



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.

In This Issue —

- New records from the San Juan Basin1
- *Bernardia* in New Mexico5
- Botanical Literature of Interest.....6
- What's in a Name?6
- Notices6
- Trivia6
- More New Mexico records.....7

Additions to the Flora of New Mexico from the San Juan Basin Flora Project

Kenneth D. Heil¹, Steve L. O'Kane, Jr.², and Arnold Clifford¹

¹ San Juan College, 4601 College Blvd., Farmington, NM 87402

² Department of Biology, University of Northern Iowa, Cedar Falls, IA 50614

The San Juan Basin Flora Project is a multi-year project whose aim is to document all of the native and naturalized vascular plants in the San Juan River Drainage of Arizona, Colorado, New Mexico, and Utah. Here we report 53 taxa previously unknown from New Mexico that were discovered during our field and herbarium work.

A brief description of our methods follows. For a more detailed account, see our (Heil and O'Kane) up-coming paper which will appear in the December issue of *Harvard Papers in Botany* (Catalog of the Four Corners Flora, Vascular Plants of the San Juan River Drainage, Arizona, Colorado, New Mexico and Utah). The Flora Project website has additional information, as well as a list of scientific collaborators (www.sanjuancollege.edu/Herbarium/projects.htm).

An initial working list of the flora was constructed from the collections at San Juan College herbarium (SJNM). To this list were added plants and their localities known from other local herbaria and from available theses and checklists. This initial list, then, consisted solely of plants documented by voucher specimens. The list was vastly expanded by the addition of *potential* taxa gleaned from recent floristic treatments (e.g. Flora of New Mexico, Great Basin Flora, Arizona Flora, Flora of Northern Arizona) as well from monographs and taxon-specific treatments of major groups and from older, historical floras. Published volumes of the Flora of North America were also consulted. Based on known voucher specimens and from these sources, a brief habitat description was compiled for each species to aid in field work. Once the working list of known and potential taxa was completed, field work began. We are attempting to survey all habitat types/geological strata in the study area in every county with an eye to verifying the presence of species predicted to be present. New records are incorporated into the working list at the end of each field season. A master set of voucher specimens is maintained at San Juan College (SJNM). A revised list is created for the upcoming field season. During the later stages of the project, specimens from the following herbaria were consulted and were added to the improving catalogue: Colorado State University, Northern Arizona University, Ft. Lewis College, University of Northern Iowa, Museum of Northern Arizona, Navajo Heritage Herbarium, New Mexico State University, Rancho Santa Ana, New Mexico State University (Range Science Herbarium), Rocky Mountain Herbarium, San Juan College, Brigham Young University, University of Colorado Herbarium, University of New Mexico, and the herbarium at Mesa Verde National Park. Five unpublished working versions of the list were created since 1998. The sixth, which contains only taxa documented by an herbarium specimen, will appear in *Harvard Papers in Botany*. As of this writing, we have documented 2490 unique biological entities (species and infraspecific taxa) in the San Juan Basin.

Our work was substantially improved because of the access granted to the Jicarilla Apache, Southern Ute, and Navajo Reservations. In the past, these areas have been under-collected and under-explored due to their remoteness and the need to have collecting permits. Unfortunately, a significant gap in our collections exists for Ute Mountain in the southwestern corner of Colorado because the Ute Mountain Ute Tribe would not grant us a collecting permit.

(Continued on page 2, San Juan Basin)

Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.
— Linnaeus



(San Juan Basin, Continued from page 1)

We are currently finishing the third year of a five-year grant provided by Mr. Tommy Bolack, of the B-Square Ranch in Farmington and San Juan College. This generous grant has funded field work and, in the near future, will provide funds for publication. The final publication will have keys to each taxon, complete botanical descriptions, synonymy, ethnobotanical information, line drawings (500), watercolors (ca. 50), and photographs (at least 64).

List of New Mexico additions:

Cymopterus terebinthinus (Hook.) T. & G. var. ***petraeus***

(Jones) Goodrich (Apiaceae): San Juan County; Navajo Nation; Carrizo Mountains; 2.25 miles southeast of Beclabito Dome and 1.0 mile north of Teec chin ahi spring; Growing in joint fractures and shallow gravels along rocky channel bottom; exposed weathered Salt Wash member of Upper Jurassic Morrison Formation; Pinyon-Juniper with cliffrose, mountain mahogany, galleta and mutton grass community; (UTM; NAD 27) 0675349, 4073053 ; 5740 ft.; April 02, 2001. Arnold Clifford 01-37 (SJNM).

Arnica fulgens Pursh (Asteraceae): San Juan County; Navajo Nation; Chuska Mountains. South of Washington Pass; along the edges of a small pond. Crystal NM, quadrangle (7.5 min). Ponderosa pine forest UTM 12 690268 UTM S 3990798. 09 July 1998. D. Roth 246 (SJNM, Navajo Heritage).

Chamaechaenactis scaposa (Eastw.) Rydb. (Asteraceae): San Juan County; Navajo Nation, highway to Toadlena from US 666. First major dirt road west of powerline. Hills west of road; ridge south of To-hil-has-idi Wash. Mancos Formation; T24N, R19W, S16 SE1/4; 1900 m. 29 April 1995. K. Heil & A. Clifford 8757 (SJNM).

Cirsium chuskaense R.J. Moore & C. Frankton (Asteraceae): San Juan Co., Sanostee Wash ca. 4 miles west of Sanostee, near old abandoned cabin with a corral, Wingate Formation, 7095 ft, N36° 23'23" W109°01'08", 5 Sep 2002, K. Heil & A. Clifford 20568 (SJNM).

Ericameria nauseosa (Pallas ex Pursh) G.L. Nesom & G.I. Baird var. ***turbinata*** (M.E. Jones) G.L. Nesom (Asteraceae): San Juan Co., Sanostee Wash ca. 4 miles west of Sanostee, near old abandoned cabin with a corral, Wingate Formation, 7095 ft, N36° 23'23" W109°01'08", 5 Sep 2002, K. Heil & A. Clifford 20563 (SJNM).

Erigeron compactus Blake var. ***consimilis*** (Cronq.) S. F. Blake (Asteraceae): San Juan County; Navajo Nation, highway to Toadlena from US 666. First major dirt road west of powerline. Hills west of road ca .5 mi. west of Tsin-nas-kid anticline. T24N, R19W, S20 SW ¼ ; 1900 m. 29 April 1995. K. Heil & A. Clifford 8739 (SJNM).

Erigeron eatonii A. Gray (Asteraceae): San Juan County; Navajo Nation. Beautiful Mountain Road on the southern side of mountain. Near the junction of small road that leads around the east side of the mountain. 8100 ft. 10 May 2000. K. Heil & A. Clifford 14538 (SJNM).

Erigeron engelmannii A. Nels. (Asteraceae): San Juan

County; Navajo Nation; Tertiary terrace-glacial outwash riverine deposit; 1.5 mile southwest of San Juan river - Hogback Monocline crossing; Shadscale, winterfat, galleta, purple threeawn and indian ricegrass community; siltysand to sandy soils with small rounded boulders and gravel; T29N, R16W, Sec.17; 5170 ft.; Arnold Clifford 00-738 (SJNM).

Helianthus maximiliani Schrad. (Asteraceae): San Juan County; Navajo Nation, ca. 7 miles south of Farmington on Highway 371. Roadside along NAPI fields. 15 Sep 1995. K. Heil 9443 (SJNM).

Hymenoxys helenoides (Rydb.) Cockerell (Asteraceae): San Juan County; Navajo Nation. Chuska Mountains; 3.2 miles west of Washington Pass summit. Meadow with ponderosa pine. T21N, R19W, S6. 2460 m. 12 August 1987. K. Heil & John Anderson 3738 (SJNM). [Second report for New Mexico—ed.]

Tetranneuris acaulis (Pursh) Greene var. ***nana*** (Welsh) Kartesz & Gandhi (Asteraceae): San Juan County; Navajo Nation, ca. 3 miles due west of Sanostee on main road (paved). Ca. 2/10 mi. north of abandoned cabin along wind swept ridge. Pinyon-juniper community. Todilto limestone. 36°22'43"N 109°00'53"W. 7740 ft. 4 Sep 2000. K. Heil & A. Clifford. 15633 (SJNM).

Senecio serra Hook. var. ***admirabilis*** (Greene) A. Nels. (Asteraceae): Rio Arriba County: Chromo Mountain. Between end of primitive logging road and road to the summit of mountain. White fir, Douglas fir, and aspen. 36°57'52"N 106°44'03"; 09 Sep 2000. K. Heil & W. Mietty, 15677 (SJNM).

Symphotrichum campestre (Nutt.) G. L. Nesom (Asteraceae): McKinley County: Near Pueblo Pintado Ruins. Ca. .5 miles north of the ruins; along the Chaco River. Riparian community with Rocky Mountain bee plant and salt grass. Heavily grazed. 35°59'21"N 107°41'15"W; 6,514 ft. 24 Sep 2000. K. Heil & A. Clifford, 15933 (SJNM).

Symphotrichum ciliatum (Ledeb.) G. L. Nesom (Asteraceae): San Juan County: B-Square Ranch. Small marsh ca. .5 mi east of Bolack Lake. 50 meters south of road in alkaline soils along floodplain. 36°42'23.3"N 108° 11'29.6"S; 5300 ft. 28 Sep 1999. K. Heil 14324 (SJNM). [Second report for New Mexico—ed.]

Symphotrichum ericoides (L.) G. L. Nesom var. ***pansum*** (Blake) G. L. Nesom (Asteraceae): San Juan County: City of Aztec, just north of State Highway 550; meadow; alluvium; T30N, R11W, Section 9; 5640 ft. 29 August 1987. K. Heil 3778 (SJNM).

Catalpa speciosa (Warder) Warder ex Engelm. (Bignoniaceae): San Juan County: Farmington; near the junction of San Juan Blvd. and Hutton. Just west of Sandy's Automotive. Escape; sandy soils. 36°43'41"N 108°11'45"; 5300 ft. 14 Sep 2001. K. Heil & W. Mietty 17936 (SJNM).

Cardamine pensylvanica Muhl. ex Willd. (Brassicaceae): San Juan County: Farmington. South Farmington Quad. Vine

(Continued on page 3, San Juan Basin)



(San Juan Basin, Continued from page 2)

- Ave. across from the softball fields. Along an irrigation canal. Saline soils; riparian. T29N, R13W, S10 SW ¼; 5380 ft. 5 May 1996. K. Heil 9469 (SJNM).
- Descurainia pinnata*** (Walt.) Britt. var. *intermedia* (Rydb.) C. L. Hitchc. (Brassicaceae): McKinley County: Navajo Nation, Dalton Pass Road south of Navajo 9. Junction with the first major bend in dirt road. Two track past a tan water tank (south). 4-wheel drive road up the escarpment, ca. 1 mile south of water tank. Mesa Verde Group. Slickrock with scattered pinyon-juniper. 16 May 2000. K. Heil, S. L. O'Kane, Jr. & A. Clifford, 14559B (SJNM).
- Erysimum cheiranthoides*** L. (Brassicaceae): San Juan County: Along the Los Piños River just south of La Boca, Colorado. Near Knowlton Hill. T32N, R7W, S8. 18 May 1984. J. M. Porter 84-082 (SJNM).
- Lepidium montanum*** Nutt. var. *montanum* (Brassicaceae): Rio Arriba County: 1 mile towards the Diamante Ranch from US 84. Mancos clay hills. *Artemisia nova* & montane grasses. 36°56'05"N 106°48'49"W. 9 Sep 2000. K. Heil & W. Miett 15703 (SJNM).
- Lesquerella ludoviciana*** (Nutt.) Wats. (Brassicaceae): Rio Arriba County: Largo Canyon area. Un-named canyon by Rock Com #3 well site. South of Crow Canyon and north of Rockhouse Canyon. West side of Largo Wash. T25N, R6W, S28 NW/SE. 21 May 1995. Cyndie Holmes 160 (SJNM).
- Lonicera tatarica*** L. (Caprifoliaceae): San Juan County: Farmington. South Farmington Quad. Vine Ave. across from the softball fields. Along irrigation canal. T29N, R13W, S10 SW ¼. 5 May 1996. K. Heil 9460 (SJNM).
- Stellaria crassifolia*** Ehrhart (Caryophyllaceae): McKinley County: Navajo Nation. Chuska Mountains; near Whiskey Lake, sandstone escarpment north of small pond to the south of Whiskey Lake. 35°58'14"N 108°49'06"W. 2708 m. 13 June 2000. S.L. O'Kane, K. Heil, & A. Clifford 4900 (SJNM).
- Grayia spinosa*** (Hook.) Moq. in DC. (Chenopodiaceae): San Juan County: Ute Mountain Ute Indian Reservation. Along seismograph line MCE-25. Shadscale-sagebrush community. 12 April 1986. Rich Fleming 15 (SJNM).
- Suaeda occidentalis*** (Wats.) Wats. (Chenopodiaceae): McKinley County; Navajo Nation; South Todilto Park; 4.25 miles southwest of Tsaya Lake - Bowl Canyon area; 1.0 mile northeast of Beelzebub Point; alluvial terrace south of confluence of Squirrel Springs wash and Bowl Canyon Creek drainage; alkali sacaton swale with sparse greasewood; alkaline silty clay to silty soils; 7320 ft.; July 06, 2001. Arnold Clifford 01-838 (SJNM).
- Cucurbita pepo*** L. (Cucurbitaceae): San Juan County: B-Square Ranch. Small pond on the west-southwest side of Bolack Lake. Ca. 1/3 mile west of pond. T29N, R13W, S24 NW/SW. 20 August 1999. K. Heil 13767 (SJNM).
- Astragalus calycosus*** Torr. ex Wats. var. *calycosus* (Fabaceae): San Juan County: Chaco Culture National Historic Park. Chacra Mesa. Scattered pinyon & juniper. Cliffhouse sandstone. 31 May 1993. T21N, R10W, S26. 6260 ft. Lisa Floyd-Hanna 7 (SJNM).
- Astragalus cicer*** L. (Fabaceae): San Juan County: Navajo Nation: State Highway 371, ca 2 mi south of the Burnham turnoff. Roadside weed. 12 June 2000. 36°20'47"N 108°14'51"W. 7371 ft. K. Heil, S.L. O'Kane, Jr. & A. Clifford 14796 (SJNM).
- Lathyrus pauciflorus*** Fern. Var. *utahensis* (M.E. Jones) R. Davis (Fabaceae): McKinley County: Navajo Nation, County Road 19, ca. 4.5 air miles from Borrego Pass. Steep slopes and ledges of the Mancos Formation. 28 June 2000. 35°34'39"N 107°55'48"W. 2200 m. K. Heil & W. Miett 14908 (SJNM).
- Lupinus lepidus*** Dougl. var. *utahensis* (Wats.) C.L. Hitchc. (Fabaceae): San Juan County; Navajo Nation; Chuska Mountains; Toadlena Lake margin; 3.0 miles west of Toadlena community; bluegrass, sedge, spike rush, silverweed and other herbaceous forbs community; dark silty clay to silty solis plus platy Chuska Sandstone fragments; T23N, R20W, Sec. 11; 9100 ft.; July 20, 2001. Arnold Clifford 01-865 (SJNM).
- Swertia albomarginata*** (Wats.) Kuntze (Gentianaceae): San Juan County: Navajo Nation, Beclahbito area; ca. 2 miles north of Foutz Peak and 1.5 miles east of the Arizona State Line. Silty-clay soils on Dakota Sandstone. Pinyon-juniper Community. 9 June 1993. T31N, R21W, S25 SW ¼. Arnold Clifford 93-46 (SJNM).
- Triglochin concinna*** Davy var. *debilis* (Jones) J.T. Howell (Juncaginaceae): San Juan County; Navajo Nation; Toadlena area. 1.5 miles south west of Two Grey Hills Trading Post; large alkaline seep south of Captain Tom Wash drainage; wide, moist cieгна with minor saturated channels; wire rush sedge, arrow grass, Parish's alkali grass community; 6000 ft. 04 June 2000. Arnold Clifford 00-383 (SJNM).
- Linum subteres*** (Trel.) Winkler (Linaceae): San Juan County: Navajo Nation, ca. .5 mile north of the Chaco River along the Transwestern Gas Pipeline. Sand dunes; T34S, R22E, S27 SW ¼. 5700 feet; 11 October, 1997. K. Heil 11671 (SJNM).
- Abronia nana*** S. Wats. var. *harrisii* Welsh (Nyctaginaceae): San Juan County: Navajo Nation, Toadlena area ca. 8 mi. NE of Toadlena School on dirt road leading to Sanostee. Ca. .5 mi west of the Tsin-nas-kid anticline. Clayey-gypsiferous soils of the Mancos Formation. T24N, R19W, S20 SW ¼. 5800 ft. 6 April 1995. Arnold Clifford 95-14 (SJNM).
- Fraxinus pensylvanica*** Marshall (Oleaceae): San Juan County. Farmington; Riverine project area. Near the upper foot bridge along the Animas River in the Bird Hollow vicinity. Escape; T29N, R13W, S13 & 14; 5400 ft. 16 Sep 1996. K. Heil 10658 (SJNM).
- Camissonia parvula*** (Nutt.) Raven (Onagraceae): San Juan County: Navajo Nation, Navajo Agricultural Products Incorp land. Desert Grassland Community; T27N, R4W, S15 NW ¼. 6180 ft. 29 April 1992. Rich Fleming 1160 (SJNM).

(Continued on page 4, San Juan Basin)



(San Juan Basin, Continued from page 3)

Camissonia walkeri (A. Nels.) Raven (Onagraceae): San Juan County: Navajo Nation, ca. 1 mi. west of Red Wash and ca. 2 mi southwest of the San Juan River. Desert Scrub Community; Black Mancos Shale. T31N, R20W, S27. 23 May 1995. A. Clifford 95-240 (SJNM).

Epilobium palustre L. (Onagraceae): San Juan Co., Navajo Nation, ca. 4.5 miles west of Sanostee, un-named canyon in the upper Chinle Formation, 7126 ft, N36°23'08" W109°01'21", 5 Sep 2002, K. Heil & A. Clifford 20556 (SJNM).

Oenothera caespitosa Nutt. var. *caespitosa* (Onagraceae): San Juan County: Farmington; B-Square Ranch. Along the road above Head Canyon. Scattered Utah juniper and desert scrub. T28N, R13W, S15 NE/SE. 6040 ft. 24 May 1999, K. Heil 12998 (SJNM).

Orobanche corymbosa (Rydb.) Ferris (Orobanchaceae): San Juan County: Navajo Nation, ca. .5 mi. southeast of Lake Valley Chapter House. Sandy soil; 6020 ft. 5 Sep 1982. K. Heil 1514 (SJNM).

Aliciella triodon (Eastw.) Brand (Polemoniaceae): San Juan County. Navajo Nation: Beclabito area. Ca. .5 mi south of Highway 504; first gray wash; along the south-facing slope. Slickrock type habitat with shallow, poorly developed soils, near the outcrop. Dakota sandstone. T30N, R20W. 21 May 1995. Arnold Clifford 95-213 (SJNM)

Gilia capitata Sims (Polemoniaceae): San Juan County: Farmington, Lions Wilderness Park. Ca .5 mi northeast of San Juan College. 5600 ft. Arkosic Sandstone (Ojo Alamo Formation). Pinyon Juniper Woodland Comm. T30N; R13W; S 36 NW1/4. 27 June 1992. Tina Sawyer 79 (SJNM).

Gilia ophthalmoides Brand (Polemoniaceae): McKinley County: Navajo Nation, north of Crevasse Canyon on road to the Chuska Mountains. Large slab of sandstone with stunted trees. Rocky Mountain juniper, pinyon pine, and ponderosa pine. 35°51'37"N 108°53'49"W. 7400 ft. 16 May 2001. K. Heil & J.M. Porter 16097 (SJNM).

Ipomopsis aggregata (Pursh) Grant subsp. *aggregata* (Polemoniaceae): San Juan County: Navajo Nation, 1 mile east of Road 7170 on road to Sanostee. South side of road. 36°19'48"N 108°59'14"W. 8532 ft. 8 August 2000. K. Heil & W. Mietty 15323 (SJNM).

Eriogonum clavellatum Small (Polygonaceae): San Juan County; Navajo Nation; Red Wash drainage valley; about 4.5 miles southeast of Beclabito Chapter and 2.0 miles south of Red Wash bridge; plants growing in platy gravels, joint fractures and talus on minor eastward dipping cuesta ridges on exposed weathered early Upper Cretaceous lower member of Mancos Shale. A white to grayish-white shaley unit. Sparsely vegetated habitat with shadscale, mat saltbush and galleta; 5100 ft.; Sept. 21, 2002. Arnold Clifford 02-385 (SJNM).

Rosa manca Greene (Rosaceae): San Juan Co., Navajo Nation, ca. 4.5 miles west of Sanostee, un-named canyon in

the upper Chinle Formation, 7145 ft, N36°23'12" W109°01'10", 5 Sep 2002, K. Heil & A. Clifford 20561 (SJNM).

Rosa multiflora Thunb. (Rosaceae): San Juan County: Farmington. Berg Park area, along the Animas River. Escape; T29N, R13W, S13 & 14. 5400 ft; 27 May 1996. K. Heil 9716 (SJNM).

Castilleja scabrida Eastw. (Scrophulariaceae): San Juan County: Navajo Nation, ca. 5 miles northeast of Toadlena. Ca. .25 mi south of windmill on Tsin-nas-kid Mesa. Slic-rock of Dakota sandstone. T24N, R19W, S21 SW ¼. 2000 m. 29 April 1995. K. Heil & A. Clifford 8742 (SJNM).

Mimulus eastwoodiae Rydb. (Scrophulariaceae): San Juan County, Navajo Nation. Four wheel drive road between Beclabito and Oak Springs. Ca. 2 miles south of Beclabito where road crosses Cottonwood Canyon and ca. .75 miles west. Collection along a tributary canyon northwest of road. Alcove in the Wingate Formation. Elev. 5822. N36 degrees 46' 22" W109 degrees 02' 32". 24 Sep 2002. K. Heil & A. Clifford 20900 (SJNM).


Penstemon barbatus (Cav.) Roth x *P. comarrhenus* A. Gray (Scrophulariaceae): San Juan Co., Navajo Nation. Eastern slope of the Chuska Mountains on road west of Toadlena. Scattered ponderosa pine. 2325 m; N36 degrees 14'29" W108 degrees 55' 6" 28 June 2001. S. O'Kane, K. Heil, A. Clifford, & W. Mietty 5646 (SJNM).

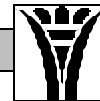
Penstemon eatonii Gray subsp. *eatonii* (Scrophulariaceae): San Juan County: Navajo Nation, Beautiful Mountain northwest of Sanostee. West side of mountain. Lower pinyon-juniper community. Rocky and clay soils. S0676716E 4043299E. 6500 ft. K. Heil & A. Clifford 14546 (SJNM).

Penstemon pachyphyllus Gray ex Rydb. (Scrophulariaceae): San Juan County; Navajo Nation; Beclabito Spring Wash drainage; 0.25 mile east of Beclabito Day School; Growing along the side banks on rocky alluvial deposited boulders; Juniper with big sagebrush, cliffrose, hoary goldenaster, saltcedar and galleta; 5690 ft.; May 18, 1994. Arnold Clifford 94-10 (SJNM).

Penstemon rostriflorus Kellogg (Scrophulariaceae): San Juan County: Navajo Indian Reservation, T30N, R21W, Beclabito area; found ca 150 ft. west of water trough and just south of the Day School. On the foot slopes of the southern wash wall; on talus. Salt Wash member of the Morrison Formation. Juniper and pseudo-riparian community. 23 June 1993. A. Clifford #93-65 (SJNM).

Solanum dulcamara L. (Solanaceae): San Juan County: Farmington; B-Square Ranch. Collected along irrigation ditch ca. ¼ mile north of the San Juan River and ca. 1 mile west of the old Animas Bridge. 36°42'27"N 108°11'36"W. 28 Sep 1999. K. Heil 14342 (SJNM).

Viola rydbergii Greene (Violaceae): Rio Arriba County: Salso Gomez Ranch. Chromo Mountain, ca. ¼ mi from ranch house on the north side of the mountain. Aspen and white-fir. 36°58'24"N 106°44'26"W. 8565 ft. 9 Sep 2000. K. Heil & W. Mietty 15644 (SJNM). 



Bernardia (Euphorbiaceae) in New Mexico

Kelly W. Allred

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

There are two euphorbiaceous shrubs in New Mexico: *Croton fruticosus*, with large leaves (3-7 cm long) densely covered with stellate hairs and with entire to obscurely toothed margins, and a species of *Bernardia*, with smaller leaves (1-2 cm long) sparsely stellate pubescent and with prominently or coarsely toothed margins. It is the identity of the latter species that attracts our attention here.

All works that comment in some way on *Bernardia* in New Mexico (Carter 1997; Correll & Johnston 1970; Henrickson & Johnston 1997; Kartesz 1999; Martin & Hutchins 1981; Powell 1988; Tidestrom & Kittell 1941; Vines 1960; Wooton & Standley 1915) agree that there is but a single species of *Bernardia* in New Mexico, but do not agree on the identity of this plant. Some apply the name *B. myricifolia* (Scheele) Bentham & Hooker to our plants, others use *B. obovata* I.M. Johnston.

The two species in question can be distinguished by the following features:

Bernardia myricifolia: Leaves elliptic to oblong, prominently reticulate-veined and densely stellate-hairy beneath with some hairs about 0.4-0.5 mm long, 1-5 cm long. Stamens 10-16. Fruit mostly 3-loculed, 3-seeded.

Bernardia obovata: Leaves ± obovate, not prominently reticulate-veined, only sparsely stellate-hairy beneath with most hairs 0.2-0.3 mm long, 1-2 cm long. Stamens 3-7. Fruit 2-loculed, usually 2-seeded or 1-seeded by abortion.

I examined all *Bernardia* from the state's major herbaria (NMC, NMCR, and UNM, a total of 13 specimens; there were no New Mexico *Bernardia* at SJNM or WNM). All specimens clearly belonged to a single species and fit the description of *Bernardia obovata* as given above. This conclusion agrees with previous determinations by David Bleakly and Barron Rector, who examined the UNM specimens in 1993 and 1974, respectively.

Bernardia obovata is known in New Mexico only from Doña Ana County (San Andres and Robledo Mountains) and Eddy County (Guadalupe Mountains). In Doña Ana County, nearly all the collections are from Ash Canyon and Ropes Spring in the San Andres Mountains, commonly visited sites for the last 100 years or more. Plants are found on rocky limestone slopes at elevations of about 3800-6000 feet in the foothills of our southern mountains.

Bernardia myricifolia is found in central- and south-Texas, and south into northeastern Mexico.

Acknowledgements

Many thanks to the curators and staffs of NMC, NMCR, SJNM, UNM, and WNM, who allowed me to study their specimens.

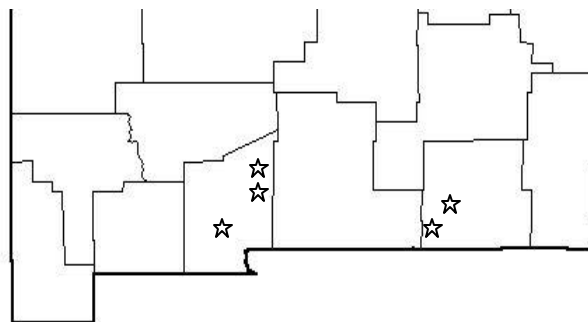
Literature Cited

Carter, J.L. 1997. Trees and Shrubs of New Mexico. Johnson Books, Boulder, Colorado. 534 pp.
Correll, D.S. & M.C. Johnston. 1970. Manuel of the Vascular Plants of Texas. Texas Research Foundation, Renner, Texas. 1881 p.

Henrickson, J. & M.C. Johnston. 1997. A Flora of the Chihuahuan Desert Region, draft version 1.2. Publ. by J. Henrickson.
Kartesz, J.T. 1999. A Synonymized Checklist and Atlas with Biological Attributes for the Vascular Flora of the United States, Canada, and Greenland. First Edition. In: Kartesz, J.T., and C.A. Meacham. Synthesis of the North American Flora, Version 1.0. North Carolina Botanical Garden, Chapel Hill, NC.
Martin, W.C. & C.R. Hutchins. 1981. A Flora of New Mexico. Vol. 2. J. Cramer, Germany.
Powell, A.M. 1988. Trees & Shrubs of Trans-Pecos Texas. Big Bend Natural History Association. 536 p.
Tidestrom, I. & T. Kittell. 1941. A Flora of Arizona and New Mexico. The Catholic University of America Press, Washington, D.C. 897 pp.
Vines, R.A. 1960. Trees, Shrubs and Woody Vines of the Southwest. University of Texas Press, Austin. 1104 p.
Wooton, E.O. & P.C. Standley. 1915. Flora of New Mexico. Contr. U.S. Natl. Herb. 19:1-794.

Specimens Examined

Doña Ana County: San Andres Mts, Ropes Spring, limestone, 5680 ft, 5 Nov 1992, L. McIntosh 2519 (NMC); north end of San Andres Mts, west slope, San Andres Canyon, San Andres Spring, limestone, 1555 m, 26 Sep 1989, H. Herman 111 (NMC); Robledo Mts, hillcrest, limestone, near Picacho Peak, Aug 1978, G. Sopyn s.n. (NMC); White Sands Missile Range, south end of San Andres Mts, Bear Canyon, limestone, 1515 m, 27 Aug 1990, R. Spellenberg & R. Brozka 10533 (NMC); San Andres Mts, Ropes Spring, upper bajadas surrounding spring, 5600 ft, 17 Sep 1999, K.W. Allred 7685 (NMCR); San Andres Mts, Ropes Spring, limestone hills around lodge area, 25 Apr 1985, K.W. Allred 2887 (NMCR); White Sands Missile Range, San Andres Mts, Bear Canyon, 4680 ft, 12 Apr 1993, K.W. Allred & D.L. Anderson 6238 (NMCR); San Andres Mts, Ropes Spring, 21 Aug 1950, R.J. Fleetwood 7038 (UNM); San Andres Mts, ca. 21/2 miles south of Ash Canyon, 24 May 1952, D.B. Dunn 8021 (UNM); San Andres Mts, Ropes Spring, 22 Oct 1975, J. Von Loh 617 (UNM); San Andres Mts, Ash Canyon, 12 Aug 1975, J. Von Loh 507 (UNM).
Eddy County: Guadalupe Mts, along hwy 137, 7 miles west of junction with hwy 285, Shafer Canyon, 3800 ft, 6 Jul 1982, K.W. Allred 2217 (NMCR); Queen, 5900 ft, 2 Aug 1909, [no collector] (NMC).



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

— L. innaeus



Botanical Literature of Interest

Taxonomy and Floristics

- Linnaean hierarchy Symposium. Taxon 51(1):5-43
Atwood, N.D. & S.L. Welsh. 2002. **A new species of *Abronia* (Nyctaginaceae) from San Juan county, New Mexico, U.S.A.** Novon 12(2): 167-169. [*Abronia bolackii*]
Binns, S.E., B.R. Baum, & J.T. Arnason. 2002. **A taxonomic revision of *Echinacea* (Asteraceae: Heliantheae).** Syst. Bot. 27(3):610-632.
Coleman, R.A. 2002. **The Wild Orchids of Arizona and New Mexico.** Cornell University Press, Ithaca, NY. 248 p.
Dorn, R.D. 2002. **Noteworthy Collections, Colorado and New Mexico. Madroño 49(1):54.** [*Salix wolfii*]
Egan, R.S. 2002. **Revised catalog of the lichens and lichenicolous fungi of New Mexico.** Evansia 19(2):41-68.
Freckmann, R.W. & M.G. Lelong. 2002. **Nomenclatural changes and innovations in *Panicum* and *Dichanthelium* (Poaceae: Paniceae).** Sida 20(1):161-174.
Hansen, C.J., L. Allphin, M.D. Windham. 2002. **Biosystematic analysis of the *Thelesperma subnudum* complex (Asteraceae).** Sida 20(1):71-96.
Hochstatter, F. 2000. ***Yucca* I (Agavaceae). (Dehiscent-Fruited Species) in the Southwest and Midwest of the USA and Canada with Seed Morphology by Dr. Gunter Hentzschel. English translation by Chris Holland.** ISBN 3-00-005946-6.
Judd, W.S., C.S. Campbell, E.A. Kellogg, P.I.F. Stevens, & M.J. Donoghue. 2002. **Plant Systematics: A Phylogenetic Approach.** 2nd ed. Sinauer Associates Inc., Sunderland, MA 01375 [\$86]
Kirkpatrick, Z.M. 1992. **Wildflowers of the Western Plains.** University of Texas Press, Austin. [includes the eastern plains of NM]

Morton, J.K. 2002. **Documented chromosome numbers 2002:2. Chromosome numbers in North American species of *Cerastium* (Caryophyllaceae).** Sida 20(1):227-231. [includes several NM localities]

Smith, Una R. 2001. **Revision of the Cretaceous fossil genus *Palaeoaster* (Papaveraceae) and clarification of pertinent species of *Eriocaulon*, *Palaeoaster*, and *Sterculiocarpus*.** Novon 11:258-260.

Spellenberg, R. 2002. ***Boerhavia coulteri* var. *palmeri*, a new varietal combination for *Boerhavia* (Nyctaginaceae) of southwestern North America.** Sida 20(1):151-155. [includes a key to the spicate taxa of *Boerhavia*]

Miscellaneous

Blunt, W. 2001. **Linnaeus: The Compleat Naturalist.** Princeton University Press.

Committee on the Scientific Basis for Predicting the Invasive Potential of Nonindigenous Plants and Plant Pests in the United States, National Research Council. 2002. **Predicting Invasions of Nonindigenous Plants and Plant Pests.** National Academy Press, Washington, D.C. 198 pp.

Fischer, D.L. 2001. **Early Southwest Ornithologists, 1528-1900.** University of Arizona Press. 271 pp. [An ornithological account "suffused with botany."]

Spamer, E.E. & R.M. McCourt. 2002. **The Lewis & Clark Herbarium.** Special publication #19, The Academy of Natural Sciences of Philadelphia. Also available at <www.acnatsci.org/library/scipubs/index.html>.

Tellman, B. (ed.). 2002. **Invasive Exotic Species in the Sonoran Region.** University of Arizona Press, Tucson. 460 pp.



What's In A Name?

Botany from A to Z: Can you name a genus of plants found in New Mexico for every letter of the alphabet? The list begins with *Abies* and ends with *Zygophyllum*. The letter with the most names seems to be C, with 120 genera (or thereabouts) beginning with this letter. The fewest are Q and Y, represented by *Quercus* and *Quincula*, *Yabea* and *Yucca*. The shortest names are *Iva*, *Poa*, and *Zea*. The longest name is *Krascheninnikovia*, which might also be the hardest to spell. What does all this mean? Simply that someone has too much time on his hands and we're in desperate need for some of you to contribute articles or material to this newsletter!



Notices

- Botany 2003: 27-31 July, Mobile, Alabama
- Botany 2004: 1-5 August, Snowbird, Utah



Looking Back in the Month of — October

- Oct 1-10, 1900: First International Botanical Congress held in Paris.
- Oct 2, 1836: Darwin returns to England after spending 5 years aboard the Beagle.
- Oct 15, 1998: Julian Steyermark (Flora of Missouri) dies at age 79; listed by Guinness Book of Records as the champion plant collector.

[from "An Almanac of Botanical Trivia" by R.A. Howard]





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 (*).

— Bob Sivinski [P.O. Box 1948, Santa Fe, NM 87504]

Rotala ramosior (Linnaeus) Koehne (Lythraceae): Hidalgo County, Peloncillo Mountains, T31S R21W Sec 31 SE/4, 5,600 ft, around drying margin of intermittent pond, 9 Sep 1983, W.H. Moir s.n. (UNM).

— Jim McGrath [20 Robin Court, Edgewood, NM 87015-7908]

Carex illota L.H. Bailey (Cyperaceae): Taos County, Latir Lakes, from seep adjacent to the outflow stream below the uppermost lake, at timberline, 11,900 ft, 13 Aug 2001, J. McGrath 350 (MICH, UNM). [det. A. Reznicek]

Lindernia dubia (Linnaeus) Pennell var. ***dubia*** (Scrophulariaceae): Rio Arriba Co., on a gravel bar in Rio Grande 1-2 mi NE of Velarde, Sec 34 T23N R9E, UTM: 0411875E 4004972N, 1800 m (5900 ft), growing w/ *Eleocharis*, *Sagittaria*, *Gnaphalium palustre*, and *Veronica anagallis-aquatica*, 18 June 2002, J. McGrath 385 (UNM). [det. T. Lowrey]

— Robert D. Dorn [see Dorn 2002, Bot. Lit. Interest]

Salix wolfii Bebb var. ***wolfii*** (Salicaceae): Rio Arriba County, meadow along Osier Creek ca. 1.2 km southwest of confluence with Rio de los Piños, 2925 m, 36°59.6'N 106°20.6'W, 5 July 2001, Dorn 8847 (MO, NMC, RM, UNM).

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

Chamaesyce hirta (Linnaeus) Millspaugh (Euphorbiaceae): Hidalgo County, Peloncillo Mts, Guadalupe Canyon, T34S R22W Sec 14, in moist shaded spots along creek, with

Platanus, *Fraxinus*, 5000 ft, 29 Aug 1986, K.W. Allred 4275 (NMC). [det. V. Steinmann]


Talinum parvulum Rose & Standley (Portulacaceae): Hidalgo County, Peloncillo Mts, Coronado National Forest, vicinity of Maverick Spring along Cloverdale Creek, T33S R2W Sec 6, with *Platanus*, *Juniperus*, *Toxicodendron*, 17 Jul 1991, K.W. Allred 5568 (NMCR).

— Richard Spellenberg [see Spellenberg 2002, Bot. Lit. Interest]

Boerhavia spicata Choisy var. ***palmeri*** (S. Watson) Spellenberg (Nyctaginaceae): Doña Ana Co., mesa west of Organ Mts, 4000 ft, 5 Oct 1907, E.O. Wooton & P.C. Standley (LL, TEX, US).

— Jonathan Coop [Department of Botany, University of Wisconsin - Madison, Birge Hall 430 Lincoln Dr., Madison, WI 53706]

Carex phaeocephala Piper (Cyperaceae): Colfax County, Carson National Forest, Valle Vidal Unit, east slope of Little Costilla Peak, N 36°49.590' W 105°13.341', lower alpine slopes, associated with *Festuca thurberi*, *Juncus drummondii*, *Carex ebenea*, 12108 ft, 3 Aug 2002, J.D. Coop 637, 639 (WIS).

Sphagnum fimbriatum Wils. (Sphagnaceae): Sandoval Co., Valles Caldera National Preserve, Alamo Bog, N35°54.879' W106°38.220', open wetland fed by cold acidic springs associated with sulfuric fumaroles, associated species of vascular plants include *Betula glandulosa*, *Carex aquatilis*, *C. canescens*, *C. utriculata*, *Deschampsia caespitosa*, *Picea pungens*, 8700 ft, 18 July 2002, J.D. Coop 585 (WIS). [det. J. Shaw] 



Publication and Subscription Information

"The New Mexico Botanist" is published irregularly (as information accrues) at no charge. You may be placed on the mailing list by sending your name and complete mailing address to the editor:

Kelly Allred
The New Mexico Botanist
MSC Box 3-1
New Mexico State University
Las Cruces, NM 88003
or
Email: kallred@nmsu.edu

All subscribers will be included in the "Directory of New Mexico Botanists."

Available on-line at <http://web.nmsu.edu/~kallred/herbweb/>

Kelly Allred



*The New Mexico
Botanist*

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

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300