



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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THE GENUS *PLANTAGO* (PLANTAGINACEAE) IN NEW MEXICO

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PLANTAGO L. PLANTAIN, RIBGRASS

Annual or perennial, taprooted herbs; acaulescent or short-stemmed; leaves basal or crowded near the base, simple, entire or remotely dentate; inflorescence a bracteate spike on a naked scape; flowers regular, 4-merous as to sepals and petals; corolla sympetalous, scarious, often translucent, persistent; stamens 4 or 2 when present; ovary superior, biolocular; style 1, terminal; fruit a membranous, circumscissile capsule; seeds few to many, mucilaginous when wet.

A large cosmopolitan genus of approximately 250 species. Mucilage from the seeds of several species is used as a laxative under the name psyllium. Occurs in all New Mexican vegetation communities from alpine down to desert. Most of our species are easily distinguished, but variation in some annual species is extreme enough to cause problems in identification. (Classical Latin name, from *planta*, the sole of the foot.)

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Key to the *Plantago* Species in New Mexico

- 1a Plants perennial (sometimes blooming in the first year)... 2
- 1b Plants annual (sometimes robust, but not persisting)... 5
- 2a Leaves broad, the well-defined blade broadly elliptic or cordate, mostly 1.3 to 2.3 times longer than wide; seeds 18-30... *P. major*
- 2b Leaves lanceolate, oblanceolate, or narrowly spatulate, blades mostly 2.5 to 10 times longer than wide; seeds 2-4... 3
- 3a Outer 2 sepals (adjacent the bract) connate, appearing as a 2-veined, entire or notched sepal; bracts acuminate or caudate-acuminate; seeds 2... *P. lanceolata*
- 3b Sepals distinct; bracts obtuse to acute; seeds 2-4... 4
- 4a Plants conspicuously brown-fibrous woolly at the crown among the old leaf bases; spikes elongate, mostly 5-20 cm at maturity; alkaline wet places at low to moderate elevations... *P. eriopoda*
- 4b Plants sparsely and inconspicuously brown-fibrous at the crown among the old leaf bases; spikes short, mostly <5 cm long at maturity; nonalkaline wet meadows at high elevations... *P. tweedyi*

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Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.
— Linnaeus



(*Plantago*. Continued from page 1)

- 5a Sepals and bracts glabrous; seeds mostly 4-8... *P. elongata*
 5b Sepals and bracts villous or hirsute; seeds 2... 6
- 6a Bracts at base of spike not keeled; corolla lobes ovate to oblong, spreading or reflexed during and after flowering... 7
 6b Bracts at base of spike keeled; corolla lobes lanceolate, usually erect and folded together before and after flowering... 10
- 7a Corolla lobes 3.5-4 mm long; longest hairs on the upper part of the scape spreading at right angles; spikes usually 8-12 mm wide... *P. helleri*
 7b Corolla lobes about 1.5-3.4 mm long; longest hairs on the upper part of the scape ascending or appressed; spikes 4-8 mm wide... 8
- 8a Bracts linear to linear-lanceolate, as long or much longer than the sepals; plants pale yellow-green or gray-green upon drying... *P. patagonica*
 8b Bracts oblong to ovate, shorter than the sepals; plants olive brown or dark yellow-green upon drying... 9
- 9a Mature leaves acute, villous to sparsely sericeous (rarely glabrate); corolla lobes 1.5-2.5 mm long... *P. argyrea*
 9b Mature leaves obtuse or acute; glabrous or glabrate; corolla lobes 2.2-3.4 mm long... *P. wrightiana*
- 10a Outer sepals with green midvein extending beyond the scarious margins; bracts (2.2) 2.8-5.4 (5.8) mm long; seeds 1.5-3 mm long, reddish, usually with a hyline margin on at least one side... *P. rhodosperma*
 10b Outer sepals with green midvein not extending beyond scarious margins; bract 1.8-2.8 mm long; seed 1.0-1.7 mm long, yellow-brown, hyline margin lacking... *P. virginica*

The following taxa were included by Martin and Hutchins (1981, A Flora of New Mexico) as potentially occurring in this state, but the specimen evidence remains lacking: *Plantago aristata*, *P. heterophylla*, and *P. hirtella* var. *galeottiana*.

Plantago argyrea Morris, SILVERY PLANTAIN. Annual; leaves linear to linear-oblongate, 2-12 cm long, 1-6 mm wide, villous to sparsely sericeous (rarely glabrate), dark green (drying greenish brown); scapes strigose, erect; spikes 1-8 cm long; bracts villous, oblong to ovate-lanceolate, shorter than sepals, usually scarious margined; sepals villous (sometimes sparsely so), scarious margined; corolla lobes spreading or reflexed, 1.5-2.5 mm long; seeds 2, dark brown to black, 3-4 mm long. Flowers Jul-Sep.

Common on dry soils in piñon-juniper woodland and ponderosa pine forest in the western half of NM; eastern AZ.

Plantago elongata Pursh [*P. bigelovii* Greene, *P. pusilla* Nutt.] SLENDER PLANTAIN. Annual; leaves linear-filiform, 1-4 cm long, 0.5-1.5 mm wide, entire or sparsely denticulate, erect to decumbent, sparsely puberulent with thick appressed hairs, scapes slender, erect or decumbent, spikes slender, loosely to rather closely flowered; bracts glabrous, somewhat fleshy, ovate-acute, 1-2 mm long, lower usually keeled; sepals glabrous; corolla lobes small, 0.5-1 mm long, spreading or reflexed; stamens (when developed) usually 2; seeds (3) 4-8 (10), dark brown to black, pitted, 0.5-1.7 mm long. Flowers Apr-May

Barely entering NM at the northwestern and southwestern corners of the state on alkaline silts or clays in playas and other low-lying areas in piñon-juniper woodland down to desert grassland; northern Mexico to FL and CA then north to southern Canada.

A variable and widely distributed species with numerous cytotypes and synonyms. In NM, the southern population (Hidalgo, Luna) produces 8 seeds/capsule, frequently has toothed leaf margins and has been placed in *P. bigelovii* subsp. *californica*. Our northern plants of *P. elongata* (San Juan, Rio Arriba) are easily distinguished by an average of 4 seeds/capsule and consistently entire leaf margins. In CA, these taxa are confluent and cannot be separated.

Plantago eriopoda Torrey, ALKALI RIBGRASS. Perennial; crown more or less covered with brown woolly fibers; plants sparsely pubescent with septate hairs; leaves lanceolate, coriaceous or somewhat

fleshy, 4-5 nerved with prominent veins, 4-15 cm long, 0.7-2.5 cm wide; scapes 1 to several, hollow, exceeding the leaves, 8-25 cm long; spikes loosely flowered, 5-20 cm long at maturity; bracts broadly ovate with narrow scarious margins, subequal to the calyx, glabrous or minutely fringed with hairs; calyx lobes oval, about 2 mm long; corolla lobes spreading, 1-1.5 long; stamens 4; capsules circumscissile just below the middle; seeds 2-4, brown to black, finely pitted 2-2.5 mm long. Flowers Jun-Aug.

Moist, alkaline soils in cienegas and mountain valleys. Presently known in NM only from the Zuni Mountains of McKinley County; Rocky Mountain and northern plains states through western Canada; disjunct to Quebec and Chihuahua.

Plantago helleri Small, HELLER'S PLANTAIN. Annual; leaves linear-oblongate, villous or glabrate in age, 1-6 cm long, 2-8 mm wide; scapes erect, strigose, the longest hairs below the spike spreading or right angles; spikes compact, 8-12 mm thick, conspicuous because of the large corolla lobes; bracts linear, surpassing the calyx, villous; calyx lobes oval, villous, about 4 mm long, margins scarious; corolla lobes spreading, orbicular, 3.5-4 mm long, seeds 2, brownish, 3-4 mm long. Flowers Mar-May.

Silty soils and dry limestone slopes in southeastern NM; TX.

Easily distinguished by its thick spikes of relatively large flowers.

Plantago lanceolata L., ENGLISH PLANTAIN. Perennial; crown covered with tan woolly fibers; leaves 3-7 nerved with prominent veins, sparsely villous or glabrous, narrowly elliptic to lanceolate, 7-35 cm long and mostly 1-4 cm wide; scapes erect, striate, strigose, exceeding the leaves; spikes dense, ovoid-conic at first and cylindrical when mature, about 1 cm thick, 2-8 cm long; bracts acuminate to caudate acuminate; sepals villous-ciliate toward the tip, the two outer ones connate with separate midveins, this structure entire or merely notched at the summit; corolla lobes spreading or reflexed, 2-2.5 mm long; stamens 4, exerted, conspicuous; seeds 2, black, about 2 mm long. Flowers May-Aug.

Native of Eurasia. In NM, a statewide weed of roadsides, pastures, and other disturbed sites that are not too dry.

(Continued on page 3, *Plantago*)



(*Plantago*, Continued from page 2)

Plantago major L., COMMON PLANTAIN. Fibrous-rooted perennial (often blooming the first year); glabrous or glabrate; leaves petiolate, blades broadly elliptic or cordate, entire or irregularly toothed, 4-18 cm long, 2.5-11 cm wide, 3-7 nerved with prominent veins; scapes 5-25 cm long; spikes dense, narrow-elongate; < 1 cm wide, 5-30 cm long; bracts ovate, margins scarious, about 2 mm long; calyx lobes ovate margin scarious, about 1.5 mm long; corolla lobes reflexed, lanceolate, < 1 mm long; stamens 4, exserted; seeds 10-30, brown or black, about 1 mm long. Flowers May-Sep.

A cosmopolitan weed of moist soils along streams, roadsides and in lawns and gardens. The weedy form throughout NM is introduced from Europe. A succulent-leaved form in alkaline or saline habitats may be native to western North America.

Plantago patagonica Jacq., [*P. oblonga* Morris, *P. picata* Morris, *P. purshii* Roemer & Schultes, *P. spinulosa* Dcne.] WOOLY PLANTAIN. Annual; leaves linear-oblongate, villous, gray or pale green, erect or spreading, 1-12 cm long, 1-6 mm wide; scapes strigose, erect or spreading; spikes dense, cylindrical, 0.5-10 cm long; bracts villous, linear or lanceolate, 2-7 mm long; calyx lobes villous, oblanceolate, about 2 mm long; corolla lobes spreading to reflexed, oblong, 1-2 mm long; seeds 2, brown, about 2 mm long. Flowers Mar-Jul.

Common throughout NM on dry soils in deserts, grasslands and piñon-juniper woodland; western Canada to northern Mexico then amphitropically disjunct to Argentina and Chile. This is the most common and abundant plantain in NM.

Plants with elongate and exserted bracts approach the more eastern *P. aristata* and have been separated as variety *spinulosa*. Long-bracted plants are common in southern NM and sporadic in other parts of the state. This taxonomic variety cannot be maintained as all intermediate bract lengths can be found within or near these populations. Other named variations based upon scape length, stature, pubescence, or leaf shape are also inconsistent and not maintained in most recent treatments. Should the North American plants ever be infraspecifically distinguished from the South American plants, the name *P. patagonica* var. *gnaphaloides* is available for the former.

Plantago rhodosperma Dcne., RED-SEEDED PLANTAIN. Annual; leaves rosulate, elliptic to oblanceolate, acute or obtuse at the apex, pubescent, 4-27 cm long, 1-4.7 cm wide, margins entire or remotely dentate; scapes hollow, hirsute with stiff spreading septate hairs; bracts lanceolate to ovate, keeled, (2.2) 2.8-5.4 (5.8) mm long, hirsute, margins

scarious and ciliate; calyx lobes obovate, keeled, about 1 mm long, green midvein outer sepals extending beyond scarious margins; corolla lobes lanceolate, 2-4 mm long, usually erect and folded together (cleistogamous), sometimes spreading (chasmogamous); seeds 2, reddish with narrow hyline margin usually present on at least one side, 1.5-3 mm long. Flowers Apr-Jul.

Occasional in silty soils of low-laying areas in desert grasslands of southern and east-central NM; TN to KS then south to northern Mexico.

Plantago tweedyi A. Gray, TWEEDY'S RIBGRASS. Similar to *P. eriopoda*, but smaller; crown not conspicuously brown-fibrous woolly; leaves thin; scapes not exceeding, or barely surpassing, the leaves; spikes short and rather dense, 2-7 cm long at maturity, 5-8 mm thick. Flowers Jun-Aug.

Nonalkaline meadows and moist slopes of alpine and subalpine elevations of north-central NM; northern AZ then north to MT.

Plantago virginica L., PALE-SEEDED PLANTAIN. Very similar to *P. rhodosperma*, bracts 1.8-2.8 mm long; green midvein of outer sepals not extending past scarious margins; seeds 2, usually yellowish brown, hyline margins lacking, 1-1.7 mm long. Flowers Apr-Jun.

MA to WI then south to FL and TX. Possibly introduced to NM where it has been collected only once in Doña Ana County.

Doubtfully distinct from *P. rhodosperma*. Seed size, color, and hyline margin characteristics overlap in both taxa.

Plantago wrightiana Dcne. WRIGHT'S PLANTAIN. Annual; leaves linear-oblongate, apices obtuse or acute, dark yellow-green, glabrous or glabrate, entire to remotely denticulate, 7-22 cm long, 2-10 mm wide; scapes erect, strigose; spikes dense, cylindrical, to 9 cm long; bracts ovate, shorter than the calyx, villous, margins scarious and entire; calyx lobes obovate, villous, margins scarious and entire; corolla lobes spreading to reflexed, obovate 2.2-3.4 mm long; seeds 2, olive brown or pinkish gray, 2.2-4.1 mm long. Flowers May to Jul.

Native to OK, TX, and adjacent Coahuila. Possibly introduced to NM where it has been collected only once in Sierra County. Most reports of this species in NM and AZ are attributable to sporadic, nearly glabrous forms of *P. argyrea*. These two species are very similar and difficult to distinguish with overlapping, qualitative characteristics. *Plantago wrightiana* is generally less pubescent, and a larger plant with larger flowers. Its leaves are usually fewer, dark yellow-green, and more likely to be obtuse at the apices. *Plantago argyrea* is usually villous or strigulose, and a generally smaller plant with more numerous acute leaves that dry dark olive brown.



New Plant Distribution Records

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

Senecio quercetorum Greene [*Packera quercetorum* (Greene) C. Jeffery] (Asteraceae): Catron Co.: Whitewater Box, W. Martin 4721 (UNM).

Senecio neomexicana Gray var. *toumeyii* (Greene) T.M. Barkley [*Packera neomexicana* (Gray) W.A. Weber & Löve var. *toumeyii* (Greene) Trock & T.M. Barkley] (Asteraceae): Hidalgo Co.: Ivey 310 (UNM); Grant Co.: Castetter 9057 (UNM).

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

Leymus cinereus (Scribn. & Merr.) Löve (Gramineae): San Miguel Co.: Cowles, adventive along edge of road (SR

63) at confluence of Pecos River and Winsor Creek, N35° 48.716' W105° 39.541', 8150 ft, 29 July 2000, K. Allred 7854 (NMCR). This species was reported by Martin & Hutchins (Flora of New Mexico, 1980), but no validating specimens have been found until now. It remains to be seen whether this small population of only a few plants will maintain itself along the roadside.

— Brown & Coleman [see Botanical Literature of Interest]

Schiedeella arizonica P.M. Brown (Orchidaceae): several stations in Grant, Lincoln, and Otero counties; replaces what has passed as *Schiedeella parasitica* in New Mexico.





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Botanical Literature of Interest

TAXONOMY AND FLORISTICS:

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MISCELLANEOUS:

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RARE, THREATENED, AND ENDANGERED PLANTS:

[See New Mexico Rare Plants, presented by the NM Rare Plant Technical Council: <http://nmrareplants.unm.edu>]

WEB SITES OF INTEREST:

Index to American Botanical Literature: <http://www.nybg.org/bsci/iabl.html>

Kew Record of Taxonomic Literature: <http://www.rbgekew.org.uk/kr/KRHomeExt.html> [a very useful resource for literature searches and keeping up-to-date]

Research and Collecting Permits from National Park Service: http://science.nature.nps.gov/servlet/Prmt_PubIndex

Southwest Exotic Mapping Program: <http://www.usgs.nau.edu/swemp/> 