, 22-May-75, Loh, V. 219 (UNM); Pena Blanca, 30-Mar-05, Wooton, E.O. s.n. (UNM); Dona Ana Mts, 4700 ft, 26-Mar-85, Allred, Kelly W. 2780 (NMCR). Eddy Co.: Los Medanos site, Livingston Ridge, 01-Mar-79, Knight, P. s.n. (UNM); Walnut Canyon, 05-Apr-56, McKechnie 457 (UNM). Grant Co.: 13.5 mi se of Hurley, 4900 ft, 29-Apr-73, Holmgren, N.H. 6979 (NMC); Mangas Springs, 18 mi nw of Silver City, 4770 ft, 28-Apr-03, Metcalfe, O.B. 38 (NMC); on open slope of hill just above small drainage containing Quercus, 5900 ft, 10-Apr-87, Columbus, J.

(Continued on page 5, *Vicia*)

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

— L innaeus



(*Vicia*, continued from page 4)

Travis 853 (NMCR); Gila Nat. For. w of Burro Mts, 09-May-84, Fletcher, R. 7592 (UNM). **Harding Co.:** 10 mi e of Mosquero on hwy 39, 29-May-73, Higgins, L.C. 6934 (NMC); Kiowa Nat. Grasslands, Canon Blanco, 5500 ft, 01-Jul-81, Ward, D. 239 (NMC); Canadian River Canyon, 29-Jun-81, Knight, P. 1585 (UNM). **Hidalgo Co.:** Black Mts, n end, about 5 mi e of Arizona line along U.S. hwy 70, 02-Apr-90, Porter (UNM); Guadalupe Canyon, 07-Apr-79, Spellenberg, R. 5059 (NMC); Animas Lake bed, 01-May-37, Hershey, A.L. 245 (NMC); Guadalupe Canyon, 09-May-44, Hershey, A.L. 10990 (UNM); Animas Mts, Indian Creek, 20-May-75, Wagner, W. 750 (UNM); Guadalupe Canyon, 15-Apr-62, Martin 5079 (UNM); Little Hatchet Mts, ne of Hachita Peak, 29-Mar-97, Worthington, R. 26216 (UNM); For. Rd. 63, Coronado Nat. For., 14-May-83, Hutchins, R. 10641 (UNM); San Luis Pass, 21-May-75, Wagner 833 (UNM); Guadalupe Canyon, 03-Apr-61, Jones s.n. (UNM). **Lea Co.:** 10 mi n of Hobbs on route 18, 21-Apr-54, Castetter 6683 (UNM). **Lincoln Co.:** Fort Stanton, 11-Jun-86, Allred, K.W. 3152 (NMCR); Fort Stanton, 05-Apr-81, Lebgue 476 (NMCR); Gray, 6000 ft, 25-May-1898, Skehan, J. 15 (NMC); White Mts, McBride's place, Little Creek, 18-Jan-1899, Turner 256 (NMC); near Gray, 6000 ft, Skenhan, J. in 1898 (NMC); 5 mi nw of Corrizozo, 26-Apr-69, Hutchins, R. 1798 (UNM); White Mts, 04-Apr-70, Hutchins, R. 2796 (UNM); Bonita Lake, 20-Aug-68, Hutchins, R. 1495 (UNM); Three Rivers Campground, 04-Apr-70, Hutchins, R. 2794 (UNM). **Luna Co.:** Florida Mts, 4700 ft, 20-Apr-73, Holmgren, N.H. 6894 (NMC); Rock Hound State Park, ft, 07-Apr-77, Hutchins, R. 6734 (UNM); Rock Hound State Park, 08-Apr-77, Hutchins, R. 6772 (UNM); Florida Mts, 06-Apr-97, Worthington, R. 26282 (UNM); Florida Mts, Spring Canyon, ft, 10-Apr-91, Lightfoot 29 (UNM); near top of N-S ridge overlooking Cooke's Canyon, 5200 ft, 11-May-87, Columbus, J. Travis 1124 (NMCR); Goodstight Mts, 06-Apr-98, Hutchins, R. (UNM). **Mora Co.:** Vercere Canyon, 29-Jun-81, Fletcher, R. 5230 (UNM); Kiowa Nat. Grasslands w of Canadian River, 17-May-82, Fletcher, R. 6016 (UNM). **Otero Co.:** hwy 70, 5 mi w of Ruidoso, 17-Jul-77, Hutchins, R. 7117 (UNM); s side Cornudas Peak, 16-Apr-87, Knight, P. 3428 (UNM); hwy 82, 2 mi w of Mayhill, 05-Jul-77, Hutchins, R. 7084 (UNM); w slope White Mts, 02-May-70, Hutchins, R. 2857 (UNM); Cloudcroft, 29-Jul-31, Dunn, D.B. 7547 (UNM). **Roosevelt Co.:** Melrose Airforce Base, 06-May-93, Bleakly, D. 82 (UNM); Melrose Airforce Base, 22-Jun-93, Bleakly, D. 182 (UNM). **San Juan Co.:** Navajo Reservation, 4.5 mi sw of Shiprock Diatreme, 5640 ft, 28-Apr-01, Clifford, A. 175 (UNM). **San Miguel Co.:** Anton Chico Grant, 12-May-83, Fletcher, R. 6985 (UNM). **Sandoval Co.:** White Rock Canyon along Rio Grande, 14-May-88, Jacobs 4006 (UNM). **Sierra Co.:** Star Peak, 6500 ft, 28-Apr-05, Metcalfe, O.B. 1530 (NMC); Black Range, s of South Diamond Creek, 12-Aug-82, Fletcher, R. 6527 (UNM); Star Peak, 28-Apr-05, Metcalfe, O.B. 1530 (UNM). **Socorro Co.:** Jordan Canyon, Magdalena Mts, 11-May-75, Hutchins, R. 5453 (UNM); San Mateo Mts, Cibola National Forest, For. Rd. 138 along ridge, 3 mi n of jct For. Rd. 96, 25-Sep-02, Kelly W. Allred 8441 (NMCR); Sevilleta, McKensie Flat, 12-Aug-74, Kiger 127 (UNM); Magdalena Mts, Sawmill Canyon, 24-May-75, Hutchins, R. 5465 (UNM); Water Canyon, Magdalena Mts, 12-May-73, Hutchins, R. 4023 (UNM). **Union Co.:** Clayton, 20-Jun-51, Clark s.n. (UNM); Clayton, 20-Jun-51, Clark s.n. (UNM).

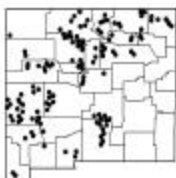
Vicia pulchella

Catron Co.: East Diamond Canyon, Black Range, 12-Aug-82, Knight, P. 2238 (UNM); Mogollon Mts, Copper Creek, 20-Jul-84, Fletcher, R. 7710 (UNM); Datil Mts, 29-Aug-76, Fletcher, R. 1167 (UNM); Datil Mts, 31-Jul-76, Fletcher, R. 876 (UNM); Gila Nat. For., Blanca Canyon, 6800 ft, 26-Aug-15, Chapline, W. R. 333 (NMC); Mogollon Mts, Hall Canyon, 21-Jul-84, Dunbar 679 (UNM); Gila Nat. For., Indian Creek Canyon, 20 m of Mogollon, 8200 ft, 27-Aug-67, Hess, W. 1421 (NMC); McClure's Ranch, 6000 ft, 02-Aug-00, Wooton, E.O. s.n. (NMC); Mogollon Mts, Mogollon Creek, 8000 ft, 18-Jul-03, Metcalfe, O.B. 266

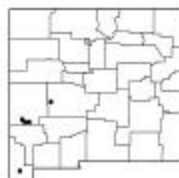
(NMC). **Cibola Co.:** sw end of Water Canyon, 23-Jul-60, Osborn 476 (UNM); Mt. Taylor, San Mateo Spring, 19-Jul-61, Osborn 718 (UNM); Upper Coal Mine Canyon, 23-Aug-60, Osborn 563 (UNM). **Grant Co.:** Twin Sisters Creek, n of Fort Bayard, 8000 ft, , Hubbard, C. 21 (NMC); Black Range, e of Santa Rita, 14-Aug-42, Clark 10366 (UNM); Mogollon Mt s, Iron Creek, 7850 ft, 25-Jun-78, Moir, W. 101 (NMC); Black Range, e of Santa Rita, 15-Aug-42, Clark 10422 (UNM); Hillsboro Peak, 10000 ft, 25-Aug-04, Metcalfe, O.B. 1245 (NMC); 15-Aug-63, Turner 313 (UNM); Black Range, e of Santa Rita, 15-Aug-42, Clark 10422 (UNM); w of Emory Pass, 06-Sep-82, Hutchins, R. 10594 (UNM). **Hidalgo Co.:** Animas Peak foothills, 05-Sep-90, Ivey s.n. (UNM); Animas Mts, w fork Indian Creek, 06-Aug-76, Wagner, W. 2267 (UNM); Gray Ranch, Animas Mts, 15-Sep-90, Ivey 143 (UNM); Animas Mts, 04-Oct-75, Wagner 1794 (UNM). **Lincoln Co.:** White Mts, 7000 ft, 06-Aug-97, Wooton, E.O. 288 (NMC); Eagle Creek, 29-Aug-1899, Turner 224 (NMC); White Mts, 30-Jun-69, Hutchins, R. 2105 (UNM); White Mts, 5 mi w of Alto, 29-Jun-69, Hutchins, R. 2082 (UNM); Sierra Blanca, just e of the ski area, 24-Jun-73, Higgins, L.C. 7445 (NMC); s of Eagle Creek, White Mts, 18-Aug-69, Hutchins, R. 2481 (UNM); Rio Ruidoso Canyon, Sacramento Mts, 10-Aug-65, Bennett 8654 (UNM); White Mts, 01-Aug-1898, Townsend s.n. (NMC); White Mts, 7400 ft, 25-Aug-07, Wooton, E.O. & P.C. Standley (NMC); Mescalero Eagle Lakes, 21-Aug-76, Hutchins, R. 6574 (UNM); Bonita Lake, 20-Aug-68, Hutchins, R. 1513 (UNM); Eagle Creek, 16-Jul-77, Hutchins, R. 7109 (UNM); Sierra Blanca, 28-Aug-76, Wagner & Sabo 2524 (UNM); Fort Stanton, 25-Aug-81, Lebgue, T. 558 (NMCR); White Mts, 6300 ft, 26-Jul-1897, Wooton, E.O. 226 (NMC). **Mora Co.:** near Cowles, 9000 ft, 30-Aug-42, Hershey, A.L. 2309 (NMC); Above Cowles, 8600 ft, 31-Aug-42, Hershey, A.L. 2309 (NMC). **Otero Co.:** Sacramento Mts, Parson Mine, 17-Jul-91, Lightfoot 179 (UNM); 1 mi ne of Cloudcroft, 9000 ft, 29-Jul-51, Dunn, D.B. 7547 (NMC); White Mts, Mescalero Apache Reservation, 21-Jul-05, Wooton, E.O. s.n. (UNM); Sacramento Mts, Tularosa Creek, 18-Aug-1899, Wooton, E.O. s.n. (NMC); Cloudcroft, 30-Jun-1899, Wooton, E.O. s.n. (NMC). **San Miguel Co.:** Beulah, , Cockerell s.n. (UNM); 1 mi n of Terrero, 13-Jul-81, Hutchins, R. 9738 (UNM); Los Pinos Guest Ranch, Cowles, Sangre de Cristo Mts, at end of hwy 63 north from Pecos, upper montane mixed coniferous forest, 8000 ft, 03-Aug-95, Allred, K.W. s.n. (NMCR); Upper Pecos River, 27-Jul-1898, Maltby & Cayhill 108 (UNM); Sangre de Cristo Mts, hwy 63, 17-Aug-96, Atwood, D. 21448 (UNM); Pecos River Nat. For., Harvey's Upper Ranch, 9600 ft, 01-Aug-08, Standley, P.C. 4620 (NMC); Pecos River Nat. For., Gallinas Planting Station, 01-Jul-1908, Bartlett, W.H. Mrs. s.n. (NMC); Winsor's Ranch, 8400 ft, 16-Jul-08, Standley, P.C. 4364 (NMC). **Sierra Co.:** Taylor Peak, Black Range, 12-Aug-82, Hutchins, R. 10342 (UNM); Trail between Turkey Run Creek and Diamond Creek Valley. Dominated by Pinus, 11-Aug-93, Roalson, E.H. 621 (NMCR); Hoyt Creek, 8200 ft, 02-Sep-94, Roalson, E.H. 1028 (NMCR). **Socorro Co.:** s Baldy, Magdalena Mts, 15-Aug-76, Hutchins, R. 6535 (UNM); San Mateo Mts, Bear Trap Canyon, 30-Aug-75, Wagner 1320 (UNM); Magdalena Mts, 07-Apr-82, McIntosh, L. 941 (UNM); Bear Trap Canyon, San Mateo Mts, 27-Jul-60, CJ s.n. (UNM); Magdalena Mts, below Langmuir Laboratory, 10000 ft, 18-Aug-73, Spellenberg, R. 3587 (NMC); Mt. Withington, 11-Jul-52, 6684 (UNM); Water Canyon, 30-Jun-73, Hutchins, R. 4316 (UNM); hwy 59 e of Poverty Creek, 01-Sep-80, Hutchins, R. 9186 (UNM); Water Canyon, 27-Jul-75, Hutchins, R. 5584 (UNM); Water Canyon, 25-Aug-73, Hutchins, R. 4513 (UNM); Water Canyon, 25-Aug-73, Hutchins, R. 4711 (UNM); Bear Trap Canyon, San Mateo Mts, 19-Aug-68, Demaree, D. 59011 (UNM); San Mateo Mts, 04-Aug-01, Mygatt, J. 151 (UNM); Water Canyon, 13-Jul-74, Hutchins, R. 5055 (UNM).

Vicia villosa

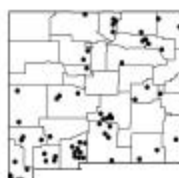
Colfax Co.: 11 mi e of Raton, 18-Jul-91, Hutchins, R. 13066 (UNM). **Dona Ana Co.:** College Farm, Las Cruces, 23-May-1893, Wooton, E.O. s.n. (NMC); College Farm, Las Cruces, 01-Jun-1895, Peacock, F. s.n. (NMC). **San Miguel Co.:**



Vicia americana



Vicia leucophaea



Vicia ludoviciana



Vicia pulchella



Vicia villosa



On the Trail of John Bigelow: A Clarification of Some New Mexico Type Localities

Robert Sivinski

New Mexico Forestry Division, P.O. Box 1948, Santa Fe, New Mexico 87504

ONE of several explorations for a transcontinental railway route in 1853 was lead by Lieutenant A.W. Whipple of the U.S. Army Corps of Topographical Engineers. The Whipple Expedition left Fort Smith, Arkansas in July of 1853 and terminated in Los Angeles, California in 1854. The official report of this expedition (Whipple 1857) makes interesting reading and can now be found on the internet at <http://lcweb2.loc.gov/ammem/ndlpcoop/oahtml/afk4383.html>. The surgeon and botanist for this survey was Dr. John Milton Bigelow. This was Bigelow's second trip across New Mexico, the first being the U.S./Mexico boundary survey in 1851. His biography has been published by Waller (1942), which is also available on the internet at <http://publications.ohiohistory.org/ohstemplate.cfm?action=toc&vol=51>. Bigelow made extensive collections of vascular and cryptogamic plants while the Whipple expedition traversed eastern and central New Mexico. Several of his specimens were of plants new to science and are now held as type specimens in eastern United States herbaria, most notably GH, NY, and US. As was often the case with early, fast-moving explorations through relatively uncharted territories, collection locations cited for Bigelow's specimens are sometimes vague. Some of his collection locations are at places where the survey crew simply made-up names that did not persist or used (and misused) provincial names that are no longer in use. Therefore, I have studied the itinerary of the Whipple Expedition to more precisely place some uncertain type localities of New Mexico plants.

Upon leaving the Canadian River Valley, the Whipple Expedition paralleled The Caprock and entered eastern New Mexico in late September 1853. They crossed the Canadian River divide and camped at a creek that Whipple surmised was "the first affluence to the Pecos". They named it 'Hurrah Creek'. Bigelow made several collections that were labeled 'Hurrah Creek' including two that would later typify the names *Teloxys cornuta* Torrey [= *T. graveolens* (Wildenow) W.A. Weber] and *Machaeranthera angustifolia* Wootton & Standley [= *M. canescens* (Pursh) A. Gray var. *ambigua* B. Turner]. Hurrah Creek is not on any map of the region. A study of Whipple's itinerary and his description of the countryside, make it apparent the first creek they would encounter in the Rio Pecos basin would be Rito Esteros (Esteros Creek), which is a tributary of present-day Santa Rosa Reservoir on the Rio Pecos in northern Guadalupe County. Their subsequent northwest travel to Rio Gallinas was about a 15-20 mile trek, which reinforces my belief that Hurrah Creek is a superfluous name for Rito Esteros.

The expedition force divided at Anton Chico and Lt. Whipple took a few men (including Dr. Bigelow) up the Rio Pecos and across the river basin divide to Galisteo and the Rio Grande. En route, they camped at place on the Rio Pecos called 'La Cuesta', another ambiguous name. Bigelow collected a fern at this location that would become the type for *Notholena standleyi* Maxon. Whipple identified La Cuesta as a broad agricultural valley within a steep-walled canyon about 15 miles west-northwest of Anton Chico. This description and an attached drawing of the La Cuesta valley perfectly illustrate the Rio Pecos valley near the present-day settlement of Villa Nueva in western San Miguel County. Apparently, the name 'La Cuesta' did not persist at this location.

After reaching the Rio Grande at Santo Domingo, Whipple and Bigelow made their way to Albuquerque where they were reunited with the

remainder of their group on 5 October 1883. Whipple and most of his staff stayed in Albuquerque for about a month to make local observations, take astronomical readings and make maps of the first leg of their journey from Fort Smith. Bigelow and expedition geologist, Jules Marcou, took this opportunity to explore the nearby Sandia Mountains (spelled 'Zandia' by Whipple). The season was well into autumn, yet Bigelow made numerous plant collections in this mountain range during the month of October, including twelve type specimens for new taxa. His camp was based in the little village he variously called 'Santa Antonita' or 'San Antonita'. This is an obvious misspelling by Bigelow since the Spanish diminutive of Saint Anthony (San Antonito) cannot take the feminine form 'Santa Antonita'. The Mexican War with General Santa Ana was the hottest news of the day, so Santa Antonita may have sounded all right to him. However, it was confusing to Paul Standley, who later attempted to list all significant New Mexico type localities (Standley 1910). Standley admits "I have not been able to locate this point definitely; I find no mention of it in Whipple's Report". The reason Santa Antonita is not found in the official report is simply because Bigelow and Whipple were separated while Bigelow was camped in the mountains. Santa Antonita is an erroneous reference to the community of San Antonito, which still exists on the lower eastern slope of the Sandia Mountains in northeastern Bernalillo County. This village was originally adjunct to the older community of San Antonio (5 miles south), which is now called Cedar Crest. Bigelow's specimens from this Sandia Mountain location include the types for *Actinella leptoclada* A. Gray [= *Tetraneuris argentea* (Torrey) Greene], *Thalictrum fendleri* Engelm var. *polycarpum* Torrey [= *T. fendleri* var. *fendleri*], *Deweya acaulis* Torrey [= *Aletes acaulis* (Torrey) Coulter & Rose], and *Ligusticum scopulorum* A. Gray [= *Conioselinum scopulorum* (A. Gray) Coulter & Rose.].

The type for *Penstemon whippleanus* A. Gray is labeled "Camp B San Antonita, Sandia Mountains, Oct 10", which clearly links Bigelow's San(ta) Antonita location with this mountain range. Camp B probably refers to an overnight camp higher on the mountain. *Pedicularis procera* A. Gray is syntypified by a Bigelow specimen labeled "Sandia Mountains, Camp B. Douglass, aroyas, Oct 10" and the NY isotype of *Senecio bigelovii* A. Gray is also labeled "Camp B Douglas, Oct 10". The reference to "Douglas" is obscure, but may have been shorthand for Douglas spruce, which was the vernacular name Bigelow used in his report for *Abies douglasii* Lindley [= *Pseudotsuga menziesii* (Mirbel) Franco]. All three new species occur at the relatively high elevations of mixed conifer forest with *P. menziesii*. Amazingly, the type specimens for *Clematis bigelovii* Torrey, *Vilfa tricholepis* Torrey [= *Blepharoneron tricholepis* (Torrey) Nash], and *Gentiana bigelovii* A. Gray were also collected on October 10th and are clearly labeled "Sandia Mountains". Bigelow writes in his report that he reached the summit of Sandia Crest that day. I wonder if, while taking in the spectacular view from that 10,687-foot peak, he realized he had made western botany six species richer in a single day?

The Whipple Expedition left Albuquerque for western New Mexico in early November 1853. Autumn was too far advanced for Bigelow to make any additional New Mexican plant collections. However, Whipple's survey gives a much clearer location for the *Helianthus* (Bigelow)

(Continued on Page 7, Bigelow)



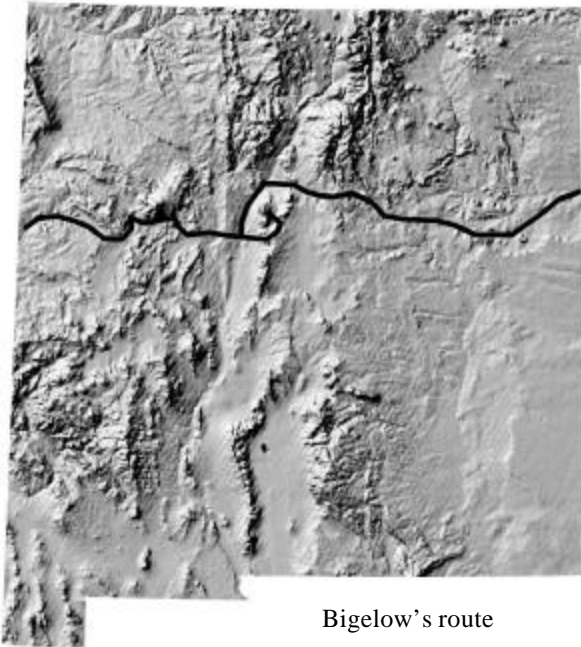
(Bigelow, Continued from page 6)

paradoxus Heiser paratype collection made by surgeon/naturalist Samuel Woodhouse during the 1851 Sitgreaves Expedition two years previous. Heiser (1958) made an apparent transcription error by citing the Woodhouse specimen label as "Nay Camp, Rio Laguna". Whipple followed in Sitgreaves footsteps along the Rio Laguna (correctly called Rio San Jose by Whipple) and writes about a place called 'Hay Camp'. I am sure that Nay Camp and Hay Camp are the same place. Whipple reached Hay Camp after passing within six miles of Mount Taylor and proceeding 11 miles up "a sinuous lava flow... in places broken, so as to allow the little brook to gush out from below and gurgle along by its side". At Hay Camp, the valley spreads out into a large vega of abundant grass, which Whipple says was occasionally cut to supply hay for military posts. His approach through the lava and description of a broadened valley clearly places Hay Camp at the present-day location of Grants in northern Cibola County. The rare *Helianthus paradoxus*

still exists there to this day.

LITERATURE CITED

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- Standley, P.C. 1910. The type localities of plants first described from New Mexico. *Contributions from the U.S. National Herbarium* 13 (6):133-246.
- Waller, A.E. 1942. Dr. John Milton Bigelow, 1804-1878, an early Ohio Physician-Botanist. *Ohio History* 51:313-331.
- Whipple, A.W. 1857. Explorations for a railway route near the thirty-fifth parallel of north latitude from the Mississippi River to the Pacific Ocean. *Corps of Topographical Engineers, War Department*.



Bigelow's route

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 (*).

— Kelly W. Allred [Department of Animal & Range Sciences, MSC Box 3-I, New Mexico State University, Las Cruces, NM 88003]

**Lathyrus venosus* Muhlenberg ex Willdenow var. *intonus* Butters & St. John (Fabaceae): Lincoln Co., Rio Bonito west of Bonito Lake, 27 June 1970, R. Hutchins 3035 (UNM). [The article on *Lathyrus* in the previous newsletter concluded that this species had perhaps escaped from hay or forage, but had failed to persist. This specimen speaks to the contrary; the species seems to have persisted in the Sacramento Mts since its first discovery there in 1899 by E.O. Wooton. We now have specimens from 1899, 1936, 1949, and 1970, all from the same general region, but from different sites. I still consider the species to be exotic in NM, however.]

Cladium californicum (S. Watson) O'Neill (Cyperaceae). This was reported for New Mexico by Wooton & Standley (1915, as the closely related *C. jamaicense* Crantz, a species of mostly coastal marshes), and repeated by Martin & Hutchins (1980). In the recent volume of *Flora North America* (vol. 23, Cyperaceae),

however, Gordon Tucker omits this or any other species of *Cladium* from the state. To verify its occurrence, I offer the following documentation, courtesy of Jane Mygatt (UNM): Doña Ana Co.: San Andres Mts, Ash Canyon, 19 Aug 1950, R.J. Fleetwood s.n. (UNM). Eddy Co.: Guadalupe Mts, Big Canyon, 29 Aug 1991, R. Sivinski 1800 (UNM); Guadalupe Mts, below Sitting Bull Falls, 13 June 1975, T. Manthey & W. Wagner 920 (UNM). Otero Co.: Sacramento Mts, Lower Dog Canyon, 14 May 1978, R. Fletcher & W. Haggren 606 (UNM); Sacramento Mts, Dog Canyon, 5 June 1955, E.F. Castetter 8146 (UNM).

— Richard Worthington [P.O. Box 13331, El Paso, TX 79913]
Carex chihuahuensis Mack. (Cyperaceae): Hidalgo Co., Peloncillo Mts., Coronado Natl. Forest., along Cloverdale Creek about 1 mi. SE of the Pendleton Ranch House (T33S, R21W, Sec 16, NW1/4) 5350 ft. 17 May 1986, R. D. Worthington 14086 (UTEP, COLO, UNM).





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Kelly Allred

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Taxonomy and Floristics

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