The genus *Allium* is distributed throughout the state of New Mexico and represented by thirteen distinct taxa. Most are widespread species, but several are rare here or reach a distribution limit just inside the New Mexico borders. Marion Ownbey produced comprehensive studies of the genus *Allium* for the adjacent states of Arizona and Texas (1947, 1950 respectively). In his Arizona study, Ownbey (1947) says the species are well marked and "No careful student should experience difficulty in determining them easily and accurately". Yet my recent review of the same species in New Mexican herbaria found an unusually high percentage of inaccurate specimen determinations. Therefore, the following taxonomic key and checklist annotations are offered as aids for identification of New Mexican wild onions. Complete species descriptions are not reiterated here and can be found in the above Ownbey references.

Three *Allium* species are added since the publication of the most recent state flora (Martin and Hutchins, 1980). In addition, the county distributions and some of the names used by Martin and Hutchins (1980) are corrected. A verified, representative specimen from herbarium collections at the University of New Mexico (UNM), New Mexico State University (NMC), or Southwestern New Mexico University (SNM) is cited for each county occurrence. Synonymy is only listed for those names that differ from the present treatment, but were accepted by Wooton and Standley (1913), Ownbey (1947, 1950), or Martin and Hutchins (1980).

KEY AND CHECKLIST OF *ALLIUM* IN NEW MEXICO

1 Outer bulb coat persisting as a conspicuous reticulum of coarse, anastomosing fibers; rhizomes lacking
2 Bracts of the involucre 2- to 5-nerved (occasionally coalescent into what appears to be a single wide nerve in *A. macropetalum*)
   3 Ovary conspicuously crested with 3 pairs of short, flat projections; leaves usually 2 per scape; a desert and plains species of western and central NM ............................................ *A. macropetalum*
   3 Ovary crestless; leaves usually 3 per scape; a desert and plains species of eastern NM ................
   ........................................................................................................................................
   ........................................................................................................................................
2 Bracts of involucre mostly 1-nerved
4 Perianth spreading-rotate; epidermal cells of inner bulb coats (under outer reticulum) intricately contorted; portions of outer bulb coat fused into irregular, solid pieces except along the ragged top and bottom edges of the bulb; common on hills and plains of southeastern NM .... *A. drummondii*
4 Perianth urceolate; epidermal cells of the innermost bulb coats rectangular and vertically elongate; entire outer bulb coat a reticulate fabric of coarse fibers with open interstices
5 Leaves usually 2 per scape; spring flowering; rare in northwestern and northeastern NM ........
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   .........................................................................................................................................
5 Leaves usually 3 or more per scape; summer flowering; widespread
6 Umbel wholly floriferous; flowers fertile; widespread in most NM mountain ranges ........
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(Continued on page 2, Allium)
6 Most of the flowers replaced by bulbils; remaining flowers sterile; scattered in several western and northern NM mountain ranges .......................... A. geyeri var. tenerum

1 Outer bulb coat without fibers or with parallel fibers, never fibrous reticulate; with or without rhizomes

7 Bulbs attached to stout, dark, Iris-like rhizomes; leaves flat, strap-shaped, 5-10 mm wide; mountains in western and south-central NM................................................. A. gooddingii

7 Bulbs with or without rhizomes, if rhizomes present, then slender and pale; leaves linear-channeled or broadly U-shaped in cross section, usually <5 mm wide, (occasionally flat and >5 mm wide in A. cernuum)

8 Umbel nodding from a curved bend in the scape below the involucral bracts; tepals obtuse; stamens exerted from corolla; in all NM mountain ranges and on northeastern plains ................................................................. A.cernuum

8 Umbel erect; perianth segments acute or acuminate; stamens shorter than the perianth segments

9 Inner whorl of perianth segments long acuminate with recurved tips, margins minutely serrulate-dentate; outer segments similar, but conspicuously broader and usually entire; outer bulb coat cells relatively square with thick walls (waffle-like); rare in western NM .............. A. acuminatum

9 Inner and outer whorls of perianth segments entire and not conspicuously wider or narrower; other characters never combined as above

10 Ovary and capsule conspicuously crested

11 Scape usually <10 cm tall; perianth 8-14 mm long; lacking rhizomes; outer bulb coats dark brown, cells elongating vertically; a desert species of southwestern NM ........................................... A. bigelovii

11 Scape taller (10-30 cm); perianth segments 6-10 mm long; proliferating from slender rhizomes at the base of the bulb; outer bulb coats grayish, cells elongating horizontally; rare in the mountains of western NM ........................................... A. bisceptrum

10 Ovary and capsule not crested

12 Bulb subspherical, often (not always) proliferating from the base by slender, scaled rhizomes; corolla campanulate-spreading; tepals white (often dry ing pinkish) with a dark red-purple midrib on outer surface; anthers red-purple (drying brown); igneous ridges and canyons in southwestern NM ........................................... A. rhizomaturn

12 Bulb ovoid, without rhizomes; corolla spreading-rotate; tepals white to pale pink (drying pink); outer midrib absent or vague; anthers yellow; calcareous ridges and canyons in southern NM ...... A. kunthii


A common species of the western U.S. that barely enters the New Mexico borders from southwestern Colorado and eastern Arizona. It occurs on relatively arid soils at elevations up to piñon-juniper woodland. This small onion is readily distinguished by its bright reddish-purple flowers with minutely serrulate petals (use a hand lens) that spread outward at the tips and are narrower than the outer perianth whorl. The small, smooth bulb is spherical and the outer bulb coat cells are nearly square with thick walls (like a waffle pattern). Its leaves are withered by the time the plant is in full flower.

REPRESENTATIVE SPECIMENS: Hidalgo Co.: Black Mountain, 5 miles NE of Virden, 6 Apr 1986, R. Spellenberg et al. 8409 (NMC); Rio Arriba Co.: Turkey Creek, Carson National Forest, 27 May 1987, P. Knight 3501 (UNM); San Juan Co.: Middle Mesa near Navajo Reservoir, 14 May 1992, Sivinski 1851 (UNM).

ALLIUM BIGELOVII S. Watson, King U.S. Geol. Expl. 40th Par. 5:487. 1871.

Although short in stature, this spring-flowering, desert species produces large, colorful umbels that are worthy of cultivation. Live plants have a distinctive corolla coloration (inner perianth segments white to pale pink with red tips and outer segments white to pale pink with red midribs) that cannot be confused with any other New Mexican Allium. Dried specimens of A. bigelovii, however, can be faded or have red tips and midribs on all tepals. Other species can also dry with red-tipped tepals. It can only be confused with A. bisceptrum, which is easily distinguished by its slender rhizomes, horizontally elongate bulb coat cells, and taller scape. The bulb coat cells of A. bigelovii are often elongated vertically and many of the squarish cells have contorted (zig-zagged) cell walls. Allium bigelovii is occasionally abundant in igneous, gravelly soils on the foot-slopes of desert mountains and hills in southwestern New Mexico and adjacent Arizona.

REPRESENTATIVE SPECIMENS: Doña Ana Co.: Sierra de las Uvas, 13 Apr 1985, T. Todson 8507-1 (NMC); Grant Co.: near Faywood Hot Spring, 20 Apr 1993, Sivinski 2080 (UNM); Luna Co.: east foot-slope of Florida Mts., 10 Apr 1991, Sivinski 1631 (UNM).

ALLIUM BISCEPTRUM S. Watson, King U.S. Geol. Expl. 40th Par. 5:351. 1871

Allium palmeri S. Watson, King U.S. Geol. Expl. 40th Par. 5:487. 1871.


This wild onion is very rare here, having been seen only a few times in the Zuni Mountains of west-central New Mexico and once in the southwest corner of the state near the Mexico border. It has ovary crests like A. bigelovii, but its slender rhizomes, horizontally elongate bulb coat cells, and taller scape readily distinguish it from that species. The flowers of A. bisceptrum are also smaller and evenly colored pink-lavender when fresh. However, dried specimens may have pink-tipped tepals like A. bigelovii and often lack rhizomes, if the plant was not carefully collected.

The palmeri form of this plant has been distinguished from bisceptrum by possessing rhizomes and a tetraploid level of chromosomes. The two taxa, however, cannot be consistently distinguished and only bisceptrum will be accepted for the up-coming Flora of North America treatment (Dale McNeal, Univ. of the Pacific, pers. comm.).

REPRESENTATIVE SPECIMENS: Cibola Co.: Cebolla Creek, Zuni Mts., 13 Jun 1981, A. McCullam 1096 (UNM); Hidalgo Co.: San Luis Pass, 13 May 1955, E. Castetter 7586 (UNM); McKinley Co.: Nutria Canyon, Zuni Mts., 3

(Continued on page 3, Allium)

Allium cernum var. neomexicanum (Rydberg) Macbride, Gray Herb. Contrib. N.S., No. 56, p. 5. 1918.

Allium cernum var. obtusum Cockerell ex Macbride, Gray Herb. Contrib. N.S., No. 56, p. 5. 1918.


This is the most common wild onion in New Mexico, occurring in all of our mountain ranges. Its nodding umbel, and exserted stamens make it the easiest to accurately identify. Usually, it is a montane forest species, but also occasionally is found at lower elevations in piñon-juniper woodland or the high prairies in the northeastern part of the state.

Although unique, this is a very variable species. Two weak, geographically overlapping varieties have been recognized in New Mexico (Martin and Hutchins 1980). Allium cernum var. neomexicanum (Rydberg) Macbride supposedly is distinguish by thin, nearly flat leaves which are broader than the narrow, thick, channeled leaves of Allium cernum var. obtusum Cockerell ex Macbride. Also the inner bulb coats of var. obtusum are supposed to be redder than the white to pale pink bulb coats of var. neomexicanum. However, the leaf characteristics grade into one another and are not reliably diagnostic. White or dark pink bulb coats can be found on adjacent plants within the same population and on most leaf forms. These infraspecific distinctions for Allium cernum are not made here because they overlap and are indistinguishable in much of New Mexico.

REPRESENTATIVE SPECIMENS: Bernalillo Co.: Tree Springs, Sandia Mts., 7 Sep 1965, C. Bronson 7 (UNM); Catron Co.: Madre Mt., Datil Range, 23 Jul 1957, E. Flechty 40 (UNM); Cibola Co.: Zuni Canyon, Zuni Mts., 10 Aug 1968, N. Ripple 596 (UNM); Colfax Co.: Johnson Mesa, 28 Aug 1967, C. Jones 92 (UNM); Doña Ana Co.: Organ Mts., 17 Sep 1893, E. Wooton s.n. (NMC); Eddy Co.: Gunsight Canyon, Guadalupe Mts., 15 Sep 1982, P. Knight 2360 (UNM); Grant Co.: east of Santa Rita in Black Range, 16 Aug 1942, O. Clark 10512 (UNM); Harding Co.: Mills Canyon, 19 Sep 1994, Sivinski & Lowrey 2879 (UNM); Hidalgo Co.: upper Indian Creek, Animas Mts., 13 Sep 1975, W. Wagner 1557 (UNM); Lincoln Co.: North Fork Eagle Creek, White Mts., 22 Jul 1981, D. Ward 81-423 (NMC; Cytological Voucher n=7); Los Alamos Co.: Water Canyon, Jemez Mts., 2 Aug 1978, Tierney & Fox 22 (UNM); McKinley Co.: south of Fort Wingate Village, Zuni Mts., 13 Aug 1981, Ward & Spellenberg 81-493 (NMC; Cytological Voucher n=7); Mora Co.: Las Feberas Canyon near Ocate, 15 Jul 1976, J. Calvert 73 (UNM); Otero Co.: NW of Mayhill, 13 Aug 1949, Gordon & Norris 575 (UNM); Rio Arriba Co.: Navajo Canyon SW of Canjilon, 13 Aug 1963, K. Goodrow 497 (UNM); Sandoval Co.: North Sandia Peak, 7 Aug 1995, Sivinski 3171 (UNM); San Miguel Co.: Los Trigo Canyon near Pecos, 21 Jul 1993, Sivinski 2493 (UNM); Santa Fe Co.: Upper Glorieta Creek, 14 Jul 1993, Sivinski 2395 (UNM); Sierra Co.: Kingston, 13 Sep 1904, O. Metcalfe 1370 (NMC, UNM); Socorro Co.: 1 mile west of Trinity Crater, 28 Aug 1948, D. Dunn 4647 (UNM); Taos Co.: Honda Canyon, Sangre de Cristo Mts., 12 Aug 1967, H. Mackay 6T-34 (UNM); Torrance Co.: Trigo Canyon, Manzano Mts., 2 Sep 1963, E. Belker 1546 (UNM); Union Co.: Sierra Grande near Des Moines, 3 Sep 1963, E. Castetter 20105 (UNM).


This wild onion is fairly common in the hills and plains of southeastern New Mexico from piñon-juniper woodland down to Chihuahuan Desert grasslands. It is distinctive among the New Mexican species with fibrous outer bulb coats. Portions of its light reddish-brown outer coat are fused into solid pieces that have no openings between fibers except at the ragged edges around the top and bottom of the bulb. The other fibrous-coated species have an outer bulb coat fabric with open interstices between the fibers. The contorted bends and turns of the epidermal cell walls on the inner bulb coats of Allium drummondii is a unique diagnostic feature. However, this feature has limited value since the innermost epidermal layers are difficult to find on dried specimens without damaging the outer bulb coat. The most obvious characteristics of Allium drummondii are its unique outer bulb coat and spreading-rotate corolla.

In the field, Allium drummondii is also distinguishable by inflorescence characteristics from other spring-flowering species in that region of the state. The narrowly urceolate flowers of Allium per dulce sharply contrast with the campanulate to spreading corolla of Allium drummondii. Allium macropetalum is easily differentiated by its multiple-nerved bracts and crested capsules, but also is not expected to occur in southeastern New Mexico.


A common species that is frequently encountered in most New Mexico mountain ranges from moist alpine meadows down to drier piñon-juniper woodlands. The lower elevation populations usually occur on unusual soils such as sandy gypsum or shale. Allium geyeri distinguishes itself from other fibrous bulb coat species by its relatively slender pedicels and absence of dark midrib on the tepals. It is highly variable in stature and its ovaries can be moderately crested to nearly crestless in fruit. The corolla is always urceolate, but varies in size and from white to bright pink.

While morphologically distinct, A. geyeri is most easily separated from other related species by its higher elevation habitats and later flowering season. All other fibrous bulb coat species in New Mexico are spring-bloomers that are in fruit by the end of May, while A. geyeri does not begin blooming until mid-June.

REPRESENTATIVE SPECIMENS: Bernalillo Co.: Sandia Mts., 8 Jul 1931, E. Castetter 2031 (UNM); Catron Co.: Salvador Spring, Mangus Mts., 14 Jul 1991, Sivinski 1745 (UNM); Cibola Co.: 4 miles south of Prewitt, 12 Jun 1997, Sivinski 3795 (UNM); Colfax Co.: Chiscoria Canyon, 27 Jun 1974, L. Higgins 8863 (NMC); Doña Ana Co.: Van Patten's, Organ Mts., 10 Sep 1899, E. Wooton s.n. (NMC); Grant Co.: Little Bear Mt., 10 Sep 1980, R. Fletcher 4942 (UNM); Lincoln Co.: Sierra Blanca Ski Area, 9 Jul 1977, S. (Continued on page 4, Allium)
Botany is the natural science that transmits the knowledge of plants.

— L. innæus
**ALLIUM MACROPETALUM**

This is the most common spring-blooming species on the desert and grassland plains of eastern New Mexico. It is distinguished from other fibrous bulb coat species by the combined characteristics of urceolate corolla, crestless ovary, multiple-nerved bracts, and usually three leaves per scape. The outer bulb coat fabric of this species is especially thick compared to other fibrous-coated onions in the state. It is also the only New Mexican wild onion with fragrant flowers, however, the sweet odor is sometimes difficult to detect. In northeastern New Mexico it is most likely to be confused with *A. textile* which is separated by its single-nerved bracts and usually fewer (2) leaves per scape. *Allium per dulce* also resembles *A. macropetalum*, but that species has ovary crests, usually two leaves per scape, and is not expected to occur in the eastern part of the state.

The variability within this species led Ownbey (1950) to describe *A. perdulce var. M. Ownbey as a Texas Trans-Pecos endemic with white or pale pink perianth and nearly odorless flowers. Variety *per dulce* is supposed to have darker pink flowers with strong hyacinth-like fragrance. The populations of *A. perdulce* in eastern New Mexico have white to pale pink tepals (drying pink or violet) with reddish midribs which could easily be placed within variety *sperryi*. The only strongly scented plants I recall were in Eddy County, but these also had white tepals. Apparently, the distribution and demarcation of varieties *per dulce* and *sperryi* needs further study and less ambiguous circum-

**ALLIUM RHIZOMATUM**

The type locality of this species is the vicinity of Gila Hot Springs. It is fairly frequent on igneous soils in the mountains of southwestern New Mexico at medium elevations with ponderosa pine forest down to piñon-juniper-oak woodlands. This wild onion blooms in the late summer and can only be confused with *A. kunthii*. The distinctions between these two species are discussed under *A. kunthii*. Ownbey (1947) assigned *A. rhizomatum (glandulosum)* to "meadows and moister habitats," but this is not always the case in New Mexico where it occasionally occupies relatively dry ridges and pockets of sandy soil on rock outcrops.

*Allium rhizomatum* belongs to a highly variable group of mainly Mexican plants with complex and confusing nomenclature. Hamilton Traub (1967, 1968) caused much of this confusion by naming more than a dozen new species in Mexico, and only offering vague descriptions of their delimiting characteristics and distributions. He did, however, convincingly separate *A. rhizomatum from A. glandulosum*.

There are two distinctive forms of *rhizomatum*-like onions in southwestern New Mexico. The type collection represents the common form in the Black Range/Mogollon region that has rhizomes and is relatively fewer-flowered, slender, and usually shorter. Some *A. rhizomat um* specimen sheets from this area may lack evident rhizomes because they were not carefully collected and the rhizomes were broken off in the soil. The other form is represented in Hidalgo County and has a relatively greater number of flowers per umbel, is more robust, and lacks evident rhizomes. For instance, I am unable to locate any bulbs with rhizomes from *rhizomatum*-like plants in the Animas and Peloncillo Mountains no matter how frequently and carefully I dig them up. I can find no alternate name for these Hidalgo County plants in Traub’s proliferation of epithets. T.D. Jacobson (Hunt Institute, pers. comm.) believes these are a rhizomeless form of *A. rhizomatum* that cannot be assigned a varietal name until the distribution of the rhizomeless character is studied and shown to warrant taxonomic status. Such a study would be difficult because many specimens that could have had rhizomes may lack them simply because the plants were improperly collected. If the rhizomeless form is found to be a taxonomically worthy variation, the specific epithet *rhizomatum* will prove to be an unfortunate choice.

**ALLIUM TEXTILE**

This white-flowered, spring-blooming, fibrous bulb coat species is rare in New Mexico. It barely enters the state at the northwestern and northeastern corners where it occurs with sagebrush or other arid associations. *Allium geyeri, A. macropetalum* and *A. perdulce* have often

(Continued on page 6, Allium)
What’s In A Name?

From time to time we have run in this newsletter little biographies of New Mexico botanists, such as Charles Wright (number 22), A.L. Hershey (number 23), and John Bigelow (number 26). In addition, most of us are aware of some of the more notable botanical luminaries, such as E.O. Wooton and Paul C. Standley. There remains, however, a little-known New Mexico botanist who made tremendous contributions to the knowledge of our fair state’s flora, in spite of being in the Land of Enchantment for an extremely short period of time.

Loof Lirpa was born of a Czech father (Duben Hlupák Lirpa) and a Hungarian mother (Inga Maloof) in the tiny burg of Tászladány, Hungary, about 1910. One can surmise that Lirpa’s given name derives from his mother’s family name, Maloof; perhaps it was a nickname. Political unrest and a floundering economy drove the family from Europe to the United States, where his father found employment as the delivery “boy” for a florist shop in the Bronx. It is here that Loof found his interest sparked in things botanical and biological. Family friends remember his early desires to have a garden and to collect specimens of the local flora, as well as a small obsession with sponges, which he found in the bays and estuaries near the Bronx. Details of his education and growing-up are unknown, but we find him in 1937 in the employ of a medical company, hired to search for rare plants of potential pharmaceutical value. It is presumably during this period that he spent time in Iowa cataloging their natural curiosities; the Loof Wildlife Management Area in Osceola County signals his activities there. Eventually he made his way to New Mexico, and it was while foraging along the banks of the Rio Grande for rare aquatic plants, that Lirpa came across what has come to be known as Lirpa’s spring minnow-wort. This botanical anomaly produces a single underwater flower once each year, on a single day in the spring of the year. Numerous attempts to locate it at other times have been unsuccessful, though we now know that it occurs in numerous waters throughout the state, being particularly common around Santa Fe and in the aquatic gardens at The Round House. A related species is common in France, known as Poisson d’Avril (contrary to our species, reports indicate that the French species is flowering early this year). Lirpa’s spring minnow-wort is in the Fatuaceae family, and, because of its spring-flowering, belongs to the genus Aprilis. The species discovered by Loof Lirpa carries the name, Aprilis stultis.
Botanical Literature of Interest

**Taxonomy and Floristics**


**Miscellaneous**


Cracraft, J. 2002. The seven great questions of systematic biology: An essential foundation for conservation and the sustainable use of biodiversity. Ann. Missouri Bot. Gard. 89(2):127-114. [Can’t stand the suspense? Okay, here are the questions: What is a species? How many species are there? What is the Tree of Life? What has been the history of character transformation? Where are Earth’s species distributed? How have species’ distributions changed over time? How is phylogenetic history predictive?]


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:

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

Cheers,

Kelly Allred

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