An Annotated List of Vascular Plants of the Chiricahua Mountains

Including
Pedregosa Mountains, Swisshelm Mountains, Chiricahua National Monument, and Fort Bowie National Historic Site

Peter S. Bennett
R. Roy Johnson
Michael R. Kunzmann

Special Report No. 12

Annotated List of Vascular Plants of the Chiricahua Mountains

United States Geological Survey
Biological Resources Division
Cooperative Park Studies Unit
The University of Arizona • Tucson, Arizona
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October 1996

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Abstract

The remarkable botanical diversity of the Chiricahua Mountains invites examination of their physiognomy, geology, pedology, and climate to account for this richness. We have presented a generalized account of these factors and a discussion of their importance. This special report is a comprehensive but tentative list of Chiricahua Mountains plants assembled from published sources, unpublished but reliable lists, and herbarium specimens. The list is preliminary, since the authors did not authenticate the taxa listed through specimen examination or by making field collections. The total Chiricahua sub-generic taxa presented in our list is 1,261, distributed among 1,240 species, 532 genera, and 103 families. In the absence of critical examination of the taxonomic literature, taking into account revisions, annotations, and errors in identification, the list was subjected to a single taxonomic standard.
Introduction

Although 5 partial lists of the Chiricahua Flora exist (Fishbein 1993, Rominger and Larenezi 1986a and 1986b, Russel 1982, Leithliter 1980, Reeves 1974) all are local lists and do not cover the entire range. While conducting research on vegetation and bird distributions, we were hampered by the lack of a more comprehensive plant list. Since time and funding did not permit preparation of a complete flora from new field collections, as should be done, we compiled available data by combining the contents of the local lists. The total Chiricahua sub-generic taxa presented in our list is 1,261 which are distributed among 1,240 species, 532 genera, and 103 families.

The holdings of the herbaria at Chiricahua National Monument, Fort Bowie National Historic Site, and the Southwest Research Station were added to the combined list previously mentioned. Herbarium holdings of The University of Arizona, Arizona State University, and New Mexico State University were then added to this list also. However, complete search of the approximately 0.5-million specimens held by these institutions were beyond our means and we had to limit our search to the most likely taxa. Details of herbarium sampling are presented in the flora section below.

The compiled raw master list, composed of the local floras, holdings of Chiricahua-based herbaria, and some holdings of local universities, contained taxonomic citations spanning more than a century. Reduction of this list to a single taxonomic standard was obviously necessary taking into account revisions, annotations, and errors in identification. We used Kartesz (1994) as a standard and consulted with herbarium personnel and reviewers to solve many, but not all, remaining problems. This procedure leaves much to be desired and will leave taxonomists dissatisfied. We hope that taxonomists will critically examine our work and make corrections as needed. We ask our readers to recall that our list was intended for use by field ecologists, a group that often say: "I don't care what you call it, I just want have a consistent name to use."
Study Area

The Chiricahua Mountains in Cochise County, Arizona, cover 152,300 ha (607 sq. mi.) and reach a maximum elevation of 2,986 m (9,795 ft.). The range rises above the Sulphur Springs Valley (elevation 1,525 m, 5,000 ft.) to the west and from the San Simon Valley (elevation 1,280 m, 4,200 ft.) to the east (Fig. 1).

Apache Pass marks the northern limit of the mountains and separates them from the lower, but structurally similar, Dos Cabezas Mountains to the north. The southern end of the range is marked by the confluence of the Sulphur Springs and the San Bernardino valleys, which includes the Pedregosa Mountains and Swisshelm Mountains, considered to be part of the Chiricahua for the purposes of this flora (Fig. 2). Streams on the east side of the Chiricahua flow north into the Gila River via the San Simon River and those on the west side flow into the Willcox Playa.

The Chiricahua Mountains are one of several ranges in the Basin and Range Province (Atwood 1940) that are outliers along the axis of the Sierra Madre Occidental massif 200 km (120 mi.) to the south in Mexico. Heald (1975) calls these mountains Sky Islands but Lowe (1992) more properly refers to them as the Madrean Archipelago since they are isolated wooded mountains rising from a "sea" of grasslands rather than islands in the sky. Additional Madrean outliers are the El Tigre, Pulpito, Ajos, and San José mountains of Mexico and the Animas, Peloncillo, Galiuro, Pinaleño, Dragoon, Atascosa, Pajaritos, Baboquivari, Huachuca, Santa Rita, Rincon, Santa Catalina, and Sierra Ancha of the United States (Fig. 3).

The Sierra Madre are 2 roughly parallel north-south oriented mountain chains running the length of Mexico. Their shape resembles a wishbone with the open ends near the border with the United States and the closed end to the south beyond Mexico City. The eastern range is the Sierra Madre Oriental and the western is the Sierra Madre Occidental. These two ranges are geologically dissimilar since the Sierra Madre Oriental is mostly marine limestones and the Sierra Madre Occidental is mostly felsitic rocks (especially rhyolites). The mountains gain elevation from north (1,800 m=6,000 ft.) to south (5,500 m=18,000 ft.) and are joined south of Mexico City at the Sierra Madre del Sur. A sloping plain (the Alto Plano) enclosed between the ranges also rises from north (1,200 m=4,000 ft.) to south (2,250 m=7,400). It was on these ranges (particularly the Sierra Madre Occidental) that much of the flora of the Chiricahua and other mountains of northern Mexico, southeastern Arizona and southwestern New Mexico evolved beginning in the Eocene Epoch of the Tertiary Period, 40 to 55 million years ago. Since this montane flora had its centers of origin and diversity in the Sierra Madre, it is referred to as Madrean.
Geology

The Chiricahua Mountains share a complex geological structure and history with other ranges of the Madrean Archipelago. In spite of this geological commonality, orogenic events seem to have expressly acted upon the Chiricahua to create a topography and soils favoring development of an exceptionally diverse biota.

The first of 3 orogenic phases forming the Chiricahua was one of compressional mountain building. Strong northeast-southwest oriented compressive crustal stress in the late Cretaceous and Paleocene (70—65 m.y. ago) caused older marine sedimentary and volcanic rocks to upwarp about a northwest-oriented fold axis (Drewes 1981).

This fold structure ruptured as compression continued, forming several allochthon (overriding plates) of regional extent, each bounded by low-angle thrust faults (Fig. 5). Horizontal plate movement was probably large, from 15-35 km (9-22 mi.) in extent. The southern plates (Cochise plate and Hidalgo plate) overrode the autochthon (stationary structures) to the north. The line of contact between the autochthon and the allochthon extended from the southern end of the Rincon Mountains eastward through the vicinity of Apache Pass and on into New Mexico.

The Hidalgo plate carried the structures of the future Chiricahua, Peloncillo, Animas, Dragoon, Mule and Santa Rita mountain ranges. The Cochise plate carried the future Huachuca, Whetstone, Swisshelm, and Pedregosa ranges. Thus the Chiricahua, Animas, and other ranges of the Hidalgo plate are somewhat isolated geologically from the Dos Cabezas Mountains and from the balance of the Madrean Archipelago to the west.

Compressive crustal stress relaxed in the late Cretaceous. During that time, and continuing into the Paleocene, magma migrated upward invading both bedded deposits and thrust faults. These erosion resistant cores tend to form the smooth humpback skyline profiles typical of the ranges of the autochthon (Santa Catalina, Rincon, and Pinaleño mountains). The cores of the Chiricahua Mountains and other ranges of the Hidalgo plate are exposed in relatively few places and their topography is more related to faulting and deposition of volcanic ejecta than to core exposure.

Following core emplacement, brief but violent volcanism 26.9 m.y. ago, centered on West Turkey Creek. Approximately 500-1,000 km³ (120-240 mi.³) of incandescent ash, pumice, and other volcanics fell while the particles were hot enough to weld together, forming the 400-1,200 m (1,300-4,000 ft.) thick Rhyolite Canyon tuff, blanketing the central Chiricahua. The Turkey Creek Caldera, a collapsed remnant of this volcanic episode, was filled by an intrusive dacite core, causing upward bowing of the region. Subsequent rhyolite lava extrusion in the vicinity has masked the topographic expression of the caldera. Evidently, the caldera was 20 km diameter (du Bray and Pallister 1991, 1992) and Gettings (1992). Remnants of its rim are Ida, Buena Vista, and Sentinel peaks (Fig. 6).
Figure 1. General map of southeastern Arizona.
Figure 2. Chiricahua Mountains and vicinity. Redrawn from Rand McNally and Co., engravers, 1890. Some localities established since 1890 (e.g. Paradise, Portal, and Chiricahua National Monument, etc.) do not appear on this map. (Map drawn by Lois Kain)
Figure 4. Ranges of the Madrean Archipelago in northern Mexico and southeastern Arizona. Redrawn from Marshall (1957).
Cooling-induced shrinkage of the welded Rhyolite Canyon tuff caused formation of vertical intersecting joints in the formation. This fractured and somewhat porous structure tends to capture precipitation, releasing it slowly through joints and fissures throughout the year. Frost-wedging and fluvial erosion acting along these fractures created a landscape of spires, balanced rocks, and deep canyons—a topography of diverse aspect exposure and consequently varied environments.

The bold eastern Chiricahua escarpment, visible from the San Simon Valley, formed when the graben down-faulted 1,500 m (5,000 ft.) along the presumptive Chiricahua Fault bounding the eastern foothills (Sabins 1957). Canyon gradients between the montane crest at 2,900 m (9,500 ft.) and San Simon Valley at 1,200 m (about 4,000 ft.) elevation are steeper than those draining to the west into Sulphur Springs Valley at 1,500 m (about 5,000 ft.) where there was no comparable down-faulting. As a result, canyons draining east have down-cut more and tend to be deeper than those draining west.

The sedimentary record of the region is no less rich than the orogenic history (Gililluly 1956). The Pinal schist, formed of metamorphosed sediments and volcanic materials in the Precambrian Period, provides the earliest sedimentary record. During the long period between the Precambrian and early Cretaceous, the region was covered by extensive seas at least 4 times. Each transgression left sedimentary deposits visible today: (1) the Cambrian age El Paso Dolomite, Abrigo Formation, Bolsa Quartzite, and Coronado Sandstone; (2) the Devonian and Mississippian Paradise Formation, Escabrosa Limestone, and Portal Formation; (3) the Lower Pennsylvanian to Upper Permian Horquila Limestone, Colina and Earp formations, Concha Limestone, and Scherrer Formation; and (4) the Early Cretaceous Upper Bisbee Formation, and Glance Conglomerate. Marine and terrestrial sedimentary rocks (preexisting Chiricahua orogeny), metamorphic core rocks, and volcannics (rhyolite, dacite, tuff) have provided material for generation of a variety of soil types. Soils, modified by intricate topography and varied by geological structure, have created a richly assorted habitat which supports an ecosystem of great ecological diversity and species richness (Moir 1979).
Figure 5. Tectonic map of Southeastern Arizona depicting the relationship of the Madrean Archipelago ranges and the allochthon plates. Redrawn from Drewes (1981)
Figure 6. Preliminary geologic map of the Turkey Creek caldera. Redrawn from du Bray and Pallister (1992). The caldera was the source of more than 500 km$^3$ of rhyolite tuff that covered the Chiricahua and contributed greatly to its topographic diversity.
Climate

Because the Chiricahua climate varies with season and elevation, it cannot be simply described. Precipitation increases 0.392 mm for each 1 m increase in elevation. It is bimodal in distribution with 52% of the annual total falling from July through September and 47% falling in July and August. During late fall and winter (October through April), 42% of the annual precipitation total is received. The summer wet climate was an important factor in evolution of Madrean vegetation and remains important for community maintenance today (Axelrod 1958). Table 1 lists mean annual precipitation for several localities in the Chiricahua mountains.

Temperature at the base of the mountains is warm temperate (Cox, et al.). Portal (elevation 5,000 ft.) has 220 frost-free days and Chiricahua National Monument (elevation 5,250 ft.) may expect 300 frost-free days. Winter temperatures in the high country are more severe. Calculated on the basis of normal temperature lapse rate of 1°F per 1,000 ft., approximately 140 days are frost-free (Sellers and Hill 1974).

Elevation influence on precipitation and temperature distribution is described with more detail in the vegetation descriptions which follow.
Table 1. Mean annual precipitation in the Chiricahua Mountains.

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<th>ELEVATION</th>
<th>PRECIPITATION</th>
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<td></td>
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<tr>
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Soils

Detailed soil surveys of Arizona's mountainous regions have not been undertaken but, Hendricks (1985) has discussed the soils of Arizona statewide and Richmond (1978) describes and maps the soils of Cochise County in a 3rd-order survey.

Soils of the Valley Floor, River Bottoms, and Alluvial Fans

Sulphur Springs and San Simon Valley soils are deep and well drained (Moir 1979). McAllister Ustolic Haplargids Association have good water-holding capacity (250 to 300 mm) and are confined to the nearly level San Simon Valley floor northeast of the Chiricahua. Vegetation is scrub grassland. Mesquite (*Prosopis glandulosa* and *P. velutina*) are widespread where water-holding capacity is higher. Burrobush (*Isocoma tenuisecta*) and mesquite presence also indicate disclimax conditions stemming from overgrazing and perhaps fire exclusion.

Comoro—Anthony—Grabe Typic Torrifluvents Association lies at the lower bajadas of East Turkey Creek—Cave Creek, Tex, Leslie, Rucker, Pinery—Bonita, and Wood canyons. These soils are deep, well-drained sand, loamy sand, or sandy loam which are sometimes gravelly, especially near the surface. Water-holding capacity is moderate (120 to 150 mm) supporting growth of mesquite scrub, yucca, and catclaw, with bunchgrasses between the shrubs. Where the surface is a brown loam underlain by clay loam, high water availability and low permeability are imparted, creating small oases like that at San Simon Cienega. These soils are often calcareous, slightly alkaline, and somewhat saline.

Chihuahuan Desert Scrub communities develop where valley soils have lower available water capacity (50 to 75 mm). Cave Typic Paleorthids, Hathaway Aridic Calciustols, and Nickel Calciorthids are soils supporting communities of creosotebush, mariola, parthenium, and other desert indicators prominent east of Portal (Richmond 1978). However, such soils are uncommon near the Chiricahua, effectively limiting the occurrence of desert vegetation.

Soils of Valley Slopes and Foothills

Forrest Ustollic Haplargids—Tubac Typic Paleargids Association and Eba Typic Haplargids Association lie adjacent to the Chiricahua and are best represented on the west side of the range. Both associations are deep, fine textured, well drained, neutral to moderately alkaline, and lie on gentle slopes between 1,150 and 1,550 m (3,800—5,000 ft.) elevation. They differ primarily in gravel and calcium carbonate content. The Forrest—Tubac Association lacks the gravelly surface and subsoil and has less lime accumulation than found in the Eba Association.

Three less important soil associations in the Chiricahua area are the Sonoita Typic Haplargids Association, the Bonita Chromusterts—Sontag Typic Argiustolls Association and the Martinez Udic Haplustalf. The first two are moderately gravelly soils with moderate water availability and support stands of Semi-desert Grassland. The Martinez soils are finer textured with much higher clay content than the others and with higher water availability—150 mm (6 in.) versus 230 mm (9 in.)—enough difference to support oak savannas on the Martinez soils. All valley slopes and foothills soils support Semi-desert Grassland vegetation.
Soils of the Mountains

Tortugas and the Mabray Lithic Haplustolls occur on limestone outcrops near Apache Pass, Portal, Hands Pass, and several other locations. They are moderately shallow to very shallow, alkaline, calcareous, cobbly and stony, very well-drained loam soils. Available water capacity is too low (25 mm=1 in. to 60 mm=2.5 in.) to support woodland vegetation, resulting instead in the development of Interior Chaparral vegetation, with cacti well represented.

The Faraway Lithic Haplustolls and Luzena Lithic Argustolls are montane soils that have developed below 2,150 m (7,000 ft.) elevation in the Chiricahua (Richmond 1978). They are usually grayish brown very cobbly sandy loam, about 20 cm (8 in.) deep, mildly acid to mildly alkaline, non-calcareous, and develop over rhyolite or other igneous rock with widely spaced fractures. Water availability and cation exchange capacity are low and water permeability is moderate to low (Hendricks 1985). These soils are widely distributed and support most of the Chiricahua biomass, that is, the Madrean Evergreen Forest and Woodland (Moir 1979, Brown 1982).

Above 2,100 m elevation (7,000 ft.), non-calcareous brownish gray cobbly loamy sand supports the Subalpine Conifer Forest and the Madrean Montane Conifer Forest. Richmond (1978) does not map high altitude soils in the Chiricahua. However, Moir (1979) found Lithic and Typic Ustorthents in the Peloncillo Mountains at 2,100 m (7,000 ft.) elevation which appear similar to soils at higher elevations in the Chiricahua, especially over exposures of the metamorphic core complex. These soils appear similar to the Mirabal Ustorthents (Hendricks 1985). The identity of the rhyolite-derived soils has not been established, but they appear to differ from woodland soils found at lower elevations.

High altitude soils are moderately acid (pH 4.8 to 5.5), low enough to favor growth of fungi decomposers instead of the more efficient bacteria with the result that leaf litter tends to accumulate. pH values tend to be higher (5.9 to 6.6) beneath aspen, maple, and other broadleaf trees. Low available water capacity, low cation exchange capacity, and excessive drainage combine to limit nutrient availability and consequently, few forest trees are more than 20 m (66 ft.) tall.

Where drainage is impaired, high altitude meadows or "parks" form, especially along the mountain crest in saddles (Russell 1982). They are found in scattered clearings at elevations generally above 2,300 m (7,500 ft.). Wet meadows occur in bottoms near springs. Fire and disturbance are thought to be a factor in formation and preservation of parks. However, parks occur in places where such factors are not obviously present (Russell 1982).
Vegetation

Chiricahua Mountains vegetation is typical of other ranges of the northern Madrean Archipelago except that it lies closer to the boundary between the Sonoran and the Chihuahuan deserts causing representation of floral elements of both. The Chiricahua Mountains are surrounded on 3 sides by semi-desert scrub grassland and on the 4th (northeastern) side by the upper elevational portions of the Chihuahuan Desert. Grassland and desert give way to oak woodlands upslope. The transition between grassland and woodland is usually gradual, taking the form of a savanna. Between desert and woodland the transition is abrupt, although there may be a band of chaparral between the 2. Oak woodland (encinal) intergrades with pine-oak woodland. Pine forest, followed by spruce-fir forest, is found at higher elevations.

Transitions are controlled by elevation, precipitation, slope, exposure, and soil type (Whittaker and Neiring 1964, 1965). Thus, grasslands and woodlands tend to ascend the mountains on exposed ridges and south-facing slopes while the forest types descend the mountains in canyons and on north-facing slopes. Soils on limestone have the effect of lowering ecological elevation by 500 m (1,500 ft.) or more permitting chaparral to ascend to higher than expected elevations.

Riparian forest and riparian woodland occur in canyon bottoms which are very species rich. A peculiar characteristic of the major Chiricahua canyons is that, notwithstanding apparent topographic similarity, their vegetation and floras are unique. West Turkey Creek, for example, has no stands of Arizona cypress which are common in nearby Rucker, Bonita, and Rhyolite canyons.

Three kinds of riparian environments are recognized: (1) the hydoriparian where surface water is perennially present; (2) the mesoriparian where water is seasonally present; and (3) xeroriparian where water presence is unpredictable and is dependent on localized events such as summer thunder-showers (Johnson and Lowe 1985). Hydoriparian vegetation is mostly riparian obligate—requiring abundant moisture at or near the surface. Mesoriparian vegetation is preferential facultative and requires more moisture than, and differs compositionally from, nearby upland vegetation. Xeroriparian vegetation differs in stature and density, and is a mixture of riparian and upland plants.

The vegetation of the Chiricahua Mountains is still under active investigation by the Fish and Wildlife Service's GAP program and by the National Biological Service. The classification we present is based on Brown, Lowe, and Pase (1979, 1980), and the identification numbers appended to community names correspond to those used by those authors.

Subalpine Conifer Forest: Engelmann Spruce - Douglas-fir - Mixed Conifer Series

This forest is among the southernmost Engelmann Spruce forests in the United States. It occupies the highest elevations in the range, occurring on the north- and east-facing slopes of Chiricahua Peak (2,986 m, 9,794 ft.), and along the mountain crest from Ida Peak at 2,590 m (8496 ft.) to Turtle Mountain at 2,608 m (8557 ft.). In sheltered mesic canyons such as Pine
500-640 mm (20 to 25 in.) per year with more than half of it falling in July, August, and September. Snow is often abundant and remains on the ground throughout the winter. *Picea engelmannii* is dominant and climax. Successional species (listed in order of decreasing importance) are *Pseudotsuga menziesii*, *Populus tremuloides*, *Abies concolor*, and *Pinus strobiformis*. The narrow or conical form of these species is an adaptation for shedding snow, thus preventing breaking or uprooting by the snow’s weight.

Multiple vegetation layers are well developed. Spruce and fir overtop the subdominant pines. Fire sites are initially colonized by dense aspen stands which are eventually shaded out by pines and spruce regeneration. However, occasional aspen trees persist in the conifer forest. A shrubby layer of *Acer glabrum*, *Lonicera arizonica*, *Vaccinium myrtillus*, and *Sorbus dumosa* occurs here and there. The herbaceous plant layer is well represented by *Fragaria virginiana*, *Smilacina racemosa*, *Viola canadensis*, *Mertensia franciscana*, *Goodyera oblongifolia*, *Bromus ciliatus*, and *Senecio bigelovii*.

Many prominent plants in this community have centers of distribution in the Rocky Mountain, Sierran-Cascadian, or Oregonian biogeographic provinces (Brown, Lowe, and Pase 1979). *Pinus strobiformis* and *Sorbus dumosa* are exceptions belonging in the Madrean biogeographic province. Classification of this vegetation series within the Madrean biome is arbitrary and was done to emphasize its Mexican affinities.

**Madrean Montane Conifer Forest: Douglas-fir - Mixed Conifer Series**

This forest occurs between 2,300-2,650 m (7,550-8,700 ft.), contacting the Engelmann Spruce-Douglas-fir - Mixed Conifer Series forest above and the Pine Series forest below. The forest extends to lower elevations on north-facing slopes and in cool mesic canyons and ascends upslope to the highest peaks in the range on warmer and drier south-facing slopes. Slightly less than half of the annual precipitation of 500-650 mm (20-25 in.) falls as snow.

The closely set dominant trees (65-90% cover) permit relatively little light to reach the forest floor. Subdominant trees are scattered in forest openings and the scrub layer is well represented or abundant (11-40% cover). Usually only 3 vegetation layers are apparent: dominant trees, shrubs, and herbs. Although the dominant tree species reach impressive stature elsewhere (45-60 m), Chiricahua stands rarely exceed 30 m. Inadequate precipitation and thin soils with low water holding capacity combine to limit growth.

The Douglas-fir - Mixed Conifer Series is well developed along the road into Barfoot Park and the road between Rustler Park and Long Park. This forest resembles the Madrean Subalpine Conifer Forest but lacks *Picea engelmannii*. *Pseudotsuga menziesii*, *Abies concolor*, and *Pinus strobiformis* are most common (in the order presented). *Populus tremuloides* may be locally abundant on fire scars. Other successional trees are *Quercus gambelii*, *Acer glabrum* and *A. grandidentatum*. They make their appearances here at the upper limit of their altitudinal ranges. *Holodiscus dumosus*, *Lonicera arizonica*, *Physocarpus monogynus*, *Ribes pinetorum*, *Robinia neomexicana*, *Salix scouleriana* are common scrub-layer species. *Fragaria vesca*, *F. virginiana*, *Geranium richardsonii*, *Lathyrus graminifolius*, *Rudbeckia laciniata*, *Senecio wootonii*, *...
Maianthemum racemosum, S. stellatum, and Viola canadensis are characteristic in the herbaceous layer. Showy but less common plants are Aquilegia chrysantha, A. triternata, and Salvia lemmonii. Bromus ciliatus is most often found in forest openings but also occurs in isolated tussocks beneath trees, a reminder of a time past when the forest was more open, perhaps following a fire.

Madrean Montane Conifer Forest: Pine Series

The Pine Series forest is the highest elevation vegetation type with undoubted Madrean affinities. The community occurs between 2,100-2,600 m (7,000-8,500 ft.) where precipitation is between 508-635 mm (20-25 in.) annually. The Pine Series and the Douglas-fir - Mixed Conifer Series both lie in the same elevational band and receive similar amounts of precipitation. The Douglas-fir - Mixed Conifer Series requires a cooler, wetter environment, confining it to northeast, north, and northwest facing slopes. The Pine Series communities develop on warmer, less protected west, south, and southwest-facing slopes or flats.

Three pines of the Ponderosa complex occur in the Chiricahua Mountains. Arizona pine (Pinus arizonica), is common in the mountains of southeastern Arizona, southwestern New Mexico, and the Sierra Madre Occidental of Mexico, where it has its center of distribution (Critchfield and Little 1966). The Rocky Mountain ponderosa (Pinus ponderosa var. scopulorum) is found sparingly and is, in part, distinguished from the former by needles in fascicles of 3 instead of 5, but this character is rather variable. Apache pine (P. engelmannii) which is restricted in distribution, occurring in southeastern Arizona, extreme southwestern New Mexico, and the northern outliers of the Sierra Madre Occidental. Apache and Arizona pines appear to form hybrids with characteristics of both parent species. Possible hybrids are commonplace along the north edge of Barfoot Park and upper Pinery Canyon.

Arizona and Apache pines occur together at elevations between 2,150-2,600 m (7,000-8,000 ft.) with Arizona pine more common at the higher elevations and Apache pine more common below. Apache pine is found down to 1,675 m (5,500 ft.) in riparian corridors but Arizona pine does not range as low. Both trees have crowns oval in outline, forming forests distinctive from the spire-shaped appearance of fir and spruce stands. Old growth stands have 50-75% cover and are often park-like with a single layer understory of grass maintained by frequent low-intensity fires. Low trees and shrubs, as well as herbs, may form a multistratal community beneath the pines when the overstory is more open.

Commonly encountered understory trees are Quercus hypoleucoides, Q. arizonica, Q. rugosa, Q. gambelii, Pinus discolor, and Juniperus deppeana. Abundance and composition of the shrub layer depends on recent fire history. Robinea neomexicana, Ceanothus fendleri, Rubus neomexicanus, Lonicera arizonica, and Sambucus coerulea are commonly found. Antennaria parvifolia, Tradescantia pinetorum, Senecio bigelovii, S. wootonii, Geranium richardsonii, Elymus trachycaulus, Koeleria macrantha, Muhlenbergia longiligula, M. montana, and M. virescens are frequently encountered herbs.
Madrean Evergreen Forest and Woodland Formation: Oak - Pine Series

The Oak - Pine Series lies in contact with the Encinal Series below and the Pine Series of the Madrean Montane Conifer Formation above. At its upper altitudinal limit (about 2,400 m, 8,000 ft.) the Oak - Pine Series grows on warm southwest to southeast facing slopes in contact with the Madrean Montane Conifer, Forest: Pine Series. At low elevation, it tends to tongue down into cool canyon slopes and bottoms descending to about 1,675 m (5,500 ft.) where it lies between the encinal upslope and the Interior Southwestern Riparian Deciduous Forest and Woodland below. Precipitation is 430 to 510 mm (17-20 in.) annually, more than half of it arriving in the summer. Winter temperatures are mild and snowfall is light.

Four vegetation layers are apparent (dominant tree, subdominant tree, shrub, and herb). The dominant tree is *Pinus leiophylla* with *Pinus engelmannii* being less common. Crowns are 10-25 m (40-80 ft.) tall at maturity. Subdominant trees (*Quercus hypoleucoides*, *Q. arizonica*, *Arbutus arizonica*, *Juniperus deppeana*, and *Pinus discolor*) are 5-15 m (20-50 ft.) tall when mature. Nowhere do the dominant trees form a closed canopy and the subdominant layer is also usually open. Numerous species of shrubs and herbs are represented and species diversity is high.

Typical shrubs are *Nolina microcarpa*, *Rhus aromatica*, *Arctostaphylos pungens*, *Vitis arizonica*, *Yucca schottii*, *Garrya wrightii*, *Frangula betulifolia*, *Prunus serotina* ssp. *rufula*, and *Ceanothus fendleri*. *Muhlenbergia longiligula*, *M. emersleyi*, *Aristida orcuttiana*, *Piptochaetium fimbriatum* are all common grasses. Some prominent forbs are *Hedeoma hyssopifolium*, *Senecio neomexicanus*, *Brickellia lemmoni*, *Echeandia flavescens*, *Clitoria marina*, *Tradescantia pinetorum*, *Phaseolus grayanus*, and *P. parvulus*.

Madrean Evergreen Forest and Woodland Formation: Encinal Oak Series

This series is the most characteristic and widespread of the Madrean woodland vegetation types in the Madrean Archipelago. Rainfall exceeds 380 mm (15 in.) with 200 mm (8 in.) or more falling in the summer. The proportion of summer to winter rainfall is critically important for encinal development. If summer precipitation does not predominate, encinal vegetation will be absent. Winter temperatures are mild.

"Encinal" is derived from the Spanish *encino =* live oaks + *al =* place of (Shreve 1915, Brown 1982). Encinal vegetation develops in the archipelago between 1,400-1,850 m (4,500-6,000 ft.) elevation. The Pine-Oak Woodland lies in contact above and the Semi-Desert Grassland below. Encinal vegetation often forms an ecotone several kilometers wide with the Semi-Desert Grassland and is especially species-rich in that circumstance (Wentworth 1976). Contact with Desert Grassland is apparently controlled by soil depth and type. The encinal occupies thin coarse-textured soils, while the grassland is found on deeper, finer soils.

At lower elevations the encinal tree layer is open to very open with a herbaceous understory of grasses and low shrubs. At higher elevations the tree layer becomes nearly closed and a layer of shrubs may appear. The herbaceous layer, though generally present, is better developed where there is less overstory.
Encinal trees are usually less (often much less) than 9 m (30 ft.) tall with rounded spreading crowns. An excellent example of encinal is seen along the road into Price Canyon and on the foothills between John Long Canyon and West Turkey Creek.

*Quercus emoryi* and *Q. arizonica* are the most important trees in the encinal. In order of decreasing importance, *Juniperus deppeana, J. erythrocarpa, Pinus discolor* are also found in the tree layer. These five encinal trees occur in variable proportions. Oaks and junipers or junipers and pines form nearly pure stands here and there, obscuring their evolutionary and distributional relationship within the Madrean Encinal. Where oaks are locally absent because environmental factors are unsuitable, overall habitat remains an encinal, although one composed of accessory species.

Shrubs are not always present but some that are commonly found are *Nolina microcarpa, Garrya wrightii, Rhus aromatic, Mimosa aculeaticarpa var. biuncifera, Dasylirion wheeleri, Agave palmeri, Ericameria laricifolia, Quercus toumeyi, and Opuntia spinosior.*

Herbaceous plants, especially grasses, are abundant, including grama (*Bouteloua gracilis, B. curtipendula, B. rothrockii, Muhlenbergia emersleyi, Aristida orcuttiana, Eragrostis intermedia*), and many others. Non-graminaceous herbs are *Astragalus nothoxys, Bouvardia tenuifolia, Cheilanthes fendleri, Eriogonum wrightii, Gaillardia pinnatifida, Penstemon linarioides,* and *Verbena neomexicana.*

**Warm Temperate Scrublands: Interior Chaparral**

The Interior Chaparral is dominated by shrubs (collectively = scrub), uniformly 1-2 m (3-6 ft.) tall, with dense compact crowns and small sclerophyllous leaves. Chiricahua Chaparral predominately occurs at the same elevation as the Oak Woodland, between 1,400-1,850 m (4,500-6,000 ft.), and is either disclimax or edaphically controlled.

Where moisture permits and deep soils are present, dense scrub typically covers 70-85% of the ground. These stands are often fire disclimaxes dominated by *Arctostaphylos pungens* or *Quercus toumeyi.* Notable fine stands of old growth chaparral are found immediately west of Chiricahua National Monument Headquarters and on the ridge above Pickett Park in the monument.

Near Hands Pass (North Fork of Pinery Canyon) edaphically maintained *Ceanothus-Cercocarpus* chaparral cover is conspicuously faithful to porous limestone-derived soils while evergreen oak woodland is confined to rhyolite-derived soils with greater moisture.

Shrubs typical of Interior Chaparral in the Chiricahua Mountains are *Ceanothus greggii, Eriogonum wrightii, Mimosa aculeaticarpa var. biuncifera, Calliandra eriophylla,* and *Fallugia paradoxa* in the driest situations and *Ceanothus fendleri, Arctostaphylos pungens, A. pringlei, Cercocarpus montanus, Quercus toumeyi,* and *Purshia mexicana* on sites with better moisture. *Agave parryi* and *Dasylirion wheeleri* are 2 shrub-size monocotyledonous plants commonly
encountered. *Pinus discolor, Juniperus erythrocarpa,* and *Quercus emoryi* are found scattered on
sites with better moisture but never dominate the landscape.

Beneath the dense canopy of a mature stand, little herbaceous cover can be found. Where
openings occur *Aristida fendleriana, A. orcuttiana, Bouteloua aristidoides, B. curtipendula,* and
*Stipa neomexicana* are found. Ferns, particularly *Pellaea intermedia,* grow on sunny slopes in
soil pockets. *Castilleja integra, Penstemon linarioides, Astragalus nuttallianus, A. nothoxys, A.
wootonii,* and *Kallstroemia grandiflora* grow where light and space permit.

**Warm Temperate Grasslands: Scrub-Grassland (Semidesert Grassland)**
The Scrub-Grassland covers vast tracts of land between the mountains of the Basin and Range
Province of the Southwest and northern Mexico. Scrub grassland adjoins the Sonoran Desert to
the west and the Chihuahuan Desert to the east at 760-1,070 m (2,500-3,500 ft). It extends
upward to the lower reaches of the Encinal (Oak) Woodland or Interior Chaparral between 1,370-
1,030 m (4,500-6,000 ft) elevation. Precipitation is 203-330 (8-13 in/yr) with more than 50%
falling in the summer.

The Scrub-Grassland is transitional between the deserts and the scrub and contains some species
from both, mostly shrub species. Apparent simplicity of grasslands is illusory. Botanical
diversity is surprisingly high: Scrub-Grassland has 25% of the species known from the
Chiricahua Mountains.

Intensive cattle grazing during the past 200 years has altered the appearance of the grassland, in
some cases profoundly. Heavy grazing reduced the vigor of the bunchgrasses, disturbed the soil
encouraging establishment of annual grasses, and favored growth of plants (often shrubs)
unpalatable to cattle. Highly successful suppression of range fires in modern times has further
protected non-fire resistant scrub at the expense of fire tolerant grasses. Even light grass fires will
check growth of these thin barked scrub species and prevent scrub from becoming unnaturally
prevalent. *Prosopis glandulosa, Isocoma tenuisecta, Senecio douglasii, Gutierrezia
microcephala,* and *Mimosa aculeaticarpa* var. *biuncifera,* are all normal members of the Scrub-
Grassland and may become unnaturally prevalent. In extreme cases, complete conversion from
grassland to scrub has taken place. Extensive mesquite stands near Portal, Paradise, and Douglas
represent former grasslands now controlled by this shrub.

In addition *Agave palmeri, Dasylirion wheeleri, Nolina microcarpa, Yucca schottii* and *Y. elata,*
and *Fouquieria splendens* are common. *Opuntia engelmannii, O. chlorotica, O. spinosior,
Coryphantha vivipara, Echinocereus pectinatus* are frequently encountered cacti.

*Aristida ternipes, Bouteloua curtipendula, B. gracilis, B. hirsuta,* *B. radicosa, B. rothrockii,
Elymus elymoides, Erargrostis intermedia, Hilaria belangeri, Lycurus setosus, Muhlenbergia
asperifolia, M. porteri* and *Sporobolus airoides* are the most abundant bunchgrasses of the
Scrub-Grassland.
Annual grasses that have replaced the bunch grasses are: *Aristida adscensionis*, *Bouteloua aristidoides*, *B. barbata*, *Brachiaria arizonicum*, *Bromus hordeaceus*, *Cenchrus incertus*, *Eragrostis cilianensis*, *E. pectinacea*, *E. mexicana*, *Eriochloa lemmii*, *Panicum hirticaule* and *Vulpia octoflora*.

*Amaranthus palmeri*, *Gomphrena caespitosa*, *Salsola kali*, *Acoutria thurberi*, *A. wrightii*, *Baccharis pteronioides*, *Cirsium neomexicanum*, *Leucelene ericoides*, and *Mentzelia albicaulis*, are a few of the annual broadleaf plants specializing in colonizing disturbed habitats. In good years, when late winter rains are adequate, the Scrub-Grassland puts on a spectacular wildflower display. Many of these flowering plants are important wildlife resources. The showiest species are: brickelbush (*Brickellia californica*, *Gaillardia pinnatifida*, *G. pulchella*, *Lasthenia californica*, *Zinnia acerosa*, *Ipomoea costellata*, *Sphaeralcea laxa*, *Mirabilis multiflora*, *Oenothera primiveris*, *Escholtzia californica mexicana*, *Eriastrum diffusum*, *Gilia sinuata*, *Ipomopsis multiflora*, *Penstemon parryi*, and *Verbena neomexicana*.

**Chihuahuan Desert Scrub**

The Chihuahuan Desert Scrub is the largest of the 3 creosotebush dominated deserts of North America (Mohave, Sonoran, Chihuahuan). Its center, and region of best development, lies on the plains between the Sierra Madre Occidental and Sierra Madre Oriental of north-central Mexico. In the United States, the Chihuahuan Desert occupies the Rio Grande Valley of Texas and New Mexico, and southeastern Arizona south of the Gila River in the San Simon Valley. In the Chiricahua Mountain vicinity, the desert is best developed on flats flanking the range to the northeast. Further to the south, in the vicinity of Portal and beyond, the Chihuahuan Desert vegetation becomes patchy, gradually giving way to Desert Grassland.

The northern Chihuahuan Desert climate, with 230 mm (9 in.) precipitation, is slightly drier than the Sonoran Desert and is decidedly colder. Freezing temperatures occur on more than 100 nights a year. In the summer, maximum temperature is frequently 105°F or warmer. More than 50% (range 54-72) of the annual precipitation occurs in the summer. This climate favors scrub growth and not arborescent vegetation.

Vegetation is approximately 3 f. tall with a scattering of taller plants. Although floristically rich, the Chihuahuan Desert Scrub gives the impression of uniformity and simplicity. The few scrub species that are widespread and define the Chihuahuan Desert in Arizona are: *Larrea tridentata*, *Flourensia cernua*, *Acacia neovernicosa*, *Parthenium incanum*, *Mortonia sempervirens*, *Prosopis glandulosa* and *P. torreyana*.

Although succulents are not as abundant as where the climate is warmer and more moist, they are an important element in the vegetation. *Opuntia chlorotica*, *O. phaeacantha*, and *O. macrocentra* are rather common.

Many grasses are common to the Chihuahua Desert and the Semi-desert Grassland which lies altitudinally above. *Aristida adscensionis*, *Bouteloua aristidoides*, *B. barbata*, *Brachiaria arizonicum*, *Bromus mollis*, *Eragrostis diffusa*, *E. mexicana*, *Eriochloa lemmii*, *Panicum hirticaule*, and *Vulpia octoflora* those most commonly encountered.
Many plants are cryptic in their habits and do not show except in years with good moisture (especially winter rainfall). *Allium macropetalum, Apodanthera undulata*, *C. digitata* and *Anemone tuberosa* are common geophytes. *Gaillardia pulchella* and *Lasthenia chrysostoma* are common therophytes.

**Interior Southwestern Swamp and Riparian Scrub: Mixed Scrub (Xeroriparian) Series**

Xeroriparian ecosystems are associated with desert washes where water is fleetingly present as a result of storms. Flowing for a few minutes or a few hours only, water availability is unpredictable. Plants associated with the Xeroriparian are desert plants adapted to an uncertain availability of moisture.

Growing conditions are better near xeroriparian washes, even considering vagaries of moisture. *Larrea tridentata, Flourensia cernua, Acacia neovernica, Parthenium incanum,* and *Mortonia scabrella*, all typical Chihuahuan Desert species, are commonly present. *Prosopis glandulosa* and *Baccharis sarothroides* are examples of shrubs growing well with enhanced moisture. *Sporobolus airoides* is a coarse grass found in addition to the smaller typical desert species.

Although the xeroriparian is limited in aerial extent, its ecological significance is great. The species density and diversity of vertebrates in the xeroriparian is 2 to 3 times greater than in the surrounding desert.

**Arctic - Boreal Grasslands:** Madrean Alpine and Subalpine Grassland and **Cold Temperate Grasslands:** Madrean Montane Grassland

These high country meadows are another vegetation with strong Rocky Mountain and Sierra Madre affinities. For consistency, we assign them to the Madrean though they could be considered to be Rocky Mountain biota. Since the Madrean Alpine and Subalpine Grassland is restricted to a handful of widely scattered sites each less than a hectare in size, their discussion will be combined.

These grasslands lie in natural forest openings on more or less level ground with poorly-drained soils at 2,470-2,900 m (8,100-9,500 ft) elevation. Precipitation is about 635 mm (25 in) annually with more than 50% falling during summer. The higher elevation grasslands are watered by snow melt and rainfall, while the lower ones have a cienega (marshy spring) fed rill, in addition.

Forbs (non-graminoid herbs) are usually more abundant than are grasses, sedges, or spike-rushes. *Rudbeckia laciniata* and *Dugaldia hoopesii* are the tallest forbs with a 1 m stature. *Achillea lanulosa, Androsace septialis, Bahia dissecta, Cerastium nutans, C. sordidum*, *Gentianella wislizeni, Helenia recurva, Linum lewisii, Oenothera hookeri, O. laciniata, Oxalis alpina, Potentilla hippiana, Senecio bigelovii, S. wootonii, Sisyrinchium longipes, Taraxacum laevigatum, Trifolium pinetorum,* and *Viola nephrophylla* are native members of the meadow flora. *Rumex orthoneurus*, one of the genuine plant rarities in the Chiricahua Mountains, also occurs in wet marshes of these meadows.
Important meadow grasses are: *Agrostis scabra*, *Blepharoneuron tricholepis*, *Bromus richardsonii*, *B. frondosus*, *Koeleria cristata*, *Muhlenbergia montana*. Grass-like species are: *Carex wootonii*, *Eleocharis montevidensis*, and *Juncus saxamontanus*.

Russell (1982) found that high country meadows in the Chiricahua Mountains have been seriously impacted by grazing and trampling. The ubiquitous presence of *Iris missouriensis* and *Pteridium aquilinum* indicate disturbance as do the naturalized *Taraxacum officinale*, *Erodium cicutarium*, and *Rumex acetosella*.

**Interior Southwestern Riparian Deciduous Forest and Woodland: Mixed Broadleaf Series**

The Mixed Broadleaf Series is either hydoriparian (water present continuously) or mesoriparian (water predictably present seasonally). It is confined to deep cool canyon bottoms at elevations between 1,525-2,150 m (5,000-7,000 ft). Tree species commonly present in the Chiricahua Mountains are: *Platanus wrightii*, *Juglans major*, *Salix gooddingii*, *Fraxinus velutina*, and *Populus fremontii*. Trees from adjoining communities, (Madrean Pine Series, Madrean Oak - Pine Series, and Madrean Encinal (Oak) Series) may be present, enhancing species and height diversity. *Pinus engelmannii*, *Arbutus arizonica*, *Quercus rugosa*, and *Q. hypoleucoides* are representatives from the Pine - Oak Series woodlands. *Cornus stolonifera*, *Acer glabrum*, *A. grandidentatum*, and *Pseudotsuga menziesii* are associated with the Madrean Montane Conifer Forest: Pine Series. *Q. arizonica*, *Juniperus deppeana* and *P. discolor* are associated with the Encinal (Oak) Woodland. The relict Arizona cypress (*Cupressus arizonica*) forms its own vegetation communities and is usually associated with the Mixed Broadleaf Series.

Shrubs are abundant beneath the tree layer. Young or suppressed tree species are the most common shrubs but true shrubs such as *Amorpha fruticosa*, *Frangula betulifolia*, *R. californica*, *Cercocarpus montanus*, *Ceanothus integerrimus*, *Ptelea angustifolia*, *S. lasiolepis*, *Toxicodendron rydbergii* and *Sideroxylon lanuginosa* are also important.

The herb and grass layer is best developed in forest openings or along stream banks. Some herbs characteristic of the Riparian Broadleaf Forest and Woodland are: *Brickellia chlorolepis*, *Erigeron platyphyllos*, *Lactuca graminifolia*, *Viguiera trilobata*, *Gentianella microcalyx*, *Hypericum formosum*, *Monarda menthaefolia*, *Stachys coccinea*, *Allophyllum gilioides*, *Ranunculus arizonicus*, *Diodia teres*, *Galium wrightii*, *Mimulus guttatus*, and *Glandularia bipinnatifida*. Typical grasses and grass-like plants are: *Cyperus aristatus*, *Agrostis scabra*, *Aristida longiseta* and *Echinochloa crusgalli*. The showy *Epilobium canum*, *Maurandya antirrhiniflora*, *Penstemon barbatus* and *P. linarioides* are important hummingbird foods.

The rich mixture of broadleaf tree species overtopped by scattered coniferous trees provides an unusually rich habitat for birds. Significantly, the Chiricahua localities with the most bird species (Cave Creek, East Turkey Creek, West Turkey Creek, and Ryolite Canyon) have Mixed Broadleaf Series vegetation well represented.
Interior Southwestern Riparian Deciduous Forest and Woodland: Cottonwood - Willow Series

Cottonwood - Willow Series vegetation is situated downstream from the Mixed Broadleaf Series along hydoriparian or mesoriparian drainages. Typically found in open canyons or on bajadas, the community is exposed to full sunlight and warm, dry air. The Cottonwood - Willow Series is usually found from 1,200-1,700 m (4,000-5,500 ft.) elevation in the Chiricahua Mountains.

*Populus fremontii* is usually the dominant tree species, although *Salix gooddingii* and *S. bonplandiana* may be locally co-dominant. *Platanus wrightii*, though present and of large size, is not dominant. Other trees include *Morus microphylla*, *Celtis pallida*, *C. reticulata*, *Fraxinus velutina*, and *Juglans major*. Smaller trees are *Prosopis glandulosa* and *Chilopsis linearis*. Shrubs can be well represented. Common ones are *Salix exigua* and *S. lasiolepis*, *Hymenoclea monogyra*, *Baccharis salicifolia*, and *Zizyphus obtusifolia*. *Sporobolus airoides* and *Bouteloua curtipendula* are common grasses. This vegetation type is uncommon in the Chiricahua but are found at San Simon Cienega and in lower Tex Canyon.

**Madrean Marsh, Lakes, Ponds, and Stock Tanks**

Today, these features in the Chiricahua range are mostly man-made. Groundwater pumping and reservoir construction have lowered the water table to the extent that natural marshes, like San Simon Cienega, are habitats of the past. In their stead, stock tanks (artificial reservoirs for watering cattle) have replaced the natural wetlands. Some stock tanks, like Headquarters Tank at Price Canyon Ranch, are of considerable size. Others, such as the watering trough at Anita Spring, are of infinitesimal size. Regardless of size, all open water is of importance because of its rarity. The larger stock tanks are bordered by Cattails (*Typha domingensis*), Willows (*Salix sp.*), Hackberry (*Celtis reticulata* or *C. pallida*), and Mesquite (*Prosopis velutina*).
Flora

The floras of Arizona and New Mexico are well known but complete plant lists have yet to be compiled for the Madrean Archipelago. Complete floras have been prepared for only 3 mountain ranges: Animas Mountains (Wagner 1973, 1979), Cooke's Range (Columbus 1988) and Rincon Mountains (Bowers and McLaughlin 1987).

Floras have been prepared for portions of several ranges: Sierra Ancha Experimental Forest (Pase and Johnson 1968); Coronado National Memorial (Ruffner and Johnson 1991); Garden Canyon (Stallcup 1991); Ramsey Canyon in the Huachuca Mountains (Toolin et al. 1980); Rosemont area in the Santa Rita Mountains (McLaughlin and Van Asdall 1977); Thomas Canyon in the Baboquivari Mountains (Toolin 1979); and Patagonia-Sonoita Creek Sanctuary (Fay 1978) and Sycamore Canyon (Toolin et al. 1979) in the Patagonia Mountains. Floras have been prepared for Chiricahua National Monument (Clark 1939; Reeves 1976), Fort Bowie National Historic Site (Warren et al. 1992), and Chiricahua Wilderness Area (Leithliter 1980; Russell 1982) in the Chiricahua Mountains. A flora for the Pinaleño Mountains compiled by Johnson (1988) was significantly amended by McLaughlin (1993). Whittaker and Neiring (1964, 1965) compiled a list of plants (not intended to serve as flora) from the low to middle elevations of the Santa Catalina Mountains to support their ecological work. Lacking sufficient data from high elevations, they augmented their list with high elevation collections made in the Pinaleño Mountains.

Sources of the Flora List

The checklist of vascular plants presented here was originally compiled from the holdings of the herbaria at Chiricahua National Monument (CHIR) in 1989, Fort Bowie National Historic Site (FOBO) in 1989, and Southwestern Research Station (SWRS) in 1990. To this list were added the plants collected by Leithliter (1980) and held at Chiricahua Wilderness Area Study (CHWA), Russell (1982), Rominger and Laurenzi (1986) and Fishbein (1993). Madrean Archipelago plants from the published and reliable unpublished sources listed above, were incorporated into the checklist as we became interested in floral similarities of the various ranges. The database now includes 2,012 subgeneric taxa.

While checking the original list against the holdings of the University of Arizona herbarium (ARIZ), new plants not on the list were found. We wanted to make the list as complete as practically possible and started searching ARIZ, ASU, and NMS herbaria for plants not already on the list. Examination of the approximately 400,000 sheets held for Chiricahua plants would require 1 year, and was impractical considering time and cost constraints.

We chose to sample the contents of all 3 herbaria by looking for plants most likely to occur. A list of those plants known from the greatest number of ranges in the vicinity of the Chiricahua Mountains was assembled. Three plants were known to occur in the Sierra Ancha, Santa Catalina, Rincon, Pinaleño, and Animas mountains, but not in the Chiricahua. The number of taxa shared by these ranges increases as the number of ranges considered in combination decreases. We chose for our search sample the total shared flora of all 2-range combinations.
which was 484 taxa. This search resulted in the addition of 236 taxa held exclusively by NMS, 32 by ASU and 170 by ARIZ, a discovery efficiency of 49%. The total Chiricahua sub-generic taxa in the list is 1,261 which are distributed among 1,240 species, 532 genera, and 103 families.

No statistically rigorous tests for Chiricahua checklist completeness were conducted. But when small plant lists, such as Rominger and Lorenzi (1986a, 1986b) and Fishbein (1993), were added to the Chiricahua database, we used the assumption:

\[ tx = \frac{(tm \times sn)}{ts} \]  
(Eq. 1)

where \( sn \) = taxa new to the main list; \( ts \) = taxa in the sample list; \( tm \) = taxa in the main list; \( tx \) = taxa as yet unknown

We estimate that the Chiricahua list is probably 85 to 90% complete.

Total sub generic plant taxa we list for the Chiricahua Mountains are distributed among 1 or more of these sources:

<table>
<thead>
<tr>
<th>CHIR</th>
<th>FOBO</th>
<th>SWRS</th>
<th>ARIZ</th>
<th>ASU</th>
<th>NMS</th>
<th>CHWA (ASU)</th>
<th>Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>641</td>
<td>354</td>
<td>828</td>
<td>179</td>
<td>41</td>
<td>40</td>
<td>267</td>
<td>134</td>
</tr>
</tbody>
</table>

**Botanical Exploration**

Lieutenant (later General) W.H. Emory traversed southern Arizona from the headwaters of the Gila River in New Mexico to its confluence with the Colorado approximately along the 33 parallel. His orders read (in part): "...in all cases where it did not interfere with other and more immediate military demands of the service, the attention of myself, and the officers assigned to duty with me, should be employed in collecting data which would give the government some idea of the regions traversed." (Emory, 1849)

His account began 2 August 1846 at Bent's Fort and continue through 8 October 1847. Plants collected by expedition naturalists J. M. Bigelow, C. C. Perry, A. Schott, G. Thurber, and C. Wright were described by Asa Gray, George Engelmann, and John Torrey. Although no collections were made in the Chiricahua Mountains, plants named in recognition of the collectors are common there. *Baccharis bigelovii* Gray, *Agave parryi* Engelmann, *Calliandra schottii* Torrey, *Anisacanthus thurberi* (Torrey) Gray, and *Garrya wrightii* Torrey are prominent examples of collections made on the Emory expedition of plants occurring in the Chiricahua Mountains.

Problems with Indians greatly impeded botanical exploration in southeastern Arizona, southwestern New Mexico, and adjacent Mexico. Relations between the Apache and the Spanish were not cordial in Eusebio Kino's time (1697-1712) with establishment of permanent settlements on the Sonoran frontier. The presidio at Tubac, established in 1757, was moved to Tucson in late 1776 to better protect the citizenry from Apache raids. These raids were so effective that between establishment of the Tucson Presidio and its occupation by United States
troops in 1856, the population of southern Arizona and Sonora declined. The ranges of the Madrean Archipelago in the Apache heartland were even more effectively guarded. Southeastern Arizona plant collectors, for the most part, confined their activities to the vicinity of the army posts at Fort Grant (1860-1872), Fort Huachuca (1877-present), Fort Lowell (1860-1890), and Fort Bowie (1862-1894) together with its satellite camps—Rucker (1879), Supply (1878), Powers (1872), Price (1881), and Crawford 1886 (Walker and Bufkin 1978).

John Gill Lemmon (1832-1908) brought his bride to Arizona where they collected heavily between 1880 and 1882. In 1881 the Lemmons made 15 collections of plants described as new to science near Fort Bowie and Camp Rucker, both within the bounds of the study area and apparently without incident (Crosswhite 1979). However during this period, while traveling between Tucson and Fort Huachuca through Apache country, the Lemmon family passed 2 burned out ranches whose occupants had been scalped. They camped out both nights. On the third day they were stopped by Apaches and searched. The Indians apparently concluded that collection and pressing of plants was the work of insane people, thus protecting the Lemmons from harm (Benson 1959).

Many of Lemmon's collections were described by Asa Gray and later by E. L. Greene. These authors named many of these plants in his honor or for his wife, Sara Allen Plummer Lemmon, including Asclepias lemmonii Gray, Bidens lemmonii Gray, Brickellia lemmonii Gray, Hieracium lemmonii Gray, Senecio lemmonii Gray, and Salvia lemmonii Gray. Sara Plummer Lemmon was remembered in specific epithets (Stevia plummerae Gray, Ipomoea plummerae Gray) and with genus Plumeria (Plumeria ambigens Blake, P. floribunda Gray). The plants described by Greene do not occur in our study area. Sara is also memorialized by the name of the highest peak in the Santa Catalina Mountains, Mt. Lemmon, named for her rather than for her more famous husband.

Jacob Corwin Blumer (1872-1948) made the first concentrated and one of the most important collection efforts in the Chiricahua Mountains. According to Bowers (1983), Blumer was born in Switzerland but emigrated with his parents to the United States in 1881. In 1902, he graduated from Iowa State College with a BSA and then attended the University of Michigan from 1904-1906. During his college years Blumer worked seasonally for the newly established Forest Service in Colorado, Idaho, and New Mexico. He may have acquired an interest in the Chiricahua during his work in New Mexico. Shortly after he left Michigan, Blumer relocated to Arizona and began collecting in the Chiricahua and Swisshelm mountains in August of 1906. In 1907 and 1908 he worked as a research assistant at the Carnegie Institution's Desert Laboratory. By 1909 he was back in the field collecting in the Santa Catalina, Rincon, Santa Rita, and Pajarito mountains in Arizona, and then in the Comobabi, Quijotoa mountains and in Sonora, Mexico. Between 1913 and 1916, Blumer worked in Canada but then came back to Arizona to collect in the Harcuvar Mountains. In 1917 he left the world of botany, returning to the Midwest to work on his brother's farm. Blumer died of a heart attack in Ortonville, Minnesota, in 1948.
Blumer wrote about his Chiricahua work: "In 1906 and 1907, ten months were given to the exploration of this range, some 1,600 miles covered within its bounds, and about 1,050 species of plants collected. Undoubtedly many other higher plants may be found." (Blumer 1909, p. 720).

In his own hand, Forrest Shreve made a list of 524 Blumer collections which have survived at ARIZ among Forrest Shreve's notes titled: "Enumeratio Plantarum quas in Montibus Chiricahuensibus collegit J.C. Blumer annis 1906-1907." This list shows species collected, general location, date of collection, and field number between 10 August 1906 and 24 October 1907. Blumer used 2 kinds of field numbers: one was apparently a provisional (i.e., N26½, U6a, N27) and the other (often listed as equivalent) were 4 digit numbers (i.e., 1606, 1723, etc.). The dates are presented in strict chronological order but these are often at variance with the numerical sequence of his collection numbers. The lowest number on Shreve's list is 1231 and the highest is 2267 which accounts for 1,036 of the 1,050, but only 524 collections are given. Even with the omissions, some listed collections are duplicates making it difficult to see how "about 1,050 species" could have been collected. We suspect that Blumer meant that he made 1,050 collections rather than collected 1,050 species.

Blumer's most collected locality was Barfoot Park where 16% of his collections were made. Paradise (he boarded at the sawmill there) was represented by 12% of his specimens. Blumer must have been a familiar sight at the ranches. He made collections at Miss Rhoda Riggs' Ranch, Erickson's Ranch, Joe Smith's Ranch, and at Wilgus Ranch. At Stephans' Ranch in Pinery Canyon, Bettie Stephans (the daughter of the family) collected Castilleja minor (Blumer 1810) on 24 October 1907 at the ranch for him.

In 1939, 6 years after Chiricahua National Monument was established, Ora M. Clark reported that an active collection program was under way (Clark 1939a, b). Clark and custodian Frank Fish made 446 collections with the assistance of 2 Civilian Conservation Corps (CCC) workers. The mounted sheets were sent to ARIZ for determination by John Thornber and Lyman Benson. At this time the park herbarium had plants representing 77 families, 197 genera, and 333 species. A year later Clark (1940) reported that the collection had grown to 80 families, 257 genera, and 467 species. The outbreak of war in 1941 and the closing of the CCC camp reduced botanizing for the duration of World War II.

Dr. Jack S. McCormick, American Museum of Natural History (AMNH), began an intensive collecting project for the Chiricahua range beginning in 1958. McCormick and his crew of locally recruited collectors worked out of the AMNH's Southwestern Research Station (SWRS) at Portal for the next 3 years. Approximately 700 subgeneric taxa were collected and a herbarium of 1,500 sheets was organized. Faculty and staff at ARIZ provided significant assistance with plant identifications. McCormick moved from AMNH to Ohio State University in 1961 and the Chiricahua project came to a halt about 1 year later. Other acquisitions to the herbarium were made slowly over the years. The herbarium now holds 877 subgeneric taxa and is a valuable regional botanical resource.
Marina and Bill Hoy, custodians of Fort Bowie National Historic Site (FOBO), collected the flora of this 405 ha area between 1972 and 1977. Additional specimens were collected by Paul Fugate, the National Park Service ranger who vanished without a trace while on duty in 1980. Peter Warren (1992) reworked the flora and completed a vegetation map. A small herbarium housing the FOBO collections is kept at FOBO headquarters and is distinct from that of CHIR. A total of 471 subgeneric taxa are distributed in 274 genera in 75 families.

Reeves (1976), working under the guidance of Don Pinkava (ASU), expanded the Clark (1939) CHIR list by 33%. Twenty-five collecting trips were made between August 1974 and September 1975. In addition, the entire months of June and July 1975 were spent in the field. Almost 2,700 specimens were collected and identified, and 1,700 were deposited at CHIR and ASU. Reeves reports finding 672 subgeneric taxa distributed among 352 genera in 91 families on the 2,600 ha (6,410 ac.) within Chiricahua National Monument.

Leithliter (1980), another of Don Pinkava's students, prepared a flora of the Chiricahua Wilderness Area, an area of 7,000 ha (18,000 ac.) in the heart of the range. The area extends from an elevation of 1,800 m (5,900 ft.) at Cave Creek to 2,986 m (9,794 ft.) at the summit of Chiricahua Peak. Between May 1975 and September 1976, Leithliter collected 297 species representing 196 genera and 66 families on 14 collecting trips. His vouchers are deposited at ASU.

Russell (1982) sampled vegetation in 12 high altitude meadows (parks) in the Chiricahua Mountains. He identified and listed 68 meadow species during his study but did not indicate if voucher collections were made, and if so, where they were deposited. No Russell exsiccatae were found at ARIZ or ASU.

Fishbein (1993) made plant collections at Centella Point, documenting plant succession following a prescribed fire set in 1988. Data, based on his collections deposited at ARIZ, have been incorporated into the checklist.
Phytogeography

Origins of the Madrean Evergreen Woodland can be traced to the Paleocene in the southern United States and northern Mexico. Although this woodland arose at approximately the same time as did the coniferous forests and California scrublands, it has a different developmental history and occupies a very different environment. Today its center of distribution lies in the Sierra Madre (Madrean) of Mexico and extends northward into the mountains of southeastern Arizona (Fig. 2), south of the Catalina Mountains and east of the Baboquivari Mountains (Lowe 1961, Neiring and Lowe 1984). It generally occurs in a belt at elevations between 1,700 m (5,500 ft.) and 2,100 m (7,000 ft.) and is bordered by desert grassland below and coniferous forest above.

Axelrod (1959) recognized 3 basic floral elements residing in North America about 75 million years ago at the beginning of the Tertiary: (1) the Arcto-Tertiary Geoflora, (2) the Neotropical-Tertiary Geoflora, and (3) the Madro-Tertiary Geoflora. A geoflora is a large assemblage of plants persisting in time and space. The Arcto-Tertiary Geoflora is represented today by the Canadian forests and coniferous forests of the Pacific Coast and Rocky Mountains. The Neotropical-Tertiary Geoflora has a more complex history. Its taxa are represented in the subtropical forests found today from Panama north into Mexico. The Madro-Tertiary Geoflora was derived largely from the Neotropical-Tertiary Geoflora with a minor contribution from the Arcto-Tertiary Geoflora. The Madro-Tertiary Geoflora is the youngest and has a much stronger affinity with the tropical floras than it does with those of the montane or coastal West. Today's Madrean woodland communities in the Southwest and the northern Sierra Madre are Madro-Tertiary derivative assemblages.

Under the influence of spreading dry climatic conditions during the middle Eocene, vegetation evolved from preexisting dry tropic and warm temperate broad-leaved sclerophyllous plants in what is now the southern United States and northern Mexico. During the later Pliocene, summer precipitation diminished in the Far West, differentiating the vegetation into summer-wet and summer-dry types. The summer-dry taxa developed into the California Chaparral. Summer-wet vegetation was gradually eliminated in the Far West and now occupies the mountains of southeastern Arizona extending southwestward into the Sierra Madre Occidental where the climate is summer-wet. This vegetation now comprises the Madrean Evergreen Forest and Woodland (Axelrod 1958; Brown, Lowe, and Pase 1980).

Species Richness

Brady (1973), Bowers and Mclaughlin (1982, 1987), and Wentworth (1985) have characterized the Madrean ecosystems of southeastern Arizona as species rich and present several reasons for the phenomenon. Perhaps the most important reason is that 3 major floral Pliocene-Pleistocene segregates of the Arcto-Tertiary and Madro-Tertiary inhabit these mountains and their pediments: (1) a northern element (forest and tundra) at higher elevations; (2) a younger (woodland and chaparral) mixed southern element at middle elevations; and (3) the deserts, which are very young, lie on the pediments (Axelrod 1958; Lowe 1964). These elements, in effect stacked one upon the other, contribute to a rich vegetation and flora.
A second reason for species richness, suggested by Brady (1973) and Wentworth (1985), is that the scattered canopy of the Madrean woodlands creates a heterogeneous environment supporting a number of herbaceous species. These authors cite the high species diversity of savanna ecotone between the Semi-desert Grassland and the Madrean Oak Woodland as evidence.

A third source of richness is the presence of aquatic habitats (Weber 1973; Bowers and McLaughlin 1982). Aquatic habitat presence is promoted by bi-seasonal precipitation where the summer rains restart mesoriparian stream flow, by topography that includes high elevation peaks and ridges that increase precipitation, and by the ground storage within the fractured Tertiary welded tuffs.

The fourth factor promoting species richness is the presence of canyon environments (Bowers and McLaughlin 1982). Bennett and Kunzmann (1992a, b) correlated species richness with "canyon-ness" or the Dissection Index (DI), an empirical statistic defined as the absolute value of elevational change along 2 linear transects, placed at right angles, that cross at the highest summit divided by the sum of the distances between the pediments of the transects. Thus:

\[ DI = \left| \frac{\text{Elevation Change} \times \text{Transect Length}}{\text{Transect Length}} \right| \]  

(Eq. 2)

Results of DI calculations for the Animas, Chiricahua, Rincon, Santa Catalina, Pinaleño, and Sierra Ancha mountains are presented in Table 2.
Table 2. Flora Characteristics of 6 Ranges of the Madrean Archipelago

<table>
<thead>
<tr>
<th>Range</th>
<th>Species Listed</th>
<th>Percent Madrean</th>
<th>Percent Rocky Mtn.</th>
<th>Relative Richness (R)</th>
<th>Dissect. Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animas</td>
<td>663</td>
<td>23.7</td>
<td>4.5</td>
<td>33.5</td>
<td>0.50</td>
</tr>
<tr>
<td>Chiricahua</td>
<td>1240</td>
<td>27.3</td>
<td>5.2</td>
<td>26.4</td>
<td>0.28</td>
</tr>
<tr>
<td>Rincon</td>
<td>884</td>
<td>20.1</td>
<td>4.1</td>
<td>28.0</td>
<td>0.17</td>
</tr>
<tr>
<td>Catalina</td>
<td>876</td>
<td>19.5</td>
<td>5.4</td>
<td>5.0</td>
<td>0.21</td>
</tr>
<tr>
<td>Pinaleño</td>
<td>848</td>
<td>17.7</td>
<td>7.1</td>
<td>1.8</td>
<td>0.21</td>
</tr>
<tr>
<td>Ancha</td>
<td>716</td>
<td>15.1</td>
<td>6.0</td>
<td>-8.0</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Floras with higher gamma diversity (Table 1, Eq. 3) tend to have higher Madrean taxa representation than do those with less (Bowers and McLaughlin 1982). Ranges with higher dissection indices (Eq. 1) also have higher gamma diversity and greater Madrean representation. These relationships do not appear to apply to the Rocky Mountain flora element.
Bowers and McLaughlin (1982) explored collection effort and montane elevational range as predictors of gamma diversity (Whittaker 1972) for subgeneric taxa (see Eq. 3). Comparison of expected taxa number with the number collected yields relative diversity (Eq. 3). \( S_{E,T} \) is strongly influenced by the collection effort, \( T \), which can be easily estimated for floral lists based on a well defined collection effort. Reeves (1976), cited collections made at Chiricahua National Monument between 1938 and the date of his thesis, an interval of 36 years. However, determining \( T \) for the Chiricahua checklist is much less certain since it is based on exsiccatae from Lemmon (1881) to the present day, a span of more than 100 years. This is clearly too great a number \((T=100)\) since Lemmon did not collect intensively in the locality in 1881 and there was a hiatus between Lemmon's time and the Blumer collections (1906-1907). Clearly this lapse in time should not be included in \( T \) since no collection effort was being expended. Likewise, O.M. Clark collected at CHIR in 1938 but the effort languished during the war years. McCormick's SWRS effort lasted 3 years (1959-19620), Marina and Will Hoy collected at FOBO off and on between 1972 and 1977, and Leithliter spent 1 year collecting the CHWA. The upshot is that the collection effort for the Chiricahua and most other ranges was sporadic and must be estimated (Table 3).

\[
S_{E,T} = 47 + 0.349E + 8.20T
\]

(Eq. 3)

\[
R = \frac{100 \left( S - S_{E,T} \right)}{S_{E,T}}
\]

(Eq. 4)

Where:
- \( E \) = Elevation range in meters
- \( T \) = Collecting time in years
- \( s_{EA} \) = Expected number of species
- \( R \) = Relative Richness

Bowers (1981) and Bowers and McLaughlin (1982) listed and assembled data from local Arizona floras. Gamma species diversity was modeled from those data as a function of collection effort and elevation differential elevation:

When compared with local floras scattered statewide, Madrean floras show more positive species richness values than do those that are Madrean-poor (Bowers 1981; Bowers and McLaughlin 1982). Consistently higher- than-predicted species counts suggest that the Madrean flora contributes to high species richness.

Bennett and Kunzmann (1992) determined DI (Eq. 1) and \( R \) (Eq. 3) for Madrean plants extracted from the Santa Catalina, Rincon, Pinaleño, Animas mountains and Sierra Ancha (Table 2) and determined that the correlation was high \((R^2=0.89)\). Similarly when \( R \) was calculated for Rocky Mountain plants the correlation was \( R^2=-0.32 \). These results suggest that there is a strong relationship between "canyon-ness" Madrean species richness.
Table 3. Input Data for Estimation of Species Numbers

<table>
<thead>
<tr>
<th>Range</th>
<th>Taxa Listed</th>
<th>Elev. Diff.(m)</th>
<th>Effort (yrs.)</th>
<th>Est. Species Number ($S_{E,T}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animas</td>
<td>663</td>
<td>1171</td>
<td>5</td>
<td>497</td>
</tr>
<tr>
<td>Chiricahua*</td>
<td>1240</td>
<td>1736</td>
<td>40</td>
<td>981</td>
</tr>
<tr>
<td>Rincon</td>
<td>884</td>
<td>1727</td>
<td>5</td>
<td>691</td>
</tr>
<tr>
<td>Catalina*</td>
<td>876</td>
<td>1786</td>
<td>20</td>
<td>834</td>
</tr>
<tr>
<td>Pinaleño*</td>
<td>848</td>
<td>1783</td>
<td>20</td>
<td>833</td>
</tr>
<tr>
<td>Sra. Ancha</td>
<td>716</td>
<td>1273</td>
<td>35</td>
<td>584</td>
</tr>
</tbody>
</table>

* Flora≥ 10 percent incomplete.
A fifth factor promoting species richness is the presence of edaphic conditions which provide additional localized habitats. Limestone soils provide habitats for 84 species of calciphiles (i.e., Dyschoriste decumbens, Rhus microphylla, Haplophyton cimicidum, Macrosiphonia brachysiphon, Asclepias macrotis, Escobaria tuberculosa, Brickellia baccharidea, Flourensia cernua, Calylophus hartwegii ssp. pubescens, Ipomopsis longiflora, Ceanothus fendleri, and Chamaesarachia sordida). Thin soil pockets perched on rhyolite cliffs support species such as Cheilanthes feei, C. lendigera, Asplenium resiliens, Perityle cochisensis, Sedum griffithsii, Apacheria chiricahuensis, and Holodiscus dumosus.

Geographic Affinities of the Flora
The flora of the Chiricahua Mountains is primarily derived from the Apachean and adjacent Madrean, Chihuahuan, Rocky Mountain, and Sonoran (Dice 1943, Dasmann 1972) floras (See Table 3). Additional widely distributed species are also present in significant numbers. We follow Whittaker and Neiring (1964) for delineation of more distant regions which is presented subsequently.

Species of Madrean geographic distribution are better represented than are those of any other region and their presence is probably related to the high gamma diversity of the flora. More Chihuahuan taxa are represented than are Sonoran, in part a representation of the flora evolving at higher elevations on the Alta Plano between the Sierra Madre ranges. The Sonoran flora evolved at lower elevations to the west of the Sierra Madre.

Apachean (Madrean Archipelago endemic) plants comprise 5.7% (71 species) of the Chiricahua flora and another 21.3% (264 species) have their centers of distribution in the Sierra Madre Occidental. Only the Animas Mountains of New Mexico have a greater percentage of Madrean plants (Bennett and Kunzmann 1992a). Chihuahuan plants are well represented (9.7%) on the Chiricahua pediments and foothills while Rocky Mountain species (5.2%) mostly occur at higher elevation. The bulk of the flora is composed of "Southwestern" and "Western" plants (29.8%) and species of the north and east ("All Other" in Table 3) comprise the balance (23.0%) of the flora. Only 75 species (6.0 %) are introduced, a low figure considering how intensively the resources of the Chiricahua have been utilized for grazing and lumbering in the past. Latin American (tropical Mexico and further south) plants are relatively uncommon (3.0%), considering that flora of the Chiricahua and other ranges of the Madrean Archipelago have stronger southern than northern affinities.

Percentages of the Chiricahua life forms compared with those compiled worldwide (average) indicate a warm temperate flora. Below average number of phanerophytic (woody) taxa show a non-tropical origin. The greater than average representation of therophytes may indicate either a still evolving xeric flora or development of disclimax related to past agricultural practices.
Table 4. Geographic Distribution of the Chiricahua Flora

<table>
<thead>
<tr>
<th>Distribution</th>
<th>No of Species</th>
<th>Percent of Flora</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madrean (Apachean)</td>
<td>71</td>
<td>5.7</td>
</tr>
<tr>
<td>Madrean (other)</td>
<td>264</td>
<td>21.3</td>
</tr>
<tr>
<td>Total Madrean</td>
<td>335</td>
<td>27.0</td>
</tr>
<tr>
<td>Rocky Mountain</td>
<td>64</td>
<td>5.2</td>
</tr>
<tr>
<td>Chihuahuan</td>
<td>120</td>
<td>9.7</td>
</tr>
<tr>
<td>Sonoran</td>
<td>29</td>
<td>2.3</td>
</tr>
<tr>
<td>Southwestern</td>
<td>256</td>
<td>20.6</td>
</tr>
<tr>
<td>Western</td>
<td>114</td>
<td>9.2</td>
</tr>
<tr>
<td>Latin American</td>
<td>37</td>
<td>3.0</td>
</tr>
<tr>
<td>All Other</td>
<td>285</td>
<td>23.0</td>
</tr>
<tr>
<td>Introduced</td>
<td>75</td>
<td>6.0</td>
</tr>
</tbody>
</table>
Table 5. Chiricahua Flora Life Forms

<table>
<thead>
<tr>
<th>Life Form</th>
<th>No. Spp</th>
<th>Pct. Flora&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Pct. Worldwide&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phanerophytes</td>
<td>144</td>
<td>11.6</td>
<td>46</td>
</tr>
<tr>
<td>Chamaephytes</td>
<td>115</td>
<td>9.3</td>
<td>9</td>
</tr>
<tr>
<td>Hemicryptophytes</td>
<td>429</td>
<td>34.6</td>
<td>26</td>
</tr>
<tr>
<td>Geophytes</td>
<td>136</td>
<td>11.0</td>
<td>6</td>
</tr>
<tr>
<td>Therophytes</td>
<td>267</td>
<td>21.5</td>
<td>13</td>
</tr>
<tr>
<td>Undetermined</td>
<td>149</td>
<td>(12.0)</td>
<td>—</td>
</tr>
</tbody>
</table>

<sup>1</sup> Excluding species of undetermined life form.

<sup>2</sup> Braun-Blanquet, 1965, p. 298.
Structure of the List
To achieve simplicity of use and economy of space, the checklist is presented in a rigidly structured manner. The data are contained in 19 fields. In the following empirical example, the numbers in parentheses are the field numbers and are keyed to the explanations that follow:

(1) Technical name (2) Authors
(3) Synonymous technical names
(4) Common names

Field 1. Technical name is that used by Kartesz (1994). Cultivar names are preceded by an asterisk.
Field 2. Presentation of author names is standardized using Munz and Keck (1974), Correll and Johnston (1970), Brummitt and Powell (1992). In the interest of simplicity, occasional exceptions were made in usage from these sources (See Appendix 1).
Field 3. Sources used for synonyms were Benson and Darrow (1981), Kartesz (1994), Kartesz and Kartesz (1980), Lehr (1978), and Lehr and Pinkava (1980, 1982).
Field 4. Vernacular names were taken from various sources, mostly Kearney et al. (1960) (1964) and Benson and Darrow (1981). In no case did we create vernacular name by transliteration of the technical binomial.
Field 5. Distributional elevations are presented in feet from low to high. Values enclosed in brackets represent data from localities other than the Chiricahua Mountains.
Field 6. Months of flowering are based on collections of suitable material represented in the herbaria. Months enclosed in brackets represent data from localities other than the Chiricahua Mountains.
Field 7. Growth and life forms are taken from Raunkaier (1934) and are given to generally describe plant physiognomy, a purpose beyond Raunkaier's intent. They are presented in this checklist to give a crude description of the appearance of the plants.

The life forms (presented before the growth form) following: the first life form is woody plants with a single stem greater 2 m tall. Trees are subdivided as broadleaf deciduous, broadleaf evergreen, pinnate leguminous, needleleaf evergreen, or succulent. The second life form is shrubs are plants more than 1.9 m tall with multiple woody stems. Shrubs are subdivided as broadleaf deciduous, broadleaf evergreen, pinnate leguminous, narrow leaf dicot, stem-succulent, spinose deciduous, spinose evergreen, monocot rosette, suffrutescent, green-stemmed (deciduous leaves or none), woody vines or climbing semi-shrubs, and parasites. The third form
is herbs which are non-woody plants subdivided as deciduous ferns, evergreen ferns, perennial graminoids (including perennial grasses), winter annual grass, summer annual grass, perennial deciduous forbs (other than ferns or grasses), evergreen perennial forbs, (including leaf succulents), winter-annual forbs, and summer-annual forbs.

Field 8. The first growth form is the phanerophyte which is woody plants (except for epiphytes) more than 0.25 m tall which are subdivided by their stature (i.e., woody-stemmed vines, epiphytes, megaphanerophytes [more than 30 m tall], mesophanerophytes [8 to 29 m tall], microphanerophytes [2 to 7 m tall], nanophanerophytes [more than 0.25 to 1.9 m tall], rosette shrubs [yucca, agave], and stem-succulents [cacti]).

The second growth form category is the chamaephytes which are low shrubs (less than 0.25 m tall). They are subdivided as woody low or sub-shrubs, suffrutescent, rosette-shrub, and low stem-succulents (small cacti).

The third growth form category is the proto-chamaephytes, which are intermediate between chamaephytes and hemicryptophytes and are subdivided as scapose or leafy stemmed, rosette, semirosette (like a rosette but without the leaves being entirely basal, spreading or prostrate, and twining). This growth form is not prominently represented in the Chiricahua flora.

The fourth, and most important, growth form is the hemicryptophyte. They are perennial herbaceous plants with their perenniating organs at or near the ground surface. The hemicryptophyte form is subdivided as scapose, rosette, semirosette, spreading or prostrate, and twining hemicryptophyte.

The fifth growth form is the geophyte. They are plants whose perenniating organs are beneath the ground surface. The geophyte form is subdivided as bulbs, rhizomes, or phytophagous (root parasite).

The final growth form is the therophyte or annual plant. The therophyte form is subdivided as scapose or leafy-stemmed, rosette, semirosette, spreading or prostrate, or twining.

Field 9. Leaf sizes we report are classified by Braun-Blanquet (1965:296) as mesophyll (25.26 cm² to 182.25 cm²); microphyll (226 mm² to 20.25 cm³); nanophyll (25.1 mm² to 225 mm³); and leptophyll (<25 mm²). Leaf textures are orthophyll (leaves of normal texture, sclerophyll (hardened or coriaceous texture), succulent (fleshy leaves); and membranous (very thin and soft).

Field 10. The usual habitat for each plant is briefly described on the basis of herbarium labels, flora lists for the Chiricahua Mountains (Reeves, Leithliter, Warren), or personal observation. In some cases, published descriptions (Kearney and Peebles, Benson, Benson and Darrow) were consulted and were floras for other ranges in the Madrean Archipelago (Bowers and McLaughlin, Wentworth, Wagner, Johnston, Garcia-Perez). We attempted to limit descriptor vocabulary by not distinguishing between terms like river, stream, brook, rill, and creek. We did distinguish riparian habitats as being hydro-, meso-, or xeroriparian.
We also distinguished between water courses in canyons and arroyos. Landform terminology generally follows American Geological Institute (1960). We avoided using community names in habitat descriptions to the extent possible, relying instead on lists of associated species (field 11).

Field 11. Names of other plants, often those defining the community type, are included here when they are known. These plant names came from the same general sources as the habitat information (Field 10), and may contain names of plants that have not been vouchered.

Field 12. Distributions within the Chiricahua Mountains are presented first. General localities are separated by semicolons (Wilderness Area; Cave Creek; San Simon Valley), but localities within a general locality are separated by comas after the initial term which is usually connoted by "on," "at," "in," or another preposition. Thus a collections on Sugarloaf Mountain and Massai Point would read: "Chiricahua Mts.: Chiricahua Nat. Mon on Sugarloaf Mtn., Massai Point; . . ."

Field 13. Distributions on other ranges of the Madrean Archipelago, are separated by comas with detailed distribution within the ranges omitted.

Field 14. Distributions by counties (mostly within Arizona) are from Kearney and Peebles (1960) modified by herbarium data.

Field 15. Distribution by states is taken from published floras, primarily Kearney and Peebles (1960), Munz and Keck (1974), and Correll and Johnston (1960).

Field 16. Biogeographic center of abundance concept follows Whittaker and Neiring (1965) but has been modified to reference the biogeographic provinces of Dice (1943) Dasmann (1972) and Brown, Lowe and Pase (1979, 1980). Distributional data for many species is incomplete causing assignment to a distributional category to be arbitrary in some cases. Never-the-less, the spatial affinities of the flora is important enough to overlook this problem. Listed below are the biogeographical areas used.

Endemic—distribution limited to the mountains of southeastern Arizona, southwestern New Mexico, northern Sonora and northern Chihuahua (i.e. the Madrean Archipelago). —Approximates the Apachean biogeographic province.

Madrean—montaine distribution of wider extent than above, includes the Sierra Madre Oriental and Occidental massif and Mexican highlands. —Same the Madrean biogeographic province of authors cited.

Chihuahuan—non-montaine eastern Arizona to Texas and southward in (or beyond) Chihuahua and Coahuila at low elevation. Includes the Chihuahuan and Tamaulipan biogeographic provinces of the authors cited.

Sonoran—Arizona west of the Santa Rita Mountains on low ground to southeastern California and southward in Sonora and Baja California. Coincides with the Mohavian and Sonoran biogeographic provinces of the authors cited.

Rocky Mountain—the mountains of the central and northern Arizona plateau and the cordillera of central New Mexico and the Rocky Mountains of Canada. It coincides with
the Rocky Mountain biogeographic province of Dice (1943) and Dasmann (1972) but includes the Mogollon (Interior) of Brown, Lowe, and Pase (1979).

Plains—distributed from the Southwest to the grasslands of Texas and northward east of the Rocky Mountains. It coincides with the Plains biogeographic province of the authors cited.

Southwestern—distribution extending from the more arid portions of west Texas, New Mexico, California and northern Mexico. Included are the southern Plains, Tamaulipan, Chihuahuan, northern Madrean, Apachean, northern Sonoran, Mogollon, Mohavian, Californian, southern Great Basin, and southern Rocky Mountain biogeographic provinces of the authors cited.

Western—widely distributed in western North America. Included are the Southwestern, defined above and the balance of the Plains, the Great Basin, and the Rocky Mountain biogeographic provinces.

Temperate—Western, as defined above, Southeastern, Eastern, and Gulf Coast biogeographic provinces.

Northern—widely distributed in Canada and southward in mountains including the Sierran, northern (Canadian) Rocky Mountain, Alaskan, and Canadian biogeographic provinces of the authors cited.

Holarctic—distributed in both North American and Eurasia.

Latin America—extending into Central America or occurring also in South America.

Introduced—species that are adventive or naturalized from regions distant enough to rule out spread by non-human means.

Cultivar—species intentionally introduced for agricultural purposes and which have not become adventive or naturalized.

Field 17. Notes about uses and usefulness as well as items of unusual interest about the plants are included when they have been encountered.

Field 18. Citations to literature encountered during assembly of the checklist are listed in "Literature Cited" and the brief reference is given here. These citations are not necessarily the most definitive or recent treatments of the taxon and are included for what value they may have.

Field 19. Exsiccatea have been compiled primarily by examination of specimens at the Chiricahua National Monument (CHIR), at Fort Bowie National Historic Site (FOBO), and Southwestern Research Station (SWRS), near Portal, Arizona. The collections at University of Arizona (ARIZ), Arizona State University (ASU), and New Mexico State University (NMC) were consulted to augment the holdings of the first three herbaria listed.
PTERIDOPHYTA

ADIANTACEAE—Maidenhair-fern

Family.
A family of approximately 200 species mostly distributed in the American tropics.

Adiantum capillus-veneris L.

Adiantum capillus-veneris var. modestum
(Underwood) Fern., A. capillus-veneris var. protrusum Fern., A. modestum Underwood
Maidenhair fern, culantrillo

[1,500] - 6,000 [7,000] ft. Evergreen fern, rhizome geophyte; mesophyll, orthophyll. Rare on mesic shaded or partly shaded slopes, hydro- and mesoriparian canyons or ravines; rocky, sandy or loamy soils.

Chiricahua Mts.: Cave Creek Falls. Also Sierra Ancha and throughout most of the state. Virginia south to Florida, west to Kentucky, Tennessee, Missouri, Texas, and Arizona; tropical America; Eurasia.

Exsic: SWRS [Morse s.n.].

Adiantum pedatum L.

Common maidenhair fern


Temperate.

Exsic: SWRS [Roth Pinkava 36].

Argyrochosma limitanea (Maxon) Windham

ssp. limitanea

Cheilanthes limitanea (Maxon) Mickel, Notholaena limitanea Maxon, Pellaea limitana (Maxon) Morton


Chiricahua Mts.: Chiricahua Nat. Mon.; Southwestern Research Station; Ava Ranch; Fort Bowie Nat. Historic Site; Paradise on ridge above Epley’s mine; Hands Pass; Cave Creek; Winn Falls. Also Huachuca Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Sierra de los Ajos, Swisshelm Mts. Coconino County to Cochise, Santa Cruz, Pima and Yuma counties.

Western Texas to southern Utah and Arizona. Sonora, Mexico. Madrean.


Bommeria hispida (Mett. ex Kuhn)

Underwood

Gymnopoteris hispidis (Mett. ex Kuhn) Underwood

Hairy bommeria

[4,000] 5,200 - 5,900 [7,700] ft. Evergreen fern, rhizome geophyte; mesophyll, orthophyll. Common on south-facing sunny dry slopes, flats, and arroyos; partial shade at lower elevations; gravelly to sandy soil.


Exsic: CHIR [Clark 8343, Reeves 1463, 1472, 1510]. SWRS [Orndway 70]. FOBO [MHoy 63].

Cheilanthes arizonica (Maxon) Mickel

Cheilanthes pyramidalis Fée var. arizonica (Maxon) Broun

Lip fern

7,000 ft. Evergreen fern, rosette hemicryptophyte. North-facing canyon slope.


Exsic: CHWA [Phillips 2858].

42
Cheilanthes bonariensis (Willd.) Proctor

*Notholaena aurea* (Poir.) Desv.

Cloak fern


**Cheiridopsis eateoni** Baker

*Cheilanthes castanea* Maxon

Lip fern

[3,800] 5,400 - 6,700 [8,000] ft. Evergreen fern, rhizome geophyte; mesophyll, sclerophyll. Common on sunny south-facing slopes, and flats at higher elevations; partial sun and xerophytes washes at lower elevations; rocky or gravelly soil. *Quercus emoryi*, *Q. arizonica*, *Q. grisea*, *Juniperus deppeana*, *Pinus discolor*, *Nolina microcarpa*.

**Cheiranthes feei** T. Moore

Slender lip fern


**Cheilanthes pringlei** Davenport

Lip fern


**Cheilanthes wootonii** Maxon

Beaded lip fern

[3,000] 5,300 - 6,900 [9,000] ft. Herbaceous evergreen fern, rhizome geophyte. Common on rocky partly shaded or shady slopes or mesoriarian canyons; among boulders.

Cheilanthes eateoni Baker

*Cheilanthes castanea* Maxon

Lip fern

[3,800] 5,400 - 6,700 [8,000] ft. Evergreen fern, rhizome geophyte; mesophyll, sclerophyll. Common on sunny south-facing slopes, and flats at higher elevations; partial sun and xerophytes washes at lower elevations; rocky or gravelly soil. *Quercus emoryi*, *Q. arizonica*, *Q. grisea*, *Juniperus deppeana*, *Pinus discolor*, *Nolina microcarpa*.

**Cheiranthes feei** T. Moore

Slender lip fern


**Cheilanthes pringlei** Davenport

Lip fern


**Cheilanthes wootonii** Maxon

Beaded lip fern

[3,000] 5,300 - 6,900 [9,000] ft. Herbaceous evergreen fern, rhizome geophyte. Common on rocky partly shaded or shady slopes or mesoriarian canyons; among boulders.
Cheilanthes wrightii Hook.
Lip fern


Exsicc: CHIR [Clark 9114, Reeves 2271, 3371, 4040]. FOBO [MHoy 62].

Notholaena grayi Davenport ssp. grayi
Cheilanthes grayi (Davenport) Domin
Cloak fern

[4,000] 5,150 - 5,450 [6,000] ft. Evergreen fern, rosette hemicryptophyte. Rare among rocks on sunny dry south-facing slopes with shrubs.


Exsicc: CHIR [Reeves 1250, 3386, 3481].

Notholaena standleyi Maxon
Cheilanthes hookeri (Kummel.) Domin
Cloak fern

[1,000] 5,400 - 6,500 ft. Evergreen fern, rosette hemicryptophyte. Uncommon on warm sunny slopes on cliffs, ledges, and among rocks.


Exsicc: CHIR [Reeves 3385, 3482, 4074]. SWRS [Roth s.n.]. FOBO [MHoy 399]. ARIZ [Windham and Yatskievych 82-217, Ganton 16879].

Pellaea intermedia Mett. ex Kuhn
Cliff brake


Chiricahua Mts.: Chiricahua Nat. Mon. Also Sierra Ancha. Mountains of Gila, Cochise, Santa Cruz, and Pima counties. Southwestern Texas to Arizona and Mexico.

Exsicc: CHIR [Clark 8441, Reeves 2396, 2449, 3936].

Pellaea truncata Goodding
Pellaea longimacronata aust. non Hook.
Cliff brake

[2,000] 5,000 - 6,500 [8,000?] ft. Evergreen fern, rosette hemicryptophyte. Rare on dry wooded slopes among rocks at higher elevations; mesoroparian canyon cliffs and crevices at lower elevations.


Cronquist, et al. (1972).

Exsicc: CHIR [Clark 8342, Reeves 1335, 2370]. SWRS [Roth s.n.]. FOBO [MHoy 61].

Pellaea wrightiana Hook.
Pellaea ternifolia (Cav.) Link var. wrightiana (Hook.) A. Tryon
Cliff brake

[4,000] 5,190 - 7,000 [8,000?] ft. Evergreen fern, rosette hemicryptophyte. Common in rocky places throughout and on cliffs, especially in canyons and shallow drainages.


Exsicc: CHIR [Clark 8268, 8588, Reeves 1882, 2371, 3490, 3609, 3846]. SWRS [Nockunus s.n., Ordway s.n.].

ASPLENIACEAE—Spleenwort Family.
A widely distributed family but mainly in tropical and subtropical regions. 12 genera with 700 species. Asplenium (650 species) is nearly cosmopolitan.

Asplenium resiliens Kunze
Black-stem spleenwort


Chiricahua Mts.: Chiricahua Nat. Mon.; South Fork Cave Creek. Sierra Ancha. Coconino County and the mountains of Greenlee, Graham, Gila, Cochise, and Yuma counties. Southern Pennsylvanian south to Florida, west to Illinois, Oklahoma, New Mexico, and Arizona; Jamaica; Mexico. Temperate, Latin America.
Asplenium trichomanes L.  
Maidenhair spleenwort  
[6,000] 6,400 - 6,700 [9,600] ft. Evergreen fern, rosette hemicryptophyte. Rare on mesic slopes at higher elevations; deep ravines at lower elevations, especially in crevices on rhyolite boulders.  
Chiricahua Mts.: Chiricahua Nat. Mon. in Totem Canyon; Cave Creek Falls. Also Pinaleño Mts., Santa Catalina Mts., and mountains of southern Apache, Coconino, Graham, Gila, Cochise, and Pima counties. Nova Scotia and Quebec south to Georgia and Alabama, west to Alaska and south to Texas, New Mexico, Arizona, and Oregon; Sonora, Mexico; Eurasia. Holartic.  

Exsicc: CHIR [Reeves 1907, 4230]. SWRS [Roth s.n.].

DENNSTAEDTIACEAE (PTERIDACEAE) - Bracken Fern Family.  
Large terrestrial ferns with hairy rhizomes. Eight genera and 160 species. The monotypic polymorphic genus Pteridium is nearly cosmopolitan but concentrated mainly in tropical and subtropical regions.

Pteridium aquilinum (L.) Kuhn var. pubescens Underwood  
Pteridium aquilinum ssp. lanuginosum (Bong.) Hultén, P. aquilinum var. lanuginosum (Bong.) Fern.  
Bracken Fern.  
Reported to be poisonous to cattle and horses when eaten in large quantities, but the poisonous properties may be eliminated by cooking. The rootstocks and young fronds have been utilized for human food. Invasion of meadows by this species indicates disturbance and drying of the soil.  
Exsicc: CHIR [C8141, R4265]; SWRS [Ordway 93, Lellinger 1958-1]; CHWA [L18].  

DROOPITERIDACEAE - Shield Fern Family

Athyrium filix-femina (L.) Roth var. cyclosorum (Rupr.) C. Christens  
Athyrium angustum (Willd.) K. Presl, A. angustum var. rubellum (Gilbert) Butters, A. angustum var. subtriplinatum Butters, A. filix-femina var. angustum (Willd.) Lawson, A. filix-femina var. michauxii (Spreng.) Farw., A. filix-femina var. rubellum Gilbert  
Southern lady fern  

6,400 - 8,530 [9,000] ft. Deciduous fern, rosette hemicryptophyte. Uncommon beneath trees and along streams, rich shaded ground about springs. Capsusseta arctoz oica.  
Exsicc: CHWA [Leithliter 144, Lehto 453, Lehto 711].

Cystopteris fragilis (L.) Bernh. var. tenuifolia (Clute) Broun  
Fragile bladder fern  
Chiricahua Mts.: Chiricahua Nat. Mon. in Totem Canyon; Wilderness Area, Winn Falls, Greenhouse Trail. Also Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Pinal Mts., Sierra de los Ajos. Apache County, Navajo County, Coconino County to the mountains of Cochise, Santa Cruz, and Pima counties. Labrador to Alaska, south to North Carolina, the Great Lakes region, Texas, New Mexico, Arizona, and southern California; Sonora, Mexico; tropical America; Eurasia. Holartic.  
Exsicc: CHIR [Reeves 4239]. SWRS [Roth s.n.]. CHWA [Leithliter 151, Lehto 587].

Dryopteris filix-mas (L.) Schott  
Male fern  
Chiricahua Mts.: Chiricahua Nat. Mon. in Totem Canyon; Winn Falls; Rucker Canyon. Also Pinaleño Mts., Santa Catalina Mts., Pinal Mts., Santa Rita Mts, Huachuca Mts., Sierra Ancha, Baboquivari Mts., Rincon Mts, Coconino County, Pima county, Cochise County. Widely distributed from British Columbia, south to Vermont, Michigan, western Oklahoma, western Texas, New Mexico, Arizona, southern California; Sonora, Mexico; tropical America; Eurasia. Holartic.  

Phanerophlebia auriculata Underwood  
Cystopteris auriculatum (Underwood) Morton  
[2,000] - 5,800 [7,000] ft. Deciduous fern, rosette herb; mesophyll, orthophyll. Rare in crevices in north-facing cliffs and boulders, damp, shaded canyon wells.  
Chiricahua Mts.: Chiricahua Nat. Mon. in Picket Canyon and Shake Springs; 4 mi. east of Southwestern Research Station at top of Wind Cave. Also Animas Mts. Graham, Pinal, Cochise, Pima, and Yuma counties. Western Texas to Arizona and northern Mexico. Madrean. Exsicc: CHIR [Clark 8949, Reeves 3114]. SWRS [Rau 47].
Equisetum affine
Equisetum X ferrissii
POLYPODIACEAE—Polypody Family.
A family of epiphytes typically. Widely distributed but mainly in tropical regions.

* Pleopeltis thysanolepis (A. Braun ex Klotzsch) Andrews and Windham

* Selaginellaceae—Spike Moss Family.
A monogenic family of small moss-like plants. There are about 600 species, of which 37 occur in the United States. About 25 species are cultivated domestically as ornamentals.

* Selaginella underwoodii Hieron.

* Equisetum laevigatum A. Braun

* Equisetum X ferrissii Clute

* Equisetum hyemale var. affine (Engelm.) A. A. Eat.

* Equisetum X ferrissii Clute

* Equisetum hyemale var. affine X E. laevigatum, E. hyemale var. intermediate Eat., E. laevigatum

Hybrid scouring-rush

- 5,400 - 5,800 ft. Locally common in meadows and around springs.

- Chiricahua Mts.: Chiricahua Nat. Mon.; Rucker Canyon.
- Also Santa Rita Mts., Huachuca Mts., Coconino, Graham, and Cochise counties. Southwestern.

Exsicc.: CHIR [Reeves 1450, 2963, 2855, 4527].

* Woodsia plummerae Lemmon


Chiricahua Mts.: Chiricahua Nat. Mon.; Southwestern Research Station in draw southeast of station. Also Pinaleño Mts., Animas Mts. Apache and Coconino counties south to the mountains of Cochise, Santa Cruz, Pima, and Yuma counties.

Western Texas to Arizona and Mexico. Chihuahuan, Madrean.

Exsicc.: CHIR [Reeves 1823, 1914, 3615A]. SWRS [Nockunas s.n.].

* Equisetum hyemale L. var. affine (Engelm.) A. A. Eat.

Equisetum affine Engelm., E. hyemale ssp. affine (Engelm.) Calder and Taylor, E. hyemale var. californicum Milde, E. hyemale var. elatum (Engelm.) Morton, E. hyemale var. pseudohyemale (Farw.) Morton, E. hyemale var. robustum (A. Braun) A. A. Eat., E. praetatum Raf. E. robustum A. Braun, Hippochaete hymalis (L.) Bruhin ssp. affinis (Engelm.) W.A. Weber

Scouring-rush


Exsicc.: CHIR [Reeves 1410B]. SWRS [Barnes s.n., Ordway 156, SWRS 1959-515].

* Selaginella underwoodii Hieron.

Selaginella underwoodii var. dolichotricha
Weatherby

Underwood's spike-moss

- [5,000] - 6,400 [8,000] ft. Spreading hemicyryptophyte, evergreen perennial forb; leptophyll, orthophyll. Rare on moist rocks.

Sedum stelliforme


Exsicc.: CHIR [Clark 8968]. SWRS [Roth Pinkava 29].

* Equisetum laevigatum A. Braun


Smooth scouring-rush

- [5,000] 5,400 - 5,450 [8,000] ft. Perennial deciduous forb, rhizome geophyte; leptophyll, orthophyll. Rare in meadows, floodplains, marshes, alluvial thickets, and sandy banks, sometimes a weed in cultivated places.

Chiricahua Mts.: Chiricahua Nat. Mon. at Bonita Springs, Navajo and Coconino counties south to Pima, Santa Cruz, and Cochise counties. Ontario and Michigan to British Columbia, south to Ohio, Oklahoma, Texas, and California; Mexico. Temperate, Latin American.

Exsicc.: CHIR [Clark 8276, Reeves 1410A, 2963A].

* GYMNOSPERMAE

CUPRESSACEAE—Cypress Family.
A family of trees or shrubs, leaves usually scale-like, sometimes dimorphic (juvenile leaves larger and more slender than adult leaves); world-wide distribution, composed of 15 - 16 genera and about 140 species. Some species are valuable for timber.
Cupressus arizonica Greene

Cupressus arizonica var. bonita Lemmon
Arizona cypress, rough-bark Arizona cypress


Chiricahua Ms.: Chiricahua Nat. Mon. in Bonita Canyon, Rhyolite Canyon and tributaries; John Long Canyon; Price Canyon; Rucker Canyon; and South Fork Cave Creek. Also Animas Ms., Santa Catalina Ms., and Sierra Ancha. Greenlee, Graham (?), Cochise, Pima Coconino, Yavapai, Gila and Maricopa counties. Western Texas to southern Arizona and northern Mexico. Madrean, relict.

Used as timber for rough construction and as an ornamental. French government planted Arizona cypress for reclaiming barren land in France and northern Africa. Planted in southern Arizona as an ornamental. Seeds are viable for several years and = 40,000/lb. Germination takes 3 weeks. Maximum age greater than 700 years. Little (1950).

Exsicc.: CHIR [Clark 8136, Reeves 1349, 1870, 3570, Roseberry 1]. SWRS [SWRS 1958-16]. FOBO [MHoy 54].

EUPHORBIACEAE—Mormon Tea Family.

The genus Ephedra is of wide sporadic distribution in arid regions of the tropics and subtropics of the northern and southern hemispheres and contains 42 species. Twenty-four species occur in the New World with 13 in North America and 9 - 10 in South America. Asiatic species contain the medicinal alkaloid ephedrine and were formerly harvested to obtain the drug.

Ephedra trifurca Torr. ex S. Wats.

Long-leaved joint-fir, canatilla, popotilla, tepsotse

[4,000] 4,400 - 6,100 ft. May. Green-stemmed shrub, nanophanerophyte. Rare in woodland openings and grasslands on gravelly or sandy soils along washes and rills.

Chiricahua Ms.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site in wash east of trailer; in West Turkey Creek; along road to Rodeo. Also Animas Ms., Finisheo Ms., and Santa Catalina Ms. Greenlee County to Gila, Yavapai, and Mohave counties, south to Mexican boundary. Southwestern Texas to southern California and adjacent Mexico. Chihuahuan, Sonoran, Mohaviian.

American Indians and Mexicans have long used stem decoctions as a cooling beverage and have eaten seeds; common name Mormon tea is derived from use as beverage for Latter-Day-Saint pioneers in the American West. Browsed by bighorn sheep and jackrabbits. Seeds eaten by scaled quail. A Chiricahua Nat. Mon. population collected in 1937 at the southwest corner of the monument, may no longer occur inside of the monument.

Exsicc: CHIR [Dole 125, Reeves 2554]. FOBO [MHoy 148].

PINACEAE—Pine Family.

A family of trees, rarely shrubs, comprising 9 genera and about 210 species of wide distribution, especially throughout temperate regions of the northern hemisphere. The family is of considerable economic importance for lumber and pulpwood.

Abies concolor (Gord. and Glend.) Lindl. ex Hildebr.


White fir


Chiricahua Ms.: Finery Canyon near Onion Saddle; Greenhouse Trail; Wilderness Area, south of Round Park, along Crest Trail. Also Finisheo Ms., Santa Catalina Ms., Sierra Ancha. From rim of the Grand Canyon to the Chiricahua Ms., Santa Catalina Ms., and Hualapai Ms., Sierra de los Ajos. Wyoming to Oregon, south to northern Mexico. Sierran-Cascadian, Rocky Mountain, Madrean.
Limited use for lumber. Replaces fire tolerant species when forest fires are suppressed. Thin bark of young trees makes them susceptible to fire kill. Shade tolerant throughout life. Fairly prolific but irregular seeder. Seeds germinate well on any kind of substrate provided sufficient moisture is available. Little (1950, 1953).

Exsic: SWRS [Martin s.n.]. CHWA [Leithliter 699, 821].


**Engelmann spruce**

5,375 ft. - 9,790 ft. Needleleaf evergreen tree, mesophanerophyte; nanophyll, sclerophyll. Common on east- or west-facing slopes on high ridges, cool slopes below north-facing cliffs at lower elevations; this species has wide ecological amplitude. Nearest point to the monument; Fort Bowie Nat. Historic Site in lower Cut Off Canyon, upper South Canyon, base of Helen's Dome. Also Sierra Ancha. Widely distributed and common in northern and central Arizona from Apache County to Coconino County and south to Cochise County, Gila County, and Yavapai County. Western Oklahoma and Texas to Wyoming, eastern Utah, Arizona, and Baja, California. Rocky Mountain, Great Basin. Edible nuts are harvested.

Exsic: CHIR [Clark 8325, Reeves 1258, 1308, 3841]. SWRS [SWRS 1958-475].

**Pinus edulis** Engelm. var. *edulis*

*Mexican pinyon*, *pinyon*, *pinyon pine*


Exsic: FOBO [MHoy 209].

**Pinus engelmannii** Carr.

*Pinus apacheca* Lemmon, *P. latifolia* Sarg.

Apache pine, *Arizona longleaf pine*

[5,000] 5,700 - 7,100 [8,000] ft. May - Jun. Needleleaf evergreen tree, mesophanerophyte; nanophyll, sclerophyll. Rare on wash banks and in woodlands.


Exsic: CHIR [Clark 8195, Dole 9, Reeves 3653, 4243, 4255]. SWRS [Martin s.n.]. CHWA [Leithliter 120].

**Pinus discolor** D.K. Bailey and Hawksworth

*Pinus cembroides* Zucc. var. *bicolor* Little

Mexican pinyon, border pinyon, pino, pinonero


Seeds commercially harvested for food and are utilized by rodents, squirrels, chipmunks, porcupine, bear, Mearn's quail, turkeys, and thick-billed parrots. Trees grow slowly. Leitz and Pinkava (1980).

Exsic: CHIR [C.s.n., Reeves 1302, 3589, 4161]. SWRS [Ordway s.n.].

**Pinus edulis** Engelm. var. *fallax*

Little

One needle pinyon

5,000 ft. May. Needleleaf evergreen tree, mesophanerophyte; nanophyll, sclerophyll. Rare on wash banks and in woodlands.

Pinus leiophylla Schiede and Deppe var. chihuahuana (Engelm.) Shaw

Pinus chihuahuana Engelm.

Chihuahua pine


Pseudotsuga menziesii (Mirbel) Franco var. glauca (Beissn.) Franco, *Pseudotsuga taxifolia* (Lamb.) Britt. var. *glauca* (Beissn.) Sudw. Douglas-fir


Chiricahua Ms.: Chiricahua Nat. Mon. at Pickett Park, Rhyolite Canyon; West Turkey Creek; Pine Canyon; Price Canyon; Cave Creek; below Onion Saddle; Finery Canyon; John Long Canyon; East Turkey Creek. Also Animas Ms., Finaleño Ms., Final Ms., Santa Catalina Ms. and Santa Rita Ms., Sierra de los Ajos. Southern New Mexico, Arizona, and Mexico. Madrean. Cones persistent, mature in the third year. The typical variety (*P. l. var. leioptihya*) is not native in the United States but has a wide range in Mexico from Chihuahua to Michoacan, Vera cruz, and Oaxaca. It is characterized by five needles in a fascicle, while *P. leioptihya var. chihuahuana* differs by having three needles in a fascicle.

Exsicc: CHIR [Clark 8202, Reeves 1278, 2427, 3604, 3654]. SWRS [Martin s.n.].

Pinus ponderosa P. and Lawson var. scopulorum Engelm.

*Pinus ponderosa* ssp. *scopulorum* (Engelm.) E. Murr.

Western yellow pine


Chiricahua Ms.: Centella Point. Also Pinaleño Ms., Santa Catalina Ms., Huachuca Ms., Santa Rita Ms. Apache to Coconino counties south to Pima and Cochise counties. Montana and North Dakota south to Arizona and New Mexico. Petran. The Centella Point observation in the Chiricahua Ms. is a juvenile and the identification may be in error.

Pinus strobiniformis Engelm. in Wilsiz.


Southwestern white pine, Mexican white pine


Chiricahua Ms.: West Turkey Creek; Onion Saddle; Morse Canyon; Rustler Park; John Long Canyon; Greenhouse Canyon; Wilderness Area. Also Animas Ms., Huachuca Ms., Pinaleño Ms., Santa Catalina Ms. and Santa Rita Ms. Southern New Mexico, southern Arizona, and northern Mexico. Madrean. Taxonomically difficult. Seeds remain viable for several years and are 80% viable. Tree is long lived and slow growing.

Exsicc: CHWA [Leithliter 104, 366].

ANGIOSPERMAE

ACANTHACEAE—Acanthus Family.

A family of perennial armed or unarmed herbs or shrubs, rarely trees; some are lianas, xerophytes, aquatics or mesophytes. A large pantropical family of about 240 genera and over 2,200 species. There are 4 centers of distribution: Indo-Malaya, Africa, Brazil, and Central America northward into Mexico. Relatively few are found in the United States.

Anisacanthus thurberi (Torr.) Gray

Drejera puberula Torr.

Chuparosa, desert-honeysuckle


Chiricahua Ms.: Chiricahua Nat. Mon. at Organ Pipe Canyon; West Turkey Creek; Finery Canyon; Rustler Park; Greenhouse Trail; Wilderness Area. Also Animas Ms., Huachuca Ms., Pinaleño Ms., Santa Catalina Ms., Santa Rita Ms. and Sierra Ancha, Sierra de los Ajos. Northern and eastern Arizona. British Columbia to western Texas, New Mexico, Arizona, California, and northern Mexico. Petran, Oregonian, Sierran-Cascadian. Excellent timber species. Seeds eaten by grouse and Douglas squirrel. Needles browsed by deer occasionally. In good habitats, may be largest tree in Arizona. Matures at 9 yrs. Live 200-600 yrs. Sensitive to extreme cold and dry wind. Pioneers on burn sites.

Exsicc: CHIR [Clark 8126, Reeves 1865, 2823, 3634, 4256]. SWRS [Martin s.n.]. CHWA [Leithliter 22, 86, 367].
Carlowrightia arizonica Gray


Exsic.: FOBO [MHoy 171]. SWRS [Mout 51].

Carlowrightia linearifolia (Torr.) Gray

Schaereria linearifolia Torr.


Exsic.: SWRS [Luecke s.n.]. ARIZ [Barr 61-284, 62-841, 64-410].

Dyschoriste decumbens (Gray) Kuntze

Calophanes decumbens Gray


Exsic.: CHIR [Clark 8619, Reeves 2751, 4121, 4291]. SWRS [Ordway 128].

ACERACEAE—Maple Family.

A family of trees or shrubs with 2 genera and about 150 species, with all but 2 species belonging in Acer. The maples are mostly indigenous to the upland regions of the northern hemisphere with about 15 species native to the United States.

Acer glabrum Torr. var. neomexicanum

(Greene) Kearney and Peebles

Acer glabrum ssp. neomexicanum (Greene) E. Murr., A. glabrum var. parviflorum E. Murr., A. neomexicanum Greene

Rocky Mountain maple

6,000 - 9,510 ft. May - Jul. Broadleaf deciduous tree, microphanerophyte; mesophyll, orthophyll. Common on sandy loam soils on mesic slopes at higher elevations and mesoriparian canyon benches at lower elevations; full sun but is shade tolerant. Pseudotsuga menziesii, Arbutus alpina, Platanus wrightii, Pinus engelmannii, P. arizonica.

Chiricahua Mts.: South Fork Cave Creek; Wilderness Area, along Crest Trail; Barfoot Pass; Also Pinaleño Mts., Santa Catalina Mts., Sierra de los Ájos. Apache and Coconino counties south to Cochise and Pima counties. South Dakota to Alaska, south to New Mexico, Arizona, and California. Rocky Mountain, Madrean.


Acer grandidentatum Nutt. var. sinuosum (Rehd.) Little


Big tooth maple, palo de azucar


Acer negundo L. var. interius (Britt.) Sarg.

Acer interius Britt., A. negundo ssp. interius (Britt.) A.andD. Löve, Negundo acreoides (L.) Moench ssp. interius (Britt.) A.and D. Löve, Negundo interius (Britt.) Rydb.

Box-elder


AGAVACEAE—Agave Family.

A family of eleven genera with about 95 species. The family is economically important as a source of fiber, food, tequila, and steroidal hormones.

Agave palmeri Engelm.

Century plant


counties. New Mexico, southern Arizona, and Sonora, Mexico. Madrean.
Exsic.: CHIR [Reeves 8227, Reeves 3158, 3422]. SWRS [Walker s.n.]. FOBO [MHoy 329].

Agave parryi Engelm.
Century plant

Exsic.: CHIR [Clark 8154, Reeves 3649]. SWRS [Walker s.n.]. CHWA [Leithliter 444, 671]. FOBO [MHoy 253].

Dasylirion wheeleri S. Wats.
Sotol, desert spoon

Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon; Fort Bowie Nat. Historic Site at overlook; Portal to Paradise road; Cypress Gap Trail. Also Huachucas Ms., Rincon Mts., Pinaleño Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Animas Ms., Sierra de los Ajos. Greenlee, Graham, Gila, Pinal, Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Madrean.
Exsic.: CHIR [Clark 8159, Reeves 1555, 3487]. SWRS [SWRS 1958-153].

Nolina microcarpa S. Wats.
Beargrass, sacahuista

Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon, Pickett Park; Fort Bowie Nat. Historic Site, in Apache Pass, Massacre Site; Portal to Paradise road; Wilderness Area; Monte Vista Trail. Also Huachucas Ms., Rincon Ms., Santa Catalina Ms., Pinaleño Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Animas Ms., Sierra de los Ajos. Greenlee, Graham, Gila, Pinal, Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Madrean.
Exsic.: CHIR [Clark 8100, Reeves 1217, 1303, 2958, 3537, 3842]. SWRS [SWRS 1958-35]. CHWA [Leithliter 42].

Yucca baccata Torr. var. brevifolia (Schott ex Torr.) L. Benson and Darrow

Banana yucca, datil

Southwestern Gila, southeastern Pinal, Cochise, and Pima counties. Chihuahuan.

Yucca elata (Engelm.) Engelm.
Soaptree yucca, palmilla


Yucca schottii Engelm.
Yucca macrocarpa Engl. non Merriam, Y. puberula Torr.

Hoary yucca

Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon; Portal to Paradise road; 6 mi. south of Rustler Park on road; Cave Creek Canyon; Wilderness Area. Also Huachucas Ms., Rincon Ms., Santa Catalina Ms., Mule Ms., Animas Ms., Sierra de los Ajos. Pinal, Cochise, Santa Cruz, Pima counties. Southwestern New Mexico, southeastern Arizona, northern Sonora, Madrean.
AMARANTHACEAE—Amaranth Family.
A family of annual or perennial herbs, or low shrubs. Tropical and subtropical arid regions but centered in South and southwestern Africa with a small center in southern Australia. More than 100 genera of about 600 species with 8-9 New World genera mostly in the southwestern and Pacific areas.

Trianthema portulacastrum L.

Pigweed


Exsic: CHIR [Reeves 1648, 4093, 4103]. FOBO [MHoy 547].

AMARANTHACEAE—Amaranth Family.
A family of annual or perennial herbs (rarely shrubs), trees, or vines. Comprised of 64 genera and about 800 species, most common in tropical regions and especially tropical America and Africa. Nearly one-third of the genera are monotypic, with 5 indigenous to the New World.

Alternanthera pungens Kunth

Achyranthes leiantha (Seub.) Standl., A. repens L., Alternanthera achyrantha (L.) R. Brown ex Sweet, Alternanthera repens (L.) Link, non J.F. Gmel.


Chiricahua Mts.: Chiricahua Nat. Mon., Sierra de los Ajos. Cochise, Santa Cruz, and Pima counties. South Carolina to Arizona, south to tropical America. Alien?

Exsic: CHIR [Reeves 2770].

Amaranthus blitoides S. Wats.

Amaranthus graecizans auct. non L.

Pigweed


Exsic: CHIR [Clark 9259, Reeves 4482]. Repository unknown [Blumer 1596]

Amaranthus fimbriatus (Torr.) Benth. ex S. Wats.

Fringed amaranth

[1,000] - [4,000] 4,500 ft. Scapose or leafy-stemmed or leafy-stemmed therophyte. Sandy washes.

Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Pinaleño Mts. Western Coconino County and Mohave County, south to Greenlee, Gila, Cochise, Pima, and (probably) Yuma counties. Southern Utah and Nevada to Arizona and northwestern Mexico. Great Basin, Sonoran.

Exsic: FOBO [MHoy s.n.]

Amaranthus hybridus L.

Amaranthus chlorostachys Willd., A. incurvatus Tim. ex Gren. and Godr., A. patulus Bertol. Spleen amaranth


Exsic: ARIZ [Moir 534].

Amaranthus palmeri S. Wats.

Careless-weed, red-root, quelite, bledo

[1,000] 5,000 - 7,200 [10,000] ft. Aug - Oct. Summer-annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Common on sunny south-facing slopes and along arroyos; loams and silty soils; often on irrigated lands and disturbed soils.


Exsic: CHIR [Clark 8613, Reeves 1230, 1585, 4199]. FOBO [MHoy 288, 347]. SWRS [n.c. s.n.]

Amaranthus powellii S. Wats.

Amaranthus bouchonii Thellung, A. bracteosus Uline and Bray, A. retroflexus L. var. powellii (S. Wats.) Boivin

[5,000?] - 5,400 [8,000] ft. Sep. Scapose or leafy-stemmed therophyte, summer-annual forb. Sunny south-facing slopes, flats, draws, and washes; loamy soils; often on disturbed ground and irrigated fields.


Exsic: SWRS [s.a., s.n.]

Amaranthus pringlei S. Wats.

Amaranthus torreyi (Gray) S. Wats.

Pigweed


Froelichia arizonica Thornb. ex Standl.
Snake-cotton

Exsicc: CHIR [Reeves 4005]. FOBO [MHoy 273, s.n.]. SWRS [Walker s.n.].

Froelichia gracilis (Hook.) Moq.
*Froelichia braunii* Standl., *Oplotheca gracilis* Hook.

Snake-cotton

Exsicc: CHIR [Clark 8571, Reeves 1494A]. SWRS [Walker s.n.].

Gomphrena caespitosa Torr.

*Gomphrena viridis* Woot. and Standl.

Globe-amaranth, ball-clover

Exsicc: CHIR [Clark 9048, Reeves 2758, 2914, 4195]. FOBO [MHoy 89]. SWRS [Walker s.n.].

Gomphrena nitida Rothrock

Globe-amaranth

Exsicc: CHIR [Borelli 11, Clark 8630, Lehtoh 2302, Rapson s.n., Reeves 972, 1709, 4195]. SWRS [Roth s.n., Ordway 56].

Gomphrena sonorae Torr.

Globe-amaranth

Exsicc: CHIR [Moir 526]. SWRS [Luetcke s.n.].

Guilleminea densa (Humb. and Bonpl. ex Willd.) Moq. var. *densa*


Exsicc: CHIR [Borelli 17, Reed 224, Reeves 3416, 3510, 4027, 4130]. FOBO [MHoy 230]. SWRS [Roth s.n.].

ANACARDIACEAE—Cashew Family.

A family of trees or shrubs, usually with resinous bark; 73 genera and about 600 species of both hemispheres but extending into the north temperate areas of Eurasia and North America but distribution chiefly tropical. In the United States the family is widespread.

Rhus glabra L.


Sumac, scarlet sumac, smooth sumac
Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon; Cave Creek Canyon near South Fork; Wilderness Area. Also Huachuca Mts., Sierra Ancha, Santa Catalina Mts., Pinal Mts., Animas Mts., Pinaléño Mts., Sierra de los Ajos. Apache County to Coconino County, south to Cochise and Pima counties. Canada to Florida, New Mexico, Arizona, Sonora and Chihuahua, Mexico. Temperate.

Fruits eaten by wildlife.


Rhus microphylla Engelm. ex Gray

*Sumac*
Chiricahua Mts.: Chiricahua Nat. Mon. in lower Bonita Canyon; Fort Bowie Nat. Historic Site in Siphon Canyon; head of Tex Canyon; Cave Creek; along Portal - San Simon road; Portal; San Simon Cienega. Also Santa Catalina Mts., Mule Mts., Animas Mts. Greenlee, Cochise, and eastern Pima counties. Western Texas to southeastern Arizona and northern Mexico. Chihuahuan, Madrean.

Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site; Cave Creek; West Turkey Creek; Rucker Canyon; Portal-Paradise road; Crystal Cave Creek; Herb Martyr Dam; Wilderness Area. Also Huachuca Mts., Rincon Mts., Ancha, Animas Mts., Peloncillo Mts., Pinaleiio Mts., Sierra de los Ajos. Oregon to Missouri, Texas to California, south to Mexico. Western. Indians used the stems in basketry and ate the berries and used them as a dye mordant. Plants are browsed. Benson and Darrow (1981).


Exsicci: CHIR [Clark 8220], FOBO [MHoy 202]. SWRS [SWRS 1959-225, Roth s.n.].


Chiricahua Mts.: Chiricahua Nat. Mon. in Picket Park, Ryolite Canyon; Fort Bowie Nat. Historic Site in Cut Off Canyon; Portal to Paradise road; Blue Min. Also Huachuca Mts., Santa Catalina Mts., Mule Mts., Animas Mts., Sierra de los Ajos, Cochise, Santa Cruz, and Pima counties. Southern New Mexico, southeastern Arizona, and Sonora, Mexico. Madrean.

Exsicci: CHIR [Clark 8094, Reeves 1340, 2386]. FOBO [MHoy 114]. SWRS [Walker s.n., Roth s.n.].


Chiricahua Mts.: Chiricahua Nat. Mon. in Ryolite Canyon; Fort Bowie Nat. Historic Site in upper Sipson Canyon, West Turkey Creek; upper Pine Canyon; Cave Creek; Rucker Canyon. Also Huachuca Mts., Sierra Ancha, Animas Mts., Sierra de los Ajos, Apache to Coconino counties, south to Cochise, Santa Cruz, and Pima counties. Throughout most of North America. Temperate.

Contains urushiol, one of the most allergenic substances known. The fruits are eaten by wildlife causing no ill effects. The milky juice is poisonous when taken internally.

Exsicci: CHIR [Clark 8095, Reeves 2845, 3169, 4523]. FOBO [MHoy 161]. SWRS [Roth s.n.].


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Park; Fort Bowie Nat. Historic Site; Wilderness Area. Also Finalelio Mts., Santa Catalina Mt. Temperate. Contains urushiol, one of the most allergenic substances known for humans. Wildlife eat the fruits without ill effect.

Exsicci: CHIR [Reeves 3125, 3400]. CHWA [Leithliter 6722].

APIACEAE (UMBELLIFERAE)—Parsley Family.

A family of mostly biennial or perennial herbs, occasionally suffrutescent, rarely shrubs; stems usually with a large pith that shrinks or dries at maturity. About 200 genera and 2,900 species, mostly of the northern hemisphere, and represented in this country by 75 genera and 380 species. Economically, the family is important for food, condiments, and ornamentals. Some members possess resins or alkaloids in lethally poisonous quantities, especially in the roots and fruits. Others are cultivated for food, including: carrot (Daucus), parsnip (Pastinaca), celery (Apium), and parsley (Petroselinum); for flavoring, anise (Pimpinella), caraway (Carum), dill (Anethum), chervil (Anthriscus), fennel (Foeniculum), and lovage (Levisticum). Poisonous genera are: water hemlock (Cicuta), poison hemlock (Conium), and fool’s parsley (Anthusa). Ornamentals are: Angelica, sea holly (Eryngium), and cow parsley (Heracleum).

Berula erecta (Huds.) Coville

Berula erecta var. incisa (Torr.) Cronq., B. incisa (Torr.) G.N. Jones, B. pusilla (Nutt.) Fern., Siella erecta (Huds.) M. Pimen.


Exsicci: SWRS [Roth s.n.].

Cymopterus multinervatus (Coul. and Rose) Tidestrom [3,000] 5,000 - 5,100 [7,000] ft. Feb [Mar] - Apr [May]. Perennial deciduous forb, rhizome geophyte; microphyll, orthophyll. Found on grasslands, also dry desert plains and hills.

Agave, Yucca, Mammillaria.

Chiricahua Mts.: Chiricahua Nat. Mon. west of monument; Fort Bowie Nat. Historic Site on north side of Overlook; 5 mi. north of Portal. Animas Mts. Mohave County. Southern Utah to...
Texas, northern Mexico, Arizona, and southeastern California. Southwestern.
Exsiccat: CHIR [Reeves 2413A, 2540]. FOBO [MHoy 3]. SWRS [Ordway s.n.].

**Daucus pusillus** Michx.
American carrot, rattlesnake-weed
Winter-annual forb, semicrosette therophyte. Uncommon on dry uplands.

Exsiccat: FOBO [MHoy 409]. SWRS [Barnes s.n.].

**Eryngium heterophyllum** Engelm.
Eryngium wrightii Gray
Mexican thistle, eryngo, button-snakeroot

Chiricahua Mts.: West Turkey Creek at junction of road and highway. Also Animas Mts., Canete Hills, Sierra de los Ajos. Cochise, Santa Cruz, and eastern Pima counties. Western Texas to southeastern Arizona and Mexico. Madrean.
Exsiccat: SWRS [Pough 1961-137].

**Eryngium lemmoni** Coult. and Rose
Eryngo, button-snakeroot

This plant, described as new to science, was collected by J.C.
Lemmon and wife in the Chiricahua Mts. (no. 17) circa 1881.
Exsiccat: CHWA [Leithliter 297].

**Ligusticum porteri** (S. Wats.) Coult. and Rose
Chuchupate, osha
6,480 - 9,790 ft. [Jun] - Aug. Perennial deciduous forb, scapose or leafy-stemmed hemicyrptophyte. Common in forest openings at higher elevations and along canyon bottoms lower down.

Exsiccat: CHWA [Leithliter 99, 500, 643].

**Lomatium nevadense** (S. Wats.) Coult. and Rose
Lomatium nevadense var. parishii (Coult. and Rose) Jepson
Lomatium nevadense var. pseudorientale (M.E. Jones) Munz

Parish wild parsley, Indian root

Chiricahua Mts.: Fort Bowie Nat. Historic Site on hill east of trailer; Paradise. Sierra Ancha, Santa Catalina Mts., Pinaleno Mts. Western Utah to Oregon and eastern California, south to western New Mexico, Arizona, and Sonora. Western.
Exsiccat: FOBO [MHoy 76]. SWRS [Roth s.n.].

**Pseudocymopterus montanus** (Gray) Coult. and Rose
Cymopterus lemmonii (Coult. and Rose) Dorn, Pseudocymopterus tidestromii Coult. and Rose.

Thaspium montanum Gray

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Park, upper Totem Canyon and lower Totem Canyon; Fort Bowie Nat. Historic Site; west of Rustler Park; Barfoot Park; between Rustler Park and Long Park; Wilderness Area; Centella Point. Also Pinaleno Mts., Sierra Ancha, Santa Catalina Mts. Apache County to Coconino County, south to Cochise and Pima counties. Southern Wyoming to western Utah, south to northern Mexico. Rocky Mountain.

**Spermolepis echinata** (Nutt. ex DC.) Heller
Apium echinata (Nutt. ex DC.) Bentham and Hook.
Ex. S. Wats.
Scale seed, wild carrot

Chiricahua Mts.: Fort Bowie Nat. Historic Site on hillside south of the cemetery; Portal; Galeyville, on old townsite near smelter. Also Santa Catalina Mts., Animas Mts. Graham, Gila, Maricopa, Pinal, Cochise, and Pima counties. Missouri to Louisiana, west to southern Arizona, southern California, and Coahuila. Southwestern, Plains.
Exsiccat: FOBO [MHoy 359]. SWRS [Roth s.n., Walker s.n., SWRS 1959-66].

**Yabea microcarpa** (Hook. and Arn.) K.-Pol.
Caucalis microcarpa Hook. and Arn.
California hedge-parsley
[4,500 or lower] 5,000 - 5,100 ft. Mar [Apr] - [May] [Jun]. Winter-annual forb, semicrosette therophyte. Common on
sunny flats and cool moist slopes, also on rocky or gravelly soils.

Chiricahua Mts.: Chiricahua Nat. Mon. west of monument.
Also Huachuca Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts. Coconino County to Mohave County to Gila, Santa Cruz, and Pima counties. Idaho to British Columbia, south to Arizona and Baja California. Western.

Apoicynum cannabinum

A. DC., N. suksdorfii and Arizona; Catalina Mts. Apache County to Coconino County, south to Temperate. Jacq., hyperidfolium Apocynum cannabinum USDA, SCS, pool; Pine Canyon. Also (Mitchell Cochise and orthophyll. Uncommon on open north-facing forested slopes at Woods., Apocynum androsaemifolium Spreading dogbane, Indian hemp (G.S. rhomboideum var. incanum A. DC. Rhomboid dogbane) forb, scapose or leafy-stemmed hemicryptophyte; microphyll, orthophyll. Along streams or washes, sandy soil.

Chiricahua Mts.: 1 mi. southeast of Portal. Greenlee County to southern Mohave County, south to Cochise, Pinal, and Maricopa counties. Western Texas to Arizona and Chihuahua. Chihuahuan.

Exsis: SWRS [Walker s.n.].

Aposoncephalas—Dogbane Family.

A family of trees, shrubs, or herbs in about 1,300 species. Cosmopolitan distribution but most abundant pantropically. Forty-six genera and 203 species are indigenous or naturalized in North America. Only 9 genera and 33 species are indigenous in the United States and 16 genera and 52 species are indigenous in Mexico.

Amsonia palmeri Gray


Chiricahua Mts.: 1 mi. southeast of Portal. Greenlee County to southern Mohave County, south to Cochise, Pinal, and Maricopa counties. Western Texas to Arizona and Chihuahua. Chihuahuan.

Exsis: SWRS [Walker s.n.].

Apocynum androsaemifolium L. ssp. androsaemifolium var. incanum A. DC.

Apocynum pumilum (Gray) Greene var. rhomboideum (Greene) Bég. and Bel., A. scopulorum Greene ex Rydb.


Chiricahua Mts.: Southwestern Research Station swimming pool; Fine Canyon. Also Pinaleño Mts., Sierra Ancha, Santa Catalina Mts. Apache County to Coconino County, south to Cochise and Pima counties. Southern Canada south to Georgia and Arizona; Sierra Madre at Colonia Garcea, Mexico. Temperate.

Toxic to cattle. Synonymy from: Plants Database; 1992; USDA, SCS, National Plant Materials Center; Beltsville, MD. Exsis: SWRS [Morse a.n.], NMC [Blumer 1543].

Apocynum cannabinum L.


American Indians used the bark for cordage. A cardiac stimulant, whose action is similar to digitalis, is made from the leaves. Develops cyanogen which is toxic to sheep, cattle, and horses both when green and dry.

Exsis: CHIR [Clark 8945, Reeves 3287, 3669].

Haplophyton cimicidum A. DC.


Chiricahua Mts.: near Portal. Also Santa Catalina Mts. Pinal, Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona and northern Mexico. Chihuahuan.

Exsis: SWRS [Barr 61-311].

Macrocephalas—Dogbane Family.

A family of herbs, shrubs, or trees, sometimes lianous, than more genera with proto-chamaephyte; mesophyll, orthophyll. Tolerates limestone.

American Indians used the bark for cordage. A cardiac stimulant, whose action is similar to digitalis, is made from the leaves. Develops cyanogen which is toxic to sheep, cattle, and horses both when green and dry.


ARALIACEAE—Ginseng Family.

A family of herbs, shrubs, or trees, sometimes lianous, occasionally dioecious; stems often prickly. About 65 genera and more than 800 species, primarily tropical with centers of distribution in the Indo-Malayan region and tropical America. Genera are mostly not shared between these regions.

Aralia racemosa L. ssp. bicrenata (Woot. and Standl.) Welsh and Atwood Aralia bicrenata Woot. and Standl.

orthophyll. Uncommon on moist cliffs and rocky banks, swales and lower slopes, shade, rich soil in coniferous forests. 

Chiricahua Mts.: East Turkey Creek; north slope Rustler Park, Cave Creek Falls above Herb Martyr Dam; Wilderness Area. Also Pinaleño Mts., Sierra Ancha, Sierra de los Ajos, Apache, Navaho, and Coconino counties to Cochise and Pima counties. Canada to Georgia, Arizona, and northern Mexico. Temperate. Exsic: SWRS [SWRS 1960-177, 1960-44, Roth s.n.]. CHWA [Leithliter 395, 398, 456].

ARISTOLOCHIACEAE—Birthwort Family.

A family of low herbs, or more commonly woody usually scendent shrubs. Primarily a tropical family with a few members throughout most temperate regions. Composed of 7 genera and 625 species. Two genera are represented by species indigenous to North America. Aristolochia (an essentially tropical genus of about 300 species) is represented by seven species over much of the United States but is not common.

Aristolochia watsonii Woot. and Standl. 

Aristolochia porphyrophylla H. Pfeifer

Indian root, huercba indio


Chiricahua Mts.: Fort Bowie Nat. Historic Site in South Canyon; Birt Robirds Ranch southeast of Portal; 4 mi. east of Portal. Also Sierra Ancha, Santa Catalina Mts., Pinaleño Mts. Greenlee, Gila, and southern Mohave counties to Cochise, Santa Cruz, Pima, and Yuma counties of Arizona. Western Texas to southern Arizona and Sonora, Mexico. Chihuahuan. 


ASCLEPIADACEAE—Milkweed Family.

A family of perennial herbs, shrubs, or rarely small trees, sometimes fleshy or cactus-like, generally with milky sap, usually lianous. Primarily a pantropical family with only a few genera occurring in temperate regions of the northern or southern hemispheres and especially prominent in South America. The family has 75 to 100 genera. The number is in doubt pending a much needed revision of the family with about 1,800 species.

Asclepias asperula (Dcne.) Woods. ssp. asperula

Antelope-horns, immortal


Some sheep pastures have been abandoned because of the presence of this plant which contains a poisonous glucoside. Exsic: CHIR [Clark 9103, Reeves 2741, 3017, 4026]. FOBO [Pugate, s.n.]. SWRS [Pough 1962-15, SWRS 1959-96]. NMC [Wooton 7-1906]. ASU [Reeves 2742, 2983, 4560].

Asclepias brachystephana Engelm. ex Torr. Short-crowned milkweed


Asclepias engelmanniana Woods.


Asclepias glaucescens Kunth

Asclepias elata Benth.

Milkweed


Asclepias hypoleuca (Gray) Woods.

[6,000] 8,000 - 8,300 ft. Jul - [Aug]. Perennial deciduous forb, scapose or leafy-stemmed hemicycryptophyte. Uncommon in open pine forests on all but north-facing slopes at upper elevations; on more mesic slopes at lower elevations. 


Asclepias lemoni Gray

Milkweed


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Asclepias linaria Cav.
Milkweed

Chiricahua Mts.: Chiricahua Nat. Mon.; Stone Peak.

Exsicc: CHIR [Clark 9253]. SWRS [SWRS 1958-333].

Asclepias macrothis Torr.
Milkweed
[4,000] 4,500 - 6,000 ft. [Aug]. Narrowleaf dicot shrub, nanophanerophyte. Uncommon in mesas.


Exsicc: FOBO [MHoy s.n.].

Asclepias nummularia Torr.
Milkweed

Chiricahua Mts.: Chiricahua Nat. Mon.; on trail to Ash Spring. Also Huachuca Mts., Mule Mts., Aimas Mts., Sierra de los Ajos. Cochise, Santa Cruz, Pima counties. Western Texas to southern Arizona and Sonora, Mexico.

Exsicc: CHIR [Clark 9227, Reeves 3376]. SWRS [Walker s.n.].

Asclepias nyctaginifolia Gray
Milkweed


Asclepias quinquedentata Gray
Milkweed

Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon; Wilderness Area, Greenhouse Trail. Also Sierra de los Ajos. Cochise, Santa Cruz, Pima counties. Texas to southern Arizona. Apachean.

Exsicc: CHIR [Clark 8415]. CHWA [Leithlter 172].

Asclepias subverticillata (Gray) Vail
Asclepias galiioides auct. non Kunth
Poison milkweed, horsetail milkweed

Chiricahua Mts.: Chiricahua Nat. Mon.; 6 mi. east of Portal; Southwestern Research Station; Flanery Canyon; Portal to Paradise Rd. Also Huachuca Mts., Sierra Ancha, Animas Mts., Sierra de los Ajos. Apache to Coconino and Yavapai counties, south to Cochise, Santa Cruz, Pima counties. Kansas and Colorado to Texas, Arizona, and northern Mexico.

Southwestern.

Very poisonous to livestock, especially to sheep, but fortunately the plant is unpalatable and eaten only in the absence of better forage.

Exsicc: CHIR [Clark 8242, 8255, Reeves 3755, 4551]. SWRS [Wittmann 63, Cazier s.n.].

Asclepias tuberosa L. ssp. interior Woods.
Asclepias tuberosa ssp. terminalis Woods., A. tuberosa var. interior (Woods.) Shinners
Butterfly-weed, pleurisy-root


The roots are used for afflictions of the lungs.

Exsicc: CHIR [Clark 8131, 8417, 8721, Reeves 1720, 3292, Reed 192]. SWRS [Roth s.n.].

Matelea producta (Torr.) Woods.
Gonolobus productus Torr.


Southwestern.

This locality may lie outside of the Chiricahua flora limits, however its proximity in common habitat makes it worthwhile looking for.

Exsicc: ARIZ [VanDevender and Reichenbacher 779, Missouri 636].
Sarcostemma crispum Benth.
Funastrum crispum (Benth.) Schlechter, Sarcostemma lobata Waterfall
Climbing milkweed


Exsicc.: CHIR [Clark 8448, Lehto 3322, Reeves 1348, 3719]. FOBO [MIHoy 457]. SWRS [Walker s.n.].

Sarcostemma cyanoides DCn. ssp. hartwegii (Vail) R. Holm
Funastrum heterophyllum (Engelm. ex Torr.) Standl., F. lineare (DCn.) J.F. Macbr., Philibertia heterophylla (Engelm. ex Torr.) Jepson, S. cyanoides var. hartwegii (Vail) Shimmers
Climbing milkweed


Exsicc.: SWRS [Bottimer s.n., Walker s.n.].

ASTERACEAE (COMPOSITAE)—Aster Family.
The family is composed of herbs, shrubs, and less commonly trees or climbers. The greatest portion are herbs, although 2 percent are trees which are mostly confined to the tropics. The largest family of vascular plants, Compositae has about 900 genera and approximately 20,000 species. They are distributed over most of the earth and in almost all habitats.

Achillea millefolium L. var. occidentalis DC

Yarrow, milfoil

Chiricahua Mts.: Greenhouse Trail; Fine Canyon; Barfoot Park; Rustler Park; along Crest Trail; Round Park; Cima Park; Centella Point; Antler Park; Long Park. Also Rincon Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts., Santa Rita Mts., Huachuca Mts. Apache, Navajo, and Coconino counties to Cochise and Pima counties. Manitoba to British Columbia, south to Kansas, New Mexico, Arizona and northern Mexico. Western.


Acourtia nana (Gray) Reveal and King
Pezizia nana Gray
Desert-holly


Chiricahua Mts.: Chiricahua Nat. Mon. in southwest corner; Fort Bowie Nat. Historic Site ruins; Halfmoon Valley (Pedregosa Mts.); Barfoot Park; Rustler Park; Mt. Desert; Straight Line Road at Willow Tank. Also Santa Catalina Mts., Mule Mts., Animas Mts. Southern Yavapai, Greenlee, Gila, Maricopa, Pinal, Cochise, and Pima counties. Texas to Arizona and northern Mexico. Chihuahuan.

Exsicc.: CHIR [Reeves 2750]. SWRS [SWRS 1958-144]. FOBO [MIHoy 199].

Acourtia thurberi (Gray) Reveal and King
Pezizia thurberi Gray


Exsicc.: CHIR [Reeves 3581, 3520]. SWRS [Roth s.n.].

Acroptilon repens (L.) DC.
Centaurea repens L., Centaurea picris Pall.
4,800 ft. May - [Aug]. Perennial deciduous forb, scapose or leafy-stemmed hemiCryptophyte; nanophyll, orthophyll. Waste places.


Exsicc.: SWRS [Roth s.n.].
Acourtia wrightii (Gray) Reveal and King
*Perezia wrightii* Gray; *Perezia arizonica* Gray
Brownfoot


Indians use the root as a styptic. Pink flowers are honey-scented.

Exsicc.: SWRS [SWRS 1959-270]. FOBO [Mhoy 401].

Ageratina herbacea (Gray) King and H.E. Robins.
*Eupatorium herbaceum* (Gray) Greene
Thoroughwort

**Chiricahua Mts.:** Chiricahua Nat. Mon. on Sugarloaf Mtn., Bonita Canyon below campground, Rhyolite Canyon, Massai Point; South Fork Cave Creek; Onion Saddle; Pine Canyon; Paradise; East Turkey Creek; Mormon Spring; Rustler Park; Centella Point. Also Huachuca Mts., Rincon, Sierra Ancha, Santa Catalina Mts., Mule Mts., Pinaleño Mts., Animas Mts., Sierra de los Ajos. Navajo County, Coconino County, Mohave County, south to Greenlee, Cochise, Santa Cruz, and Pima counties. Utah, New Mexico, Arizona, and northern Mexico. Southwestern.

Exsicc.: CHWA [Leithliter 59, 645].

Ageratina lemmoni (B.L. Robins.) King and H.E. Robins.
*Eupatorium lemmoni* Rob.


This plant described as new to science was collected by J.G. Lemmon and wife in the Chiricahua Mts. (no. 516) circa 1881.

Exsicc.: ARIZ [Bowers and McLaughlin 3205, Martin s.n., Blumer 1483].

Ageratina paupercula (Gray) King and H.E. Robins.
*Eupatorium pauperculum* Gray, *Piptothrix arizonica* A. Nels.
Thoroughwort


Ageratina wrightii (Gray) King and H.E. Robins.
*Eupatorium wrightii* Gray


Agoseris aurantiaca (Hook.) Greene
Mountain dandelion

**Chiricahua Mts.:** Wilderness Area, Long Park, Cima Park, Round Park. Also Pinaleño Mts., Santa Catalina Mts. Coconino County, Apache County, Yavapai County, Gila County, Cochise County, Pima County. Alberta and British Columbia to New Mexico and southern Arizona. Rocky Mountain.

Exsicc.: CHWA [Leithliter 59, 645].

Agoseris glauca (Pursh) Raf. var. laciniiata (D.C. Eaton) Smiley,
Mountain dandelion

**Chiricahua Mts.:** Centella Point. Also Pinaleño Mts. Apache County to northeastern Mohave County south to Graham and Pima counties. British Columbia south to New Mexico, Arizona and Nevada. Western.

Fire successional.

Exsicc.: ARIZ [Fishbein 468].

Ambrosia confertiflora DC.
*Franseria confertiflora* (DC.) Rydb., *F. strigulosa* Rydb., *Gauneria tenuifolia* Harvey and Gray
Slimleaf burbage
[1,000] 4,500 - 5,100 [6,500] ft. Apr - Oct. Summer-annual forb, scapose or leafy-stemmed therophyll; nanophyll, orthophyll. Common in encinal, desert grassland, on disturbed ground.


Exsicc.: FOBO [Mhoy 44]. SWRS [Roth s.n.].
Ambrosia psilostachya DC.
Ambrosia californica Rydb., A. cumanensis auct. non Kunth, A. psilostachya var. californica (Rydb.) Blake, A. psilostachya var. lindheimeriana (Scheele) Blank., A. rugelii Rydb.

Ragweed


Chiricahua Mt.: Chiricahua Nat. Mon. at Silver Spur Meadow, West Turkey Creek; foothills of Rock Creek. Also Sierra Ancha, Huschuckie Mts., Canelo Hills, Santa Rita Mt., Sulfur Springs Valley, Animas Mts., Sierra de los Ajos, Apache and Navajo counties, Coconino County south to Cochise and Pima counties. Illinois to Saskatchewan and Washington, south to northern Mexico. Western.

Exsic.: CHIR [Reeves 1415, 4111]. SWRS [Roth s.n.]. ARIZ [Blumer 1779].

Ambrosia trifida L. var. texana Scheele
Ambrosia aptera DC., A. trifida var. aptera (DC.) Kunze

Blood weed


Chiricahua Mt.: Southwestern Research Station; Cave Creek. Southern Apache, Navajo, and Coconino counties to Cochise, Santa Cruz, and Pima counties. Illinois to Colorado, south to Texas, Arizona and northern Mexico. Plains.

Exsic.: SWRS [SWRS 1958-136]. No holdings for southeast Arizona at ARIZ.

Antennaria rosulata Rydb.
Antennaria bakeri Greene, A. sierra-blancae Rydb.

Pussy-toes


Southwestern.

Exsic.: SWRS [SWRS 1958-136]. No holdings for southeast Arizona at ARIZ.

Anthemis cotula L.

Maruta cotula (L.) DC.

Mayweed, sink chamomile, dog fennel


Chiricahua Mt.: Barfoot Park. Apachean.

Exsic.: ARIZ [Blumer 230, UR7, 1573, 1870].

Artemisia carruthii Wood ex Carroth.
Artemisia carruthii var. wrightii (Gray) Blake, A. kansana Britt.

Sagebrush, wormwood

[6,000] 6,500 - 7,000 ft. Aug - Oct [Nov]. Perennial deciduous forb, scapose or leafy-stemmed hemi中央空调pyte; nanophyll, orthophyll. Uncommon on rocky slopes, eroding slopes, open pine forest.

Chiricahua Mt.: Chiricahua Nat. Mon. on Sugarloaf Mountain; Chiricahua Mine; Swisshelm Mts. in Leslie Canyon. Also Animas Mt. White Mts., Hopi Indian Reservation, Kaibab Plateau, Grand Canyon. Carrizo Mts. to Hualapai Mt., White, Pinafore, Pinal, and Chiricahua Mt. Greenlee, Graham, Apache, Navajo, and Cochise counties. Missouri to Texas, west to Utah, and Arizona. Southwestern.

Exsic.: CHIR [Clark 8400, Reeves 1733]. ARIZ [Blumer n.152].

Artemisia dracunculus L. ssp. dracunculus
Artemisia dracunculoides Pursh, A. dracunculoides ssp. glauca Pallas ex Willd.

False-tarragon

slopes, becoming mesic at lower elevations. Sometimes on disturbed ground.

Chiricahua Ms.: Chiricahua Nat. Mon. at summit of Sugarloaf Mtn.; Fort Bowie Nat. Historic Site north of Overlook; upper Pine Canyon; Wilderness Area; Barfoot Park, Rustler Park; Long Park; Pinery Canyon 2 mi. below Onion Saddle; along road 2 mi. below Rustler Park, between Rustler and Long parks. Also Haushuca Mts., Rincon Ms., Pinaleño Ms., Sierra Ancha, Santa Catalina Ms., Pinaleño Ms., Animas Ms., Santa Rita Ms., Dos Cabezas Ms., Canelo Hills, Patagonia Ms., Quinlin Ms., Baboquivari Ms., Sierra de los Ajos. Apache County to Maricopa County south to the mountains of Cochise, Santa Cruz, and Pima counties. Manitoba to British Columbia, south to Texas, Arizona; Baja California and Sonora Mexico. Western.

Hall and Clements (1923).


Artemisia ludoviciana Nutt. ssp. albulana

Artemisia ludoviciana Nutt. ssp. albulana (Woot.) Shinners

Artemisia ludoviciana var. albulana


Chiricahua Ms.: Cave Creek; Paradise. Also Santa Catalina Ms., Patagonia Ms., Sierra Ancha, Dos Cabezas Ms., Santa Rita Ms., Pinaleño Ms., Huachuca Ms., Rincon Ms., Santa Rita Ms., Baboquivari Ms., Whetstone Ms. Navajo and Apache counties south to Cochise and Santa Cruz counties.

Canada to northern Mexico. Western.

Exsicc.: ASU [Boehnlein s.n.]. ARIZ [Blumer 155 1798, Barr 67-301].

Artemisia ludoviciana Nutt. ssp. mexicana

Artemisia ludoviciana var. mexicana (Wild. ex Spreng.) Keck

Artemisia ludoviciana var. mexicana (Wild. ex Spreng.) Gray, A. mexicana Wildl. ex Spreng., A. vulgaris L. var. mexicana (Wild. ex Spreng.) Torr. and Gray

Sagebrush


Chiricahua Ms.: Chiricahua Nat. Mon. at Bonita Canyon, Rhyolite Canyon, Jesse James Canyon; Whetstone Canyon; Paradise; Cave Creek Canyon; Fort Bowie Nat. Historic Site on hill northeast of overlook; Portal to Paradise Road, Barfoot Park, Rustler Park. Also Huachuca Ms., Santa Catalina Ms., Mule Ms., Pinaleño Ms., Animas Ms., Sierra de los Ajos. Cochise, Santa Cruz and Pima counties. Southern Canada to northern Mexico at Coconino County. Western.


Aster falcatus Lindl. ssp. commutatus (Torr. and Gray) A.G. Jones var. commutatus (Torr. and Gray) A.G. Jones


Aster


Chiricahua Ms.: Chiricahua Nat. Mon. in East Whitetail Canyon, near Silver Spur Meadow, Bonita Canyon; Pinery Canyon. Also Rincon Ms., Sierra Ancha. Minnesota to British Columbia, south to Texas, New Mexico and Arizona. Western.

Exsicc.: CHIR [Moir 469, Reeves 1417, 1517, 4529]. SWRS [s.c. s.n.].

Aster subulatus Michx. var. ligulatus Shinners

Aster exilis Ell.


Chiricahua Ms.: Southwestern Research Station. Also Sierra Ancha, Pinaleño Ms., Huachuc Ms. Eastern Yavapai, Maricopa, Final, Cochise, Santa Cruz, Pima and Yuma counties. South Carolina to Florida, west to California, south to tropical America. Temperate, Latin American. Exsicc.: SWRS [Roth s.n.].

Baccharis bigelovii Gray


Chiricahua Ms.: Fort Bowie Nat. Historic Site on hills northeast of overlook; South Fork. Also Huachuca Ms., Animas Ms., Mule Ms. Southwestern Texas, southeastern Arizona and northern Mexico. Madrean.

Exsicc.: FOBO [MHoy 49]. SWRS [Roth s.n.].
Baccharis pteronioides DC.
Yerba-de-pasmo


Western Texas, southern New Mexico, Arizona; Mexico south to Puebla. Madrean.


Baccharis salicifolia (Ruiz and Pavon) Pers.
Baccharis glutinosa Pers., B. vininga DC., Molina salicifolia Ruiz and Pavon
Seep-willow, water-willow, water-wally, batamote, water-motie

Chiricahua Mts.: Fort Bowie Nat. Historic Site at Massacre site; Chiricahua Nat. Mon. in East Whietail Canyon; Stephens Ranch. Also Rincon Mts., Finlineo Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Huachuca Mts., Sierra de los Ajos. Coconino County and northern Mohave County, to Greenlee, Graham, Cochise, Santa Cruz, Pima and Yuma counties.

Colorado and Texas to California and Mexico; Southwestern, Latin American.

Exsicc.: FOBO [MHoy 149]. CHIR [Clarck 8327, Reeves 4211, 4394]. SWRS [Roth s.n.].

Baccharis sarothroides Gray
Broom baccharis, rosin-bush, desert-broom
[1,000] - 5,500 6,850 ft. Feb - Sep. Broadleaf deciduous shrub, nanophanerophyte; nanophyll, sclerophyll. Uncommon at upper elevations on sunny slopes but in canyons and arroyos at lower elevations. Disturbed soil and roadsides may colonize burn sites. Quercus turbinella, Arctostaphylos pungens.


Exsicc.: CHIR [Reeves 1741]. FOBO [MHoy 50].

Baccharis thesioides Kunth

Chiricahua Mts.: Chiricahua Nat. Mon. at Bonita Canyon near headquarters; Fort Bowie Nat. Historic Site; Barfoot Park; Wilderness Area; Rucker Canyon; Cave Creek. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Mule Mts., Sierra de los Ajos. Mogollon Escarpment (Coconino County) and mountains of Greenlee, Graham, Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona, south to central Mexico. Madrean.

Exsicc.: CHIR [Clarck 8396, Reeves 1374, 1605, 1780, 4435]. SWRS [Walker s.n.; Day s.n.]. CHWA [Leithliter 738].

Baccharis wrightii Gray.


Exsicc.: SWRS [Mouat s.n.].

Bahia absinthifolia Bentham var. dealbata (Gray) Gray


Exsicc.: FOBO [MHoy 450]. SWRS [Barnes s.n.].

Bahia bibernata Gray

Chiricahua Mts.: Chiricahua Nat. Mon. near entrance. Also Sierra Ancha, Final Mts. (Gila County), near Sacaton (Pinal County). Western Texas to central-southern Arizona and Sonora. Madrean.

Exsicc.: CHIR [Reeves 1694].

Bahia dissecta (Gray) Britt.
Yellow-ragweed

Chiricahua Mts.: Chiricahua Nat. Mon. on north-face Sugar Loaf Mtn., Echo Canyon, Bonita Park; south-facing slope above lower Pinery Canyon; Rustler Park; Wilderness Area; San Simon Cinegas; Rucker Canyon; lower Pinery Canyon; Onion Saddle. Also Huachuca Mts., Rincon Mts., Pinnacle Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Sierra de los Ajos. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Wyoming to northern Mexico and Arizona. Rocky Mountain.
Baileya multiradiata Harvey and Gray ex Gray

Baileya multiradiata var. thurberi (Greene) Kittel, B. perennis (A. Nels.) Rydb.

Desert-marigold

[2,500] 4,700 - 6,900 ft. [Mar] Jul - Aug [Nov]. Perennial evergreen forb, semirotsette proto-chamaephyte. Common on open xeric slopes and flats; gravelly or sandy soil; along or in washes; sometimes on disturbed sites; often beside paved roadsides where the plants enjoy enhanced moisture.

Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site parking lot; 2 mi. northeast of Portal; Portal to Paradise road; along Silver Creek. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Sierra Ancha, Animas Mts. Coconino County and Mohave County to Graham, Cochise, Santa Cruz, Pima and Yuma counties. Western Texas to southern Utah and Nevada, southeastern California, and Chihuahua. Southwestern.

Exsicc.: CHIR [Reeves 3590, 3594, 4188]. Fobo [MHoy 95]. SWRS [s.c., s.n.].

Baileya pleniradiata Harvey and Gray ex Gray

Baileya multiradiata Harvey and Gray ex Gray var. pleniradiata (Harvey and Gray ex Gray) Coville

Woolly marigold


Chiricahua Mts.: Fort Bowie Nat. Historic Site; east of Portal in San Simon Valley. Also Santa Catalina Mts., Mule Mts., Animas Mts. Mohave County to Cochise, Fima, and Yuma counties. Western Texas to southern Utah and Nevada, southwestern California, and northern Mexico.

No specimen in Fort Bowie Nat. Historic Site herbarium. This species may be represented by a sheet misidentified as Baileya pauciradiata

Exsicc.: SWRS [1958-302, Ordway s.n.].

Berlandiera lyrata Benth.

Berlandiera lyrata var. macrophylla Gray

Green-eyes


Chiricahua Mts.: Chiricahua Nat. Mon. in Silver Spur Meadow and North Fork of Pinery Canyon; Fort Bowie Nat. Historic Site north of overlook; lower Pine Canyon; Onion Creek; Pinery Canyon; Cave Creek. Also Pinaleño Mts., Canoel Hills, Animas Mts. Cochise, Santa Cruz, and eastern Pima counties. Kansas and Arkansas to Texas, southeastern Arizona, and northern Mexico. Plains, Southwestern.

Reputedly, Indians used the flower-heads as seasoning in foods.

Exsicc.: CHIR [Clark 8545, Reeves 1411, 2588, 2755]. Fobo [MHoy 205]. SWRS [SWRS 1960-217, Walker s.n.].

Bidens bigelovii Gray

Spanish-needles


Exsicc.: CHIR [Reeves 1543, 4547, 4565]. SWRS [Roth s.n.].

Bidens bipinnata L.

Bidens bipinnata var. biernanotoides Sherff


Chiricahua Mts.: Finney Canyon at Miss Rhoda Rigg's Ranch and at Paradise in Cedar Gulch. Also in Mule Mts., Huachuca Mts. and Big Lue Range. Northeast southward to Kansas and Arizona, westward to California and south into South America.

Exsicc.: Repository unknown [Blumer 1486, 1712]

Bidens heterosperma Gray

Spanish-needles

[5,400 - 8,650] [9,000] ft. Aug - Sep. Summer-annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Rare in shaded forest and woodland on rocky soils.

Chiricahua Mts.: Chiricahua Nat. Mon.; junction of Onion Saddle Road and Paradise Road; Wilderness Area, Saubury Trail. Also Rincon Mts., Pinaleño Mts. Coconino County and Graham, Cochise, Santa Cruz, and Pima counties. Southern Colorado to New Mexico, Arizona, and Northern Mexico.

Exsicc.: CHIR [Reeves 1575A, 4567, 4587]. SWRS [MHoy s.n., Ordway s.n.].

Bidens lemmonei Gray

[4,000] - 8,000 ft. Sep - Oct. Summer-annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Rare in shaded forest and woodland on rocky soils.


Plant described as new to science collected by J.G. Lemmon and wife in 1881 in Apache Pass (s.n.).

Bidens leptolepida Sherff

Spanish-needles

[3,000] 5,000 - 6,000 ft. Aug - Sep [Oct]. Summer annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Uncommon in openings in oak woodland on gravelly slopes, cool mesic slopes, most along streams, preferring shaded, sandy soil.

Chiricahua Mts.: Chiricahua Nat. Mon. in Whetettail Canyon; Fort Bowie Nat. Historic Site; Southwestern Research Station. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Mule Mts., Pinaleño Mts. Apache, Graham, Gila, Pinal, Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona, Chihuahua, and Baja California. Madrean.

Type was collected in the Chiricahua Mts. by J.C. Blumer.

Exsicc.: CHIR [Clark 8723, Moir 483, Reeves 1575A, 4432]. SWRS [MHoy s.n., Ordway 137]. ARIZ [Blumer 1712].

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Bidens pilosa L.

*Bidens pilosa* var. *minor* (Blume) Sherff


Exsicc.: SWRS [Leutcke s.n.]

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Bidens tenuisecta Gray

[6,000] 8,000 - [8,000] 9,300 ft. [Jul] Aug - [Oct].

Summer annual forb, scapose or leafy-stemmed therophyte; lepiophyll, orthophyll. Scrub slopes and open pine forest.


Exsicc.: ARIZ [Fishbein 426, Blumer 182, 1386, 1593].

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Brickellia amplexicaulis B.L. Robins.


Chiricahua Mts.: South Fork Cave Creek; Rucker Canyon near Hermitage Forest Camp. Also Rincon Mts., Mule Mts. Pinal, Cochise, Santa Cruz, and Pima counties. Southern Arizona and northern Mexico. Madrean.

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Brickellia baccharidea Gray


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Brickellia betonicifolia Gray


Perennial deciduous forb, scapose or leafy-stemmed proto-chamaephyte. Common in woodland openings, shaded slopes, cool drainages.

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon below campground, Picket Park; Paradise; Whitetail Canyon; Cave Creek; Rucker Canyon; near Onion Saddle; Chiricahua Mine. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Pinaleso Mts., Animas Mts. Southern parts of Navajo and Coconino counties, south to Greenlee, Graham, Cochise, Santa Cruz, and Pima counties. New Mexico and central Arizona to Sonora and Chihuahua. Madrean.

Exsicc.: CHIR [Lehto 3306, Moir 420, 447, Reeves 1432, 1550, 1604, 1786, 4417]. SWRS [Walker s.n.]

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Brickellia californica (Torr. and Gray) Gray

Pachaba


Suffrutescent shrub, suffrutescent chamaephyte; microphyll, orthophyll. Common in woodland openings, dry rocky north-facing slopes and more mesic habitats on other exposures and at lower elevations. *Pinus discolor, Quercus emoryi, Caryya wrightii, Opuntia spinosior*.

Chiricahua Mts.: Chiricahua Nat. Mon. at Massai Point; Fort Bowie Nat. Historic Site; Cave Creek; Rucker Canyon near Hermitage Forest Camp; East Turkey Creek. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Pinaleño Mts., Animas Mts. Throughout Arizona. Colorado to western Texas, west to California, south to Sonora and Baja California. Southwestern.

Called *pachaba* by the Hopi Indians, who are reported to rub it on the head for headache.

Exsicc.: CHIR [Reeves 1775, 1825].

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Brickellia eupatorioides (L.) Shinners var. *chlorolepis* (Woot. and Standl.) B.L. Turner


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon below campground, Picket Park, upper Bonita Canyon, Whitetail Canyon, north face of Sugarloaf Mt.; Fort Bowie Nat. Historic Site in South Canyon; Portal; Paradise; Barfoot Park; Rustler Park; Cave Creek; Wilderness Area. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Pinaleño Mts., Animas Mts., Sierra de los Ajos. Apache, Navajo, and Coconino counties to Cochise, Santa Cruz, and Pima counties. Texas to Arizona, south to Mexico. Madrean.

Exsicc.: CHIR [Clark 8179, Moir 422, Reeves 2753, 2969, 3789, 4514]. FOBO [MHoy 302]. SWRS [Roth s.n.; Walker s.n.]. CHWA [Leithliter 805, 855].

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Brickellia fendleri Gray

Brickellia fendleri (Gray) King and H.E. Robins., *Eupatorium fendleri* (Gray) Gray


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; Wilderness Area; Onion Saddle; northwest-face Buena Vista Peak; Greenhouse Trail at Winn Falls overlook; near Barfoot Park. Also Pinaleño Mts. Graham, Cochise counties. New Mexico and southeastern Arizona. Apachean.

Exsicc.: CHIR [Clark 8282]. CHWA [Leithliter 308, 567].

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Brickellia floribunda Gray

Brickellia floribunda (Gray) King and H.E. Robins., *Eupatorium floribundum* (Gray) Gray


Chiricahua Mts.: Chiricahua Nat. Mon.; near Portal Store; Cave Creek Canyon. Also Santa Catalina Mts., Animas Mts. Southern part of Navajo and Coconino counties and eastern Mohave County, south to Cochise, Santa Cruz, and Pima counties. Southwestern New Mexico, southern Arizona, Sonora, and Chihuahua. Madrean.

Exsicc.: CHIR [Reeves 1785]. SWRS [Roth s.n.].
Brickellia grandiflora (Hook.) Nutt.
*Brickellia grandiflora var. petiolaris* Gray,
*Coleosanthus grandiflorus* (Hook.) Kuntze

Chiricahua Ms.: Chiricahua Nat. Mon.; Greenhouse Trail; East Turkey Creek; Cave Creek Canyon; Hunt Canyon; along crest south of Rustler Park. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Lukachukai Ms. and Kaibab Plateau, Pinaleño Ms., Animas Ms., Sierra de los Ajos. Apache and Coconino counties south to Cochise, Santa Cruz, and Pima counties. Missouri and Arkansas to Montana and Washington, south to New Mexico, southern Arizona, California; northern Baja California and Sonora, Mexico. Western.

Exsicc.: CHIR [Reeves 1362].

**Brickellia squamulosa Gray**
Asanthes squamulosus (Gray) King and H.E. Robins.
4,000 - 6,000 ft. May - Sep. Broadleaf deciduous shrub, nanophanerophyte; leptophyll, orthophyll. Lower slopes and mesic canyons.

Chiricahua Ms.: Cave Creek Canyon. Also Mule Ms., Huachuca Ms., Animas Ms. Southwestern New Mexico, southeastern Arizona, south to Mexico. Chihuahuan.

**Brickellia venosa** (Woot. and Standl.) B.L. Robins.
* Coleosanthus venosus* Woot. and Standl.

Uncommon on wooded, warm sunny rocky slopes, tolerates limestone.

Chiricahua Ms.: Chiricahua Nat. Mon. of north of Meadow; Fort Bowie Nat. Historic Site on hills northeast of Overlook; Maxon’s Peak. Also Huachuca Ms., Rincon Ms., Santa Catalina Ms., Mule Ms., Pinaleño Ms. Greenlee, Graham, Gila, Pinal, Cochise, Santa Cruz, and Pima counties. Southern New Mexico and Arizona, and Chihuahua. Madrean.

Exsicc.: CHIR [Reeves 1528].

**Carphinatia tenuiflora DC.**

Chiricahua Ms.: Chiricahua Nat. Mon. in Bonita Canyon at campground, on hills north of Faraway Ranch; Southwestern Research Station; Paradise; Cave Creek; Rucker Canyon, 1 mi. below lake; Hospital Canyon Saddle. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Pinaleño Ms., Animas Ms. Greenlee County and mountains of Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona, south to Central America. Latin American.

Exsicc.: CHIR [Moir 522, 556, Reeves 1574, 1781, 1791].

**Carphochaeta bigelovii Gray**
Bristlehead

Chiricahua Ms.: Chiricahua Nat. Mon. in Echo Canyon, Bonita Canyon below Shake Springs, hills near Faraway Ranch; Fort Bowie Nat. Historic Site in upper Cut Off Canyon; Whittell Canyon; South Fork Cave Creek. Also Huachuca Ms., Rincon Ms., Peloncillo Ms., Guadalupe Canyon, Pinaleño Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms. Southern Apache, Greenlee, Gila, Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona and Chihuahua. Madrean.

Exsicc.: CHIR [Fish 45, Reeves 2261, 2445, 2519, 2622].

**Brickellia simplex** Gray

Chiricahua Ms.: Chiricahua Nat. Mon. at China Boy; Rustler Park; Cave Creek Canyon. Also Huachuca Ms., Patagonia Ms., Animals Ms. Cochise and Santa Cruz counties. Southeastern Arizona, Sonora, and Chihuahua. Madrean.

Exsicc.: CHIR [Reeves 1362].
Centaurea melitensis L.
Star-thistle
Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; just north of Portal. Also Rincon Mts. Apache, Yavapai, Maricopa, Final, Cochise, and Pima counties. Uncommon weed in much of the United States, common in the west; native of Europe. Introduced.
Exsicc.: CHIR [Fish 33, Reeves 1743, 1898, Reed 243]. SWRS [Ordway 40].

Centaurea rothrockii Greenm.
Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; on road to Long Park; Pine Canyon; near Bootlegger Saddle. Also Huachuca Mts., Canelo Hills, Sierra de los Ajos. Cochise County. Southwestern New Mexico and southeastern Arizona to Oaxaca. Madrean.
Exsicc.: SWRS [Walker s.n.]. ARIZ [Fishbein 427, Niles 625, Blamer 1480, Fugate s.n., Reichenbacher 874].

Chaenactis stevioides Hook. and Arn.
Chiricahua Mts.: 3 mi. east of Portal on Peach Orchard Road. Also Rincon Mts., Santa Catalina Mts. Throughout Arizona. Wyoming to Idaho, south to New Mexico, southern California, and Sonora. Western.
Exsicc.: SWRS [Elliott s.n.].

Chaetopappa ericoides (Torr.) Nesom
Exsicc.: CHIR [Clark 8635, Dole 110, Moir 507, Reeves 1591, 2388, 3070, 4042]. FOBO [MHoy 69]. SWRS [SWRS 1959-85, Walker s.n.].

Chrysothamnus nauseosus (Pallas ex Pursh) Brit. ssp. latisquameus (Gray) Hall and Clements
*Chrysothamnus nauseosus* var. latisquameus (Gray) Hall
Rabbit-brush
Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Bonita Canyon; Fort Bowie Nat. Historic Site; Portal to Paradise road; 3.5 mi. east of Southwestern Research Station. Also Huachuca Mts., Santa Rita Mts., Pinaleso Mts., Animas Mts. Northern Navajo County and Cochise, Santa Cruz, and eastern Pima counties. Widely distributed in the western United States. Western.
Exsicc.: CHIR [Fish 33, Reeves 1743, 1898, Reed 243]. SWRS [Ordway 40].

Cirsium arizonicum (Gray) Petrak
Exsicc.: SWRS [SWRS 1958-143].

Cirsium neomexicanum Gray
Exsicc.: CHIR [Clark 8922, Reeves 2747]. FOBO [MHoy 241]. SWRS [Moust s.n.].

Cirsium ochrocentrum Gray
*Onicus ochrocentrum* (Gray) Gray
Chiricahua Mts.: Chiricahua Nat. Mon. in East Whitetail Canyon; Fort Bowie Nat. Historic Site; San Simon Valley 6 mi. east of Portal. Also Pinaleso Mts., Animas Mts. Apache, Navajo, Coconino, and northern Yavapai counties, south to Cochise, Santa Cruz, Pima, and Yuma counties. Nebras to Texas and Arizona. Southwestern.
Exsicc.: CHIR [Clark 8233, Reeves 1637, 2916]. SWRS [Crazier s.n.].

Cirsium rothrockii (Gray) Petrak
*Cirsium diffusum* (Eastw.) Rydb. *C. pulchellum* (Greene) Woot. and Standl. ssp. *diffusum* (Eastw.) Petrak
Chiricahua Mts.: Chiricahua Nat. Mon.; West Turkey Creek at Saulsbury Canyon Trail. Also Pinaleso Mts. Coconino County and in southern Navajo, Gila, and Cochise counties. Arizona. Southwestern.
Exsicc.: CHIR [Clark 8197, Reeves 1766, 2779, 3121, 3629, 3668]. SWRS [Wittmann 311]. CHWA [Leihlter 553].
Cirsium undulatum (Nutt.) Spreng. var. undulatum
Carduus helleri Small, Cirsium undulatus Nutt., C. helleri (Small) Cory, C. megacephalum (Gray)
Cockerell, C. ochrocentrum (Gray) Gray var. helleri (Small) Petruk, C. undulatum var. megacephalum
(Gray) Fern., Nicotiana undulatus Gray var.
megacephalum Gray
Chiricahua Ms.: South Fork Cave Creek; Wilderness Area; Anita Park. Also Rincon Ms., Huachuca Ms., Santa Catalina Ms., Anima Ms. Apache County, Coconino County, Cochise and Pima counties. Michigan to British Columbia, south to Texas and Arizona. Plains.

Coneza canadensis (L.) Cronq. var. canadensis
Erigeron canadensis L., Leptilon canadense (L.) Britt.
Horseweed
Chiricahua Ms.: Chiricahua Nat. Mon. in lower Bonita Canyon; Whitetail Canyon; Fort Bowie Nat. Historic Site in Cut Off Canyon and South Canyon; Southwestern Research Station; Cave Creek; Pine Canyon; East Turkey Creek. Also Huachuca Ms., Pinaleño Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Anima Ms., Sierra de los Ajos. Throughout most of Arizona except the extreme western portion. Widely distributed in North and South America; naturalized in the Old World. Temperate. Latin American.
Exsic.: CHIR [Clark 8719, 8937, 9232, Reeves 1724, 4047, 4345, 4420, 4466]. FOBO [MHey 278]. SWRS [Roth s.n.].

Cosmos parviflorus (Jacq.) Pers.
Coreopsis parviflora Jacq.
Chiricahua Ms.: Chiricahua Nat. Mon. in Rhyolite Canyon; Rustler Park; Goldenrod Park; 3 mi. up road from Southwestern Research Station on Onion Saddle Road; Wilderness Area, Crest Trail near northern boundary; Rucker Canyon; Finery Canyon. Also Rincon Ms., Santa Catalina Ms., Mule Ms., Animas Ms., Huachuca Ms., Sierra de los Ajos. Southern Apache and Coconino counties to Cochise,Standl. Santa Cruz, and Pima counties. southeastern Colorado to southwestern Texas, Arizona, and Mexico. Southwestern.
Exsic.: CHIR [Fish 23, Reeves 1248, 1716]. SWRS [Roth s.n.]. CHWA [Leithliter 684].

Dugaldia hoopesii (Gray) Rydb.
Helenium hoopesii Gray.
Western sneezeweed, orange sneezeweed
Chiricahua Ms.: Greenhouse Trail; Rustler Park; Long Park; Wilderness Area along Crest Trail, Round Park, Cima Park; Barfoot Park; Finery Canyon near woodcutter's graves; Centella Point; Anita Park; Amiel Park. Also Rincon Ms., Pinaleño Ms., Santa Catalina Ms. Apache, Coconino, Greenlee, Graham, Cochise, and Pima counties. Wyoming to Oregon, south to New Mexico, Arizona, and California. Western.
Contains a toxic glucoside, duguadin, which causes "spewing sickness" in sheep. Also poisonous to cattle but rarely eaten by them.
Exsic.: SWRS [Ordway s.n.]. CHWA [Leithliter 184, 424, 665, 833].

Dyssodia papposa (Vent.) A.S. Hitchc.
Booeba papposa (Vent.) Rydb., Tagetes papposa Vent.
Chiricahua Ms.: Paradise beside the creek; Cave Creek Canyon. Also Canelo Hills, Sierra Ancha. Navajo, Coconino, Greenlee, Gila, Cochise, and Santa Cruz counties. Illinois to Montana, south to Louisian and Arizona. Temperate.
Exsic.: SWRS [Walker s.n.]. ARIZ [Blumer 54, Hesselberg 880, Harrison et al. 6143].

Eriocanaria laricifolia (Gray) Shinners
Haplopappus laricifolius Gray
Turpentine-brush
Chiricahua Ms.: Chiricahua Nat. Mon. in Bonita Canyon; Fort Bowie Nat. Historic Site; Portal - San Simon road, 2 mi. east of Portal. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Pinaleño Ms., Animas Ms. Greenlee County to Mohave County; south to Cochise, Pima, and Yuma counties. Western Texas to Arizona and northern Mexico. Southwestern.
Presence in significant quantity on rangelands usually indicates overgrazing.
Exsic.: CHIR [Reeves 1330, 1767, 2269]. SWRS [SWRS 1959-241, Walker s.n.].

Eriogonum arizonicum Gray
Eriogonum rusbyi Gray
Chiricahua Ms.: Wilderness Area, near P.K. Spring turnoff. Also Santa Catalina Ms., Santa Rita Ms., Huachuca Ms., Pinaleño Ms., Sierra de los Ajos. Cochise and Pima counties. Known only from southern Arizona and Sonora, Mexico. Apachean.
Exsic.: CHWA [Leithliter 488, 812, 857]. ARIZ [Goding 261, 349; Shreve 3904; Reichertacher 2688; Nessom 4531; Bowers and McLaughlin 3302, 3360, 3562; Peebles et al. 2414; Livingston and Thornber s.n.; Bertelsen s.n.; 346; Warren and Reichardt s.n.; Benson 9033].
Erigeron colomexicanus A. Nels.
*Erigeron divergens* Torr. and Gray var. *cinereus* Gray, Fleabane, sprawling daisy
*Chiricahua Mts.: Chiricahua Nat. Mon. in Pickett Canyon; slopes of Bonita Canyon and Hunt Canyon; Fort Bowie National Historic Site in Cut Off Canyon; Portal to Cut Off Road; Portal; Rucker Canyon near Hermitage Forest Camp; West Turkey Creek at Rock Creek; Onion Saddle; below Ruster Park; Whitetail Canyon near Hands Pass; lower Pinery Canyon; Centella Point. Huachuca Mts., Rincon Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts. Animas Mts. and Canelo Hills. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Colorado and Utah to Texas, New Mexico, Arizona, and northern Mexico. Western.
*Exsicc.: CHIR [Clark 8270, 8455, 8639; Fish 37; Reeves 1880, 2617, 3956, 4013, 4210]. FOBO [MHoy 73]. SWRS [Roth s.n.; Luetke s.n.; Amadon s.n].

(3,000) - [8,000] ft. [Apr] - [Oct]. Evergreen perennial forb, semirot/shoot hemicyclophyte. Common on dry uplands, sandy or stony mesas and slopes, with pine and juniper.

Erigeron eximius Greene
*Erigeron superbus* Greene ex Rydb.
The validity of these collections should be evaluated in view of Bowers (1987) comments on *Erigeron spectabilis*.
*Exsicc.: CHIR [Borell 23, Reeves 1756, 1837, 4264]. CHWA [Leithliter 182, 551, 588]. ARIZ [Kennear and Peebles 9946, 14138; Darrow, et al. 1109, 1148].

Erigeron flagellaris Gray
*Erigeron flagellaris* var. *typicus* Cronq., *E. nudiflorus* Buckl.
*Chiricahua Mts.: Chiricahua Nat. Mon.; Cave Creek Canyon, lower East Turkey Creek; North Fork Cave Creek; Centella Point. Also Huachuca Mts., Pinaleno Mts., Sierra Ancha, Animas Mts., Sierra de los Ajos. Northern Apache, Navajo, and Coconino counties to Cochise, Santa Cruz, and Pima counties. South Dakota and Wyoming to Texas, New Mexico, southern Arizona and Sonora, Mexico. Plains, Rocky Mountain.
*Exsicc.: CHIR [Reeves 1412, 3807].

Erigeron kuschei Eastw.
[6,000] 6,875 - 9,080 ft. Jun - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemicyclophyte; nanophyll, orthophyll. Uncommon on cliffs and rocky openings in pine forest.
*Chiricahua Mts.: Wilderness Area, Crest Trail at Point Rock, Crest Trail south of Rustler Park, Rucker Canyon; Raspberry Peak; Cave Creek; base of Winn Falls; above Rustler Park. Endemic to the Chiricahua Mts. Cochise County. Apachian.
*Exsicc.: SWRS [Roth s.n.]. CHWA [Leithliter 117, 757].

Erigeron neomexicanus Gray
*Chiricahua Mts.: Chiricahua Nat. Mon. in upper Whitetail Canyon, north slope Sugarloaf Mtn., upper Sara Deming Canyon; Greenhouse Trail; road cut above Turkey Park; Southwestern Research Station; Barfoot Pass; lower Pinery Canyon; Rustler Park; Wilderness Area; Cave Creek Canyon; Paradise. Also Huachuca Mts., Santa Catalina Mts., Sierra Ancha, Mule Mts., Animas Mts., Sierra de los Ajos. Coconino County, to Greenlee, Graham, Cochise, Santa Cruz, and Pima counties. New Mexico, Arizona, and Sonora, Mexico. Madrean.

Erigeron oreophilus Greenm.
*Erigeron delphiniifolius* Willd. var. *oreophilus* (Greenm.) Cronq.
Fleabane, wild daisy
[4,500] 5,100 - 8,860 [9,500] ft. May - Nov. Perennial deciduous herb, semirot/shoot hemicyclophyte; nanophyll, orthophyll. Uncommon in wooded canyons, along streams and dry forest slopes, oak chaparral and open pine forests.
*Chiricahua Mts.: Chiricahua Nat. Mon. in upper Sara Deming Canyon, East Whitetail Canyon; Fort Bowie Nat. Historic Site at Massage Site, Apache Pass; 2 mi. east of Onion Saddle on Portal Road; Rustler Park; Silver Peak Trail; Wilderness Area; Centella Point. Also Huachuca Mts., Rincon Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts. Apache, Navajo, and Coconino counties to Graham, Cochise, Santa Cruz, and Pima counties. Arizona and northern Mexico. Madrean.
*Exsicc.: CHIR [Clark 8455, Reeves 1880, 5956]. FOBO [MHoy 496]. SWRS [Ordway s.n.; Roth s.n.]. CHWA [Leithliter 520, 611].

Erigeron scopulinus Nesom and Roth
[7,200] - 9,200 ft. May - Jun. Perennial deciduous forb, semirot/shoot proto-chamaephyte; nanophyll, orthophyll. Rare on

Nesom and Roth (1981).
Exisicc.: SWRS [Wittmann 100, Roth s.n. (isotype)].

Erigeron speciosus (Lindl.) DC. var. macranthus (Nutt.) Cronq.

Erigeron macranthus Nutt.


"Collections of this taxon from the Rincon Mountains will key in Arizona Flora (Kearney et al. 1960) to Erigeron superbus Greene. E. speciosus var. macranthus is robust and many-stemmed, while E. superbus is slender and few-stemmed". Bowers 1987.

Erigeron vreelandii Greene

Erigeron platyphyllus Greene


Chiricahua Mts.: Chiricahua Nat. Mon.; upper Finery Canyon; East Turkey Creek; Wilderness Area. Also Pinealeio Mts., Catalina Mts., Animas Mts., Sierra de los Ajos. Southern Apache and Navajo counties, Coconino County, Mohave County, south to Cochise and Pima counties. New Mexico, Arizona, and Sonora, Mexico. Apachean.

Exisicc.: CHIR [Clark 8514, Reeves 1837A, 3768]. SWRS [Roth s.n.; Walker s.n.]. CHWA [Leithlitter 163, 429, 646].

Eupatorium greggi Gray

Conoclinium greggi (Gray) Small


Eupatorium pycnocephalum Less.

Fleischmannia pycnocephalum (Less.) King and H.E. Robins.

[3,500] - 6,000 ft. [May] - Sep [Oct]. Deciduous perennial forb, scapose or leafy-stemmed hemi-crempoyphyte. Rocky slopes and ledges along streams, in the shade of trees and boulders; on humus-rich soils.


Exisicc.: SWRS [Cummins 212-61].

Flourensia cernua DC.

Black brush, højare, tar bush


Chiricahua Mts.: 0.5 mi. northwest of Portal; Fort Bowie Nat. Historic Site; San Simon Cienega. Also Santa Catalina Mts., Mule Mts. Cochise County. Western Texas to southeastern Arizona and northern Mexico. Chihuahuan. Exisicc.: SWRS [Ordway 41, Roth s.n.].

Gaillardia pinnatifida Torr.

Gaillardia gracilis A. Nels., G. mearnsii Rydb.

Blanket-flower


Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon; along Herb Martyr Road, below Cave Creek Ranger Station; lower Rucker Canyon; Paradise; lower Whettlei Canyon; Ruster Park. Also Rincon Mts., Sierra Ancha, Animas Mts. Apache, Navajo, Coconino, and eastern Mohave counties, south to Cochise, Santa Cruz, and Pima counties. Colorado and Utah to Texas, Arizona, and Mexico. Western.

Used by Hopi Indians as a diuretic.
Exisicc.: CHIR [Dodd 2-3, Reeves 2871, 2910, 3470, 4214]. SWRS [Graber s.n., SWRS 1958-35].

Gaillardia pulchella Foug. var. pulchella

Gaillardia drummondii (Hook.) DC., G. neomexicana A. Nels., G. villosa Rydb.

Blanket-flower, Indian blankets, firewheel


Exisicc.: CHIR [Clark 8964]. FOBO [MHoy 170]. SWRS [Ordway s.n., Roth s.n.].

Galinsoga parviflora Cav.

Galinsoga parviflora var. semicalva Gray, G. semicalva (Gray) St. John and White, G. semicalva var. peracalva Blake


Exisicc.: SWRS [Clarke s.n., Todesen s.n.]. ARIZ [Harrison et al. 6142, 6203, Gould and Haskell 4591, Blumer 51, 92, 1652, 1713].
Gamochaeta falcata (Lam.) Cabrera
Gamochaeta calviseps (Fern.) Cabrera, Gnaphalium calviseps Fern., G. falcatum Lam., G. purpureum L. var. falcatum (Lam.) Torr. and Gray
Cud-weed, everlasting
[3,000] 5,250 - 6,300 ft. [May] Sep - [May]. Winter-annual forbs, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Uncommon on aluvium in canyons, disturbed soil and ruderal areas, along streams. Quercus arizonica, Pinus leiophylla, P. engelmannii.
Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Picket Canyon. Also Rincon Mts., Animas Mts. Apache County, Coconino County, and Mohave County to Cochise, Santa Cruz, Piute, and Yuma counties. Montana and Washington, south to Texas, southern Arizona, and California. Western. Exsicc.: CHIR [Reeves 3925, 3995, 4371, 4468].

Gnaphalium viscosum Kunth
Gnaphalium decurrens Ives non L., G. macounii Greene, Pseudognaphalium viscosum (Kunth) W.A. Weber
Cud-weed, everlasting
Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; Wilderness Area, Crest Trail near Painted Rocks; Barfoot Park; Centella Point; Long Park. Also Sierra Ancha, White Mts., Rincon Mts., Pinaleno Mts., Sierra de los Ajos. Apache County, Coconino County, and Mohave County, to Cochise and Pima counties. Canada south to West Virginia, Texas, southern Arizona, northern California and Sonora, Mexico. Northern. Exsicc.: CHIR [Reeves 4500]. SWRS [Luetke s.n.].

Grindelia nuda Wood var. aphanactis (Rydby) Nesom
Grindelia aphanactis Rydby.
Chiricahua Mts.: Lower Cave Creek near Cave Creek Ranch. Also Animas Mts. Apache, Navajo, Coconino, and Yavapai, and Cochise counties. Southeastern Utah and southern Colorado to western Texas, New Mexico, and eastern Arizona. Southwestern. Exsicc.: SWRS [Wittmann 111].

Gutierrezia microcephala (DC.) Gray
Brachyris microcephala DC., Gutierrezia glomerella Greene, G. lucida Greene, G. sarothrae (Pursh) Britt. and Rusby var. microcephala (DC.) L. Benson, Xanthochynam lumidum Greene, X. microcephala (DC.) Shinners
Three leaf sneeekweed

Gutierrezia sarothrae (Pursh) Britt. and Rusby
Snake-weed
Narrowleaf dicot shrub, suffrutescent chasmophyte; leptophyll, sclerophyll. Common in open woodland and chaparral, dry uplands. May be invasive following heavy grazing.

Chiricahua Mts.: Chiricahua Nat. Mon. on north face Sugarloaf Mtn.; Fort Bowie Nat. Historic Site; Silver Creek; 2 mi. northeast of Portal; grassland in lower Pinery Canyon. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleno Mts., Animas Mts. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Saskatchewan to Kansas, south to northern Mexico, and Baja California. Southwestern.

Exsic.: CHIR [Clark 8395, Reeves 1321, 1402, 3992, 4426]. SWRS [in. sc.].

Gutierreziawrightii Gray
Groseella discoida Gray, Xanthocephalumwrightii
(Gay) Gray


Exsic.: ARIZ [Gould and Haskell 4603].

Gymnosperma glutinosum (Spreng.) Less.
Selioa glutinosa Spreng., Xanthocephalum glutinosum (Spreng.) Shinners

Chiricahua Mts.: Chiricahua Nat. Mon. in Whetstone Canyon, Echo Canyons, Bonita Canyon; along Cave Creek road 5.5 miles west of Southwestern Research Station; Wilderness Area, South Fork Cave Creek; Silver Creek; Paradise; East Turkey Creek. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Mule Mts., Animas Mts., Sierra de los Ajos. Greenlee, Maricopa, Pinal, Cochise, Santa Cruz, Pima, and Yuma counties. Texas to southern Arizona, south to Central America. Southwestern, Latin America.

In Mexico the plant is used in decoctions for treating diarrhea, and the gum is used externally in cases of rheumatism and ulcers. Becomes invasive on over-grazed ranges.

Exsic.: CHIR [Borell 3, Clark 8330, Reeves 1003, 1519, 1818, 1852]. CHWA [Leithliter 640].

Heliannthes annuus L.
Heliannthes annuus ssp. jaegeri (Heiser) Heiser, H. annuus ssp. lenticularis (Dougl. ex Lindl.) Cockrell, H. annuus ssp. texanus Heiser, H. annuus var. lenticularis (Dougl.) Steyermark, H. annuus var. macrocarpus (DC.) Cockrell, H. annuus var. texanus (Heiser) Shinners, H. aridus Rydb., H. lenticularis Doug. ex Lindl.

Sunflower
Summer annual forb, scapose or leafy-stemmed therophyte. Uncommon on dry uplands, flats, and fields but growing well in low spots, and along roadsides.


Exsic.: FBO [MHoy 348]. SWRS [Wittmann 229, Roth s.n.].

Heliannthes petiolaris Nutt.
Sunflower
Summer annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Uncommon in disturbed soil, arroyos, roadsides, cultivated land, alluvial soils. Quercus emoryi.

Chiricahua Mts.: Chiricahua Nat. Mon. north of Pinery Canyon; Fort Bowie Nat. Historic Site, western foot of Apache Pass; mouth of Little Picket Canyon. Also Huachuca Mts., Animas Mts. Apache, Navajo, and Coconino counties, south to Cochise, Santa Cruz, Pima, and Yuma counties. Saskatchewan to Missouri and Texas, west to British Columbia and California, uncommon farther east as an introduction. Western.

Exsic.: CHIR [Clark 9233, Reeves 1656, 4044]. SWRS [Roth s.n.].

Helianthemis longifolia (Robins. and Greenm.)
Cockrell var. annua (M.E. Jones) Yates
Heliantheris annual (M.E. Jones) Cockrell, Viguiera annua (M.E. Jones) Blake, V. longifolia var. annua (M.E. Jones) Welsh
Summer annual forb, scapose or leafy-stemmed therophyte; leptophyll, orthophyll. Uncommon on hills in the desert grassland - desert ecotone, disturbed slopes and flats, in washes; often grows in the shade of other plants.

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon, Weather Station Hill. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleno Mts., Canelo Hills, Sierra de los Ajos. Apache County to eastern Mohave County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Chihuahuan.

Good forage for sheep, invasive on over-grazed range.

Exsic.: SWRS [SWRS 1960-297]. CHIR [Reeves 1770].

Helianthemis longifolia (Robins. and Greenm.) var. longifolia
Gynnolomia longifolia Robins. and Greenm., Viguiera longifolia (Robins. and Greenm.) Blake
Longleaf goldeneye

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; Wilderness Area. Also Pinaleño Mts. Coconino County to Greenlee, Cochise, Santa Cruz, and Pima counties. Arizona, New Mexico, Texas, Mexico, Southwestern.


Exsic.: CHIR [Reeves 1312, 1601, 1779, 4518]. CHWA [Leithliter 721, 748, 815, 824].

Heliomeris multiflora Nutt. var. brevifolia
(Gree) Yates

Viguiera ovalis Blake

[6,000] 7,000 - 9,200 ft. Jun - Jul [Sep]. Perennial deciduous forb, scapose or leafy-stemmed hemicyryptophyte; microphyll, orthophyll. Uncommon on rocky slopes and outcrops.

Chiricahua Mts.: Wilderness Area, above Wink Falls; Centella Point. Cochise County, at Cave Creek. Summit of Huachuca Peak. Southwestern New Mexico and southeastern Arizona. Apachean.

Exsic.: SWRS [Roth s.n.]. CHWA [Leithliter 405].

Heliomeris multiflora Nutt. var. multiflora

Viguiera multiflora (Nutt.) Blake

Showy goldeneye, rosemweed


Chiricahua Mts.: Chiricahua Nat. Mon. in Sugarloaf Parking Lot; Rustler Park; Southwestern Research Station; Fort Bowie Nat. Historic Site in South Canyon; Wilderness Area; Centella Point; Sierra de los Ajos. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Santa Catalina Mts., Mule Mts., Animas Mts. Apache County to northeastern Mohave County, south to the mountains of Cochise, Santa Cruz, and Pima counties. Southern Montana to New Mexico, Mexico, Arizona, California and Idaho. Western.

Blake (1918).

Exsic.: CHIR [Moir 463, Reeves 1512, 1758, 1897]. SWRS [Roth s.n.]. FOBO [MHoy 520]. CHWA [Leithliter 301, 844].

Heliopsis parvifolia Gray

Ox-eye


Chiricahua Mts.: Rustler Park; Wilderness Area; Onion Saddle; Pinney Canyon; Long Park; Cave Creek; Paradise; Barfoot Park. Also Huachuca Mts., Santa Rita Mts., Mule Mts., Baboquivari Mts. Cochise, Santa Cruz, and Pima counties. Southwestern Texas to southern Arizona and northern Mexico. Madrean.


Heterosperma pinnatum Cav.


Chiricahua Mts.: Chiricahua Nat. Mon. in Picket Park; Fort Bowie Nat. Historic Site along Apache Pass Road; Southwestern Research Station at West Turkey Creek, El Corazonado Ranch; Paradise; mouth of Bonita Canyon. Also Huachuca Mts., Rincon Mts., Mule Mts., Animas Mts., Canelo Hills. Cochise County, Yavapai County, south to Greenlee, Cochise, Santa Cruz, and Pima counties. Southwestern Texas to Arizona, south to Guatemala. Southwestern, Latin American.

Exsic.: CHIR [Moir 569, Reeves 1233, 1537, 1630]. FOBO [MHoy 520]. SWRS [Roth s.n.].

Heterotheca subaxillaris (Lam.) Britt. and Rusby


Telegraph-plant, camphor weed


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; Cave Creek, Southwestern Research Station; grasslands along west slope of the range north of Rucker Canyon. San Simon Valley. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Pinaleño Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Southern Navajo County to Yavapai County, south to Graham, Cochise, Santa Cruz, and Pima counties. Delaware to Kansas, south to Florida, Texas, Arizona, and Mexico. Temperate.

Exsic.: CHIR [Clark 8657, Reeves 4455]. SWRS [Wittmann 168, Orndway s.n.].

Heterotheca villosa (Pursh) Shinners var. hispida (Hook.) Harms


Golden-aster


Chiricahua Mts.: Chiricahua Nat. Mon. in Totem Canyon. Exsic.: CHIR [Reeves 1917].
Hieracium fendleri Schultz-Bip. var. discolor
Gray Hawkweed

Chiricahua Mts.: Chiricahua Nat. Mon. on Far Upper Totem Canyon; Wilderness Area; Barfoot Park; Rucker Canyon below Round Park; 0.5 mi. east of Monte Vista Lookout. Also Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Rincon Mts., Animas Mts., Huachuca Mts., Santa Rita Mts., Apache County, Cochise Co., southern Arizona. Western Texas to southeastern Arizona. Mexico. Madrean.


Hieracium fendleri Schultz-Bip. var. fendleri
Chlorocrepis fendleri (Schultz-Bip.) W.A. Weber
Hawkweed


May be fire successional.
Exsicc.: ARIZ [Blumer 1597].

Hieracium lemmunii Gray

Chiricahua Mts.: Wilderness Area, along Crest Trail; Rucker Canyon; Barfoot Park. Also Huachuca Mts. Cochise and Pima counties. Southwestern New Mexico and southeastern Arizona. Madrean.

Exsicc.: SWRS [Luetcke s.n.]. CHWA [Leithliter 734, 744].

Hieracium pringlei Gray

Chiricahua Mts.: Fort Bowie Nat. Historic Site in wash east of gate; lower Silver Creek; Rucker Canyon. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleño Mts., Animas Mts., Sierra de los Ajos. Mohave, southern Yavapai, Graham, Gila, Pinal, Maricopa, Cochise, Santa Cruz, and Pima counties. Western Texas to southern California and northern Mexico. Madrean.

Exsicc.: CHWA [Leithliter 715].

Hieracium rusbyi Greene
6,000 - 9,300 ft. Aug. Perennial deciduous forb, spiny-leaved herb; microphyll, orthophyll. Rare on dry slopes.


Hymenoclea monogyna Torr. and Gray ex Gray
Burro bush

Chiricahua Mts.: Fort Bowie Nat. Historic Site in wash east of gate; lower Silver Creek; Rucker Canyon. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleño Mts., Animas Mts., Sierra de los Ajos. Mohave, southern Yavapai, Graham, Gila, Pinal, Maricopa, Cochise, Santa Cruz, and Pima counties. Western Texas to southern California and northern Mexico. Madrean.

Exsicc.: FOB [Hoy 521]. SWRS [SWRS 1960-299].

Hymenopappus mexicanus Gray


Type collected in the Chiricahua Mts. by J.C. Blumer.
Exsicc.: ARIZ [Blumer 16, 202, 1202, 2215].

Hymenothrix wislizenii Gray
Hymenothrix wislizenii Gray var. setiformis M.E. Jones
Chiricahua Ms.: Chiricahua Nat. Mon. in hills north of Finery Canyon Road. Fort Bowie Nat. Historic Site in South Canyon, Apache Pass; West Turkey Creek, El Coronado Ranch; San Simon Valley; near Portal. Also Huachuca Ms., Rincon Ms., Santa Catalina Ms., Pinaleño Ms., Animas Ms. Greenlee, Graham, Gila, Cochise, Santa Cruz, Pima, and Pinal counties. Southern New Mexico, southern Arizona, and northern Mexico. Southwestern.

Exsicc.: CHIR [Dodd 5-6, Reeves 1642, 4471, 4557]. FOBO [MHoy 440]. SWRS [SWRS 1959-618, 1959-216].

Hymenothrix Wrightii Gray

{(4,000) - 5,300 [8,000] ft. [Jun] - Sep [Nov]}

Annual forb, scapose or leafy-stemmed therophyte; leptophyll, orthophyll. Uncommon in evergreen woodland, south-facing slopes; rocky soil and on outcrops. Agave, Fouquieria, Opuntia.

Chiricahua Ms.: Chiricahua Nat. Mon. on Bonita-Faraway Hills, lower Rhyolite Canyon; Fort Bowie Nat. Historic Site in Apache Pass; Rucker Canyon; Paradise; Galeyville. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Pinaleño Ms., Sierra de los Ajos. Greenlee, southern Navajo, northern Yavapai, and eastern Mohave counties; south to Cochise, Santa Cruz, and Pima counties. Southern New Mexico, central and southern Arizona, southern California, and northern Mexico. Southwestern.

Exsicc.: CHIR [Fish 30, Moir 547, Reeves 1869]. SWRS [Cummins 226-61].

Hymenoxys Odorata DC.

Bitterweed

{5,250 - 5,400 [6,000] ft. [Jan] Apr - May [Jun]}

Winter-annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Uncommon on moist, alluvial soil.

Chiricahua Ms.: Paradise; South Fork Cave Creek near ford. Also Animas Ms. South-Central Navajo and eastern Coconino counties, to Greenlee, Cochise, Pima, and Yuma counties. Kansas to Texas, west to southeastern California, south into Mexico. Western.

Exsicc.: SWRS [SWRS 1959-65A, Walker s.n.]

Isocoma Acradenia (Greene) Greene

Aploppus Acradenus (Greene) Blake

{3,880 - [4,000] ft. [Jun] - Sep [Oct]}

Narrow leaf dicot shrub, nanophanerophyte; nanophyll, sclerophyll. Uncommon on dry uplands with subsurface moisture, often in saline soil.

Chiricahua Ms.: San Simon Clenses. Also Sierra Ancha. Coconino, Mohave, Gila, Maricopa, Pinal, Pima, Cochise, and Yuma counties. Southern Utah to Arizona, southern California, and northern Mexico. Southwestern.

Isocoma Coronopifolia (Gray) Greene

{[3,300] 5,000 - 5,400 ft. May - Aug [Nov]}

Narrow leaf dicot shrub, nanophanerophyte; nanophyll, sclerophyll. Common on grassland slopes and flats. Prospis velutina, Opuntia phaeacantha, Juniperus erythrocarpa, Calliandra eriophylla.

Chiricahua Ms.: Jnus Canyon; Fort Bowie Nat. Historic Site. Also Santa Catalina Ms., Santa Rita Ms., Rincon Ms., Little Dragon Ms., Huachuca Ms., Baboquivari Ms. Graham and Gila counties south to Cochise, Santa Cruz, and Pima counties. Chihuahuan.

Exsicc.: ARIZ [McCormick 59-113; Strandberg 357].

Isocoma Tenuisecta Greene

Haplopappus Tenuisectus (Greene) Blake


Narrow leaf dicot shrub, nanophanerophyte; nanophyll, sclerophyll. Common in pine-oak woodland but more common in oak woodland and desert grassland, especially on overgrazed ranges. Pinus engelmannii, P. leiophylla, P. douglasii. Quercus emoryi, Q. arizonica, Arcostaphylos pungens, Garrya wrightii.


Not eaten by cattle. Indicator of overgrazed, disclimax grasslands.

Exsicc.: CHIR [Reeves 4472]. FOBO [MHoy 317]. SWRS [Roth s.n.]

Iva Ambrosiifolia (Gray) Gray

Marsh elder

{[1,000] - 4,900 [5,500] ft. [May] Sep - [Oct]}

Annual forb, scapose or leafy-stemmed therophyte. Uncommon on open southerly-facing slopes and along washes; rocky, sandy soils.

Chiricahua Ms.: Fort Bowie Nat. Historic Site in wash east of trailer. Also Huachuca Ms., Rincon Ms., Santa Catalina Ms., Mule Ms. Greenlee, Pinal, Cochise, and Pima counties. Western Texas to southern Arizona and northern Mexico. Chihuahuan.

Exsicc.: FOBO [MHoy 510].

Iva Dealbata Gray

Woolly sumptweed

{5,000 ft. Sep. Perennial deciduous forb, scapose or leafy-stemmed hemiherbaceous; mesophyll, orthophyll. Disturbed ground in vicinity of adobe ruins.

Chiricahua Ms.: Fort Bowie Nat. Historic Site amongst ruins. Chihuahuan.

Exsicc.: FOBO [MHoy 342].

Lactuca Graminifolia Michx.

Lettuce


Chiricahua Ms.: Chiricahua Nat. Mon.; Paradise; Wilderness Area; South Fork Cave Creek. Also Rincon Ms., Sierra Ancha, Pinaleño Ms., Animas Ms., Santa Rita Ms., Sierra de los Ajos. Apache, Coconino, Gila, Cochise, Santa Cruz, and Pima counties. South Carolina to Florida, west to Arizona. Temperate, Southeastern.

Exsicc.: CHIR [Reeves 2854, 3469]. SWRS [Walker s.n.]. CHWA [Leithliter 427, 658].

Lactuca Serriola L.

Lactuca Scariola L.

Prickly lettuce

{[1,000] 5,000 - 6,000 [7,000] ft. [May] Jun - Sep. Summer-annual forb, scapose or leafy-stemmed therophyte; mesophyll, orthophyll. Uncommon on alluvium in canyons and disturbed soil, dry uplands.

Chiricahua Ms.: Chiricahua Nat. Mon. in Bonita Canyon; Fort Bowie Nat. Historic Site around ruins; Southwestern
Research Station; Paradise; Cave Creek. Also Rincon Mts.,
Sierra Ancha, Animas Mts., Canelo Hills. Navajo and Coconino
counties, south to Greenlee, Cochise, Pima, and Yuma counties.
Southern Canada and the United States; naturalized from
Europe. Holarctic, Introduced.
Exsic.: CHIR [Clark 8417, Reeves 3067, 4409]. FOBO
[MHoy 416]. SWRS [Pough 1961-82; Walker s.n.]; SWRS
1958-448]. ARIZ [Blumer 1335].

Lactuca tatarica (L.) C.A. May var. pulchella
(Pursh) Breitung
Lactuca oblongifolia Nutt., L. pulchella (Pursh)
DC., L. tatarica ssp. pulchella (Pursh) Stebbins, L.
tatarica var. heterophylla (Nutt.) Boivin, Sonchus
taraticus L. pro parte
Lettuce
Uncommon in mesic canyons bottoms and seeps. *Quercus emoryi*,
Platanae wildtii.
Chiricahua Mts.: Chiricahua Nat. Mon. at Headquarters
Chiricahua Mts.: Fort Bowie Nat. Historic
area; Fort Bowie Nat. Historic Site; Greenhouse Trail;
Wilderness Area, Monte Vista Peak. Also Huachuca Mts.,
Rincon Mts., Santa Catalina Mts., Mule Mts., Animas Mts.,
Coconino County to Greenlee, Cochise, and Pima counties.
Southern Arizona to Oregon, California, and Baja California.
Temperate. Uncommon on xeric
Exsic.: CHIR [Fish 16].

Laennecia coulteri (Gray) Nesom
Conyza coulteri Gray, Eschenbachia coulteri (Gray)
Rydby
Summer-annual herb. Uncommon in deep mesic canyons
Uncommon in mesic canyons bottoms and seeps. *Quercus emoryi*,
Platanae wildtii.
Chiricahua Mts.: Chiricahua Nat. Mon. at Lower Madrone
Canyon, Bonita Canyon, Silver Spur Meadow. Apache, Navajo,
Coconino, and Cochise counties. Saskatchewan to British
Columbia, south to Missouri, New Mexico, Arizona, and
California. Temperate.
Exsic.: CHIR [Fish 1, Reeves 1265, 1556, 4352]. SWRS
[1959-825].

Laennecia schiedeanus (Less.) Nesom
Conyza schiedeanus (Less.) Cronq., Erigeron
schiedeanus Less., Leptilin integrifolium Woot. and
Standl.
annual forb, scapose or leafy-stemmed therophyte; microphyll,
orthophyll. Uncommon on disturbed soil, mesic canyons, dry
uplands, cultivated fields. *Quercus arizonica*, *Q. emoryi*.
Chiricahua Mts.: Chiricahua Nat. Mon.; Rucker Canyon;
Cave Creek Canyon. Also Huachuca Mts., Sierra Ancha,
Animas Mts. Cochise, Santa Cruz, and Pima counties.
Southwestern New Mexico, southeastern Arizona, and Mexico.
Madrean.
Exsic.: CHIR [Reeves 4464].

Lasianthaea podocephala (Gray) K. Becker
Verbescina podocephala Gray, Zeuxenia
podocephala (Gray) Gray
[4,500] 5,500 - 6,200 ft. Aug. - Sep. Perennial deciduous
forb, scapose or leafy-stemmed hemicyrptophyte; microphyll,
Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Park,
Rhyolite Canyon; Tex Canyon. Also Huachuca Mts., Rincon
Mts., Mule Mts., Canelo Hills. Cochise, Santa Cruz, and Pima
counties. Southwestern New Mexico, southeastern Arizona, and
northern Mexico. Madrean.
Exsic.: CHIR [Fish 1, Reeves 1265, 1556, 4352]. SWRS
[1959-825].

Lasthenia californica DC. ex Lindl.
Baeria chrysostoma Fisch. and C.A. Mey., B.
chrysostoma ssp. gradiis (DC.) Ferris, B.
chrysostoma ssp. hirsutula (Greene) Ferris, B.
chrysostoma var. gradiis (DC.) Hall, Lasthenia
chrysostoma (Fisch. and C.A. Mey.) Greene
Goldfield
forb, scapose or leafy-stemmed therophyte. Common on xeric
gravelly flats and rocky slopes, makes its best growth on
north-facing aspects.
Chiricahua Mts.: Fort Bowie Nat. Historic Site beside trail.
Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Graham,
Gila, Maricopa, Final, Cochise, and Pima counties. Central and
southern Arizona to Oregon, California, and Baja California.
Southwestern.
Onnduff (1966).

Leibnitzia seemannii (Schultz-Bip.) Nesom
Chaptalia alsophila Greene, C. leucocephala
Greene, C. seemannii (Schultz-Bip.) Hems1.
6,500 - [8,400] ft. [May] Oct. - [May]. Perennial deciduous forb,
rosette herb; mesophyll, orthophyll. Uncommon on shaded
slopes, coniferous forests. *Pinus arizonica*.
Chiricahua Mts.: Rucker Canyon. Also Rincon Mts., White
Mts., Huachuca Mts., Swisshelm Mts. Southern Apache County,
Cochise, and Pima counties. Southwestern New Mexico,
southeastern Arizona, and Mexico. Madrean.

Machaeranthera bigelovii (Gray) Greene var.
bigelovii
ex Woot. and Standl.) Blake, A. bigelovii Gray, A.
pattersonii Gray, A. rubrotinctus Blake,
Machaeranthera aquifolia Greene ex Woot. and
Standl., M. centaureoides Greene ex Woot. and
Standl., M. pattersonii (Gray) Greene, M.
rubricaulis Rydb.
Machaeranthera canescens (Pursh) Gray ssp. canescens

Aster attenuatus (T.J. Howell) M.E. Peck, non Lindl. ex Hook., A. tephrodes (Gray) Blake, Dieteria incana (Lindl.) Torr. and Gray, Diploppapus incanus Lindl., Machaeranthera attenuata T.J. Howell, M. canescens var. tephrodes Gray, M. incana (Lindl.) Greene, M. tephrodes (Gray) Greene


Machaeranthera gracilis (Nutt.) Shinnners

Dieteria gracilis (Nutt.), non Aster gracilis (Nutt.) Gray, Haplopappus gracilis (Nutt.) Gray, Sideranthus gracilis (Nutt.) A. Nels., H. ravenii R.C. Jackson

[5,000] 5,500 - 7,000 ft. [Feb] Jun - Sep [Nov].

Machaeranthera parviflora Gray


Machaeranthera pinnatifida (Hook.) Shinnners ssp. gooddingii Turner and Hartman

Perennial deciduous forb, scapose or leafy-stemmed hemicyryptophyte; nanophyll, orthophyll.

Machaeranthera pinnatifida (Hook.) Shinnners ssp. pinnatifida var. pinnatifida.


Exsicc.: CHIR [Reeves 2754, 3005, 3525]. SWRS [MHoy 105]. SWRS [Cazier s.n., SWRS 1959-37].

**Machaeranthera tagetina** Greene

*Aster tagetinus* (Greene) Blake


Exsicc.: FOBO [MHoy 316]. SWRS [SWRS 1959-850].

**Machaeranthera tancetfolia** (Kunth) Nees


Chiricahua Mts.: Chiricahua Nat. Mon.; eastern foothills; Pine Canyon at Methodist Camp. Also Mule Mts., Animas Mts. Northern Navajo County, Coconino County to Yavapai, Graham, Cochise, Santa Cruz, and Pima counties. South Dakota to Alberta, Arizona, and Mexico. Western.

Exsicc.: CHIR [Fish 28, Reeves 3871, 4429, 4454]. SWRS [SWRS 1958-824].

**Malacothrix fendleri** Gray


Exsicc.: CHIR [Fish 43, Reeves 2541, 2570, 2591, Roseberry 75]. FOBO [MHoy 392]. SWRS [Walker s.n.; SWRS 1959-37].

**Melampodium longicorne** Gray

[4,000] 5,150 - 5,600 ft. [Aug] - Sep. Summer annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Uncommon in grassy or gravelly openings in open oak woods, canyons, often on limestone. *Pinus discolor, P. leiophylla, Quercus emoryi, Q. arizonica, Arctostaphylos pungens.*


Exsicc.: CHIR [Reeves 1496, 4536].

**Melampodium sericeum** Lag.

*Melampodium hispidum* Kunth


Exsicc.: SWRS [Roth s.n.].

**Melampodium strigosum** Stuessy

5,200 - 6,000 ft. Aug - Sep. Summer-annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Uncommon in grassland and grassy openings in woods, limestone. *Ceanothus greggi, Quercus emoryi, Bouteloua gracilis, Gnaphalium wrightii.*


Exsicc.: CHIR [Moir 549, Reeves 1670, 4447A]. ARIZ [Blumer 1665].

**Microseris lindleyi** (DC.) Gray

*Microseris linearifolia* (Nutt.) Schultz-Bip., *Uropappus linearifolius* Nutt.

**Silver puff**


Chiricahua Mts.: Chiricahua Nat. Mon. at mouth of Rhyolite Canyon; Fort Bowie Nat. Historic Site at Apache Spring. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleno Mts., Animas Mts. Grand Canyon (Coconino County) and Mohave County to Cochise, Santa Cruz, and Pima counties. Idaho and Washington to New Mexico, Arizona, and Baja California. Western.

Exsicc.: FOBO [MHoy 390]. CHIR [Fish 43, Reeves 2349, 2504, 2592].

**Parthenium incanum** Kunth

*Mariaola*


Chiricahua Mts.: Chiricahua Nat. Mon. in lower Pickett Canyon; Fort Bowie Nat. Historic Site at Overlook in Apache Pass; east of Portal; Portal - Paradise road; San Simon Cienega; Pedregosa Mts. foothills. Also Rincon Mts., Santa Catalina Mts., Male Mts., Animas Mts. Coconino County, Mohave County,
Pectis angustifolia Torr. var. angustifolia

Limoncillo

\[3,500 - 5,500 \text{ ft.} \] Aug - Sep. Summer-annual forb, scapose or leafy-stemmed therophyte. Uncommon in grassy slopes and open oak woodland, drainage, dry sands, or gravelly flats.

Chiricahua Mts.: Chiricahua Nat. Mon. in lower Rhyolite Canyon, Bonita Canyon near campground, Bonita-Faraway Hills; Fort Bowie Nat. Historic Site in South canyon; Southwestern Research Station; Cave Creek Canyon; Paradise. Also Huachucas Mts., Rincon Mts., Santa Catalina Mts., Canelo Hills. Greenlee, Pinal, Cochise, Santa Cruz, and Pima counties. Western Texas to southeastern Arizona. Southwestern.

Exsicc.: CHIR [Reeves 1491].

Pectis filipes Harvey and Gray var. subnuda Fern.

Threadstem pectis, feket marigold

\[3,000 - 4,600 \text{ ft.} \] Aug - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemicyrtophyte; orthophyll. Uncommon in grassy slopes and open oak woodland, drainage, dry sands, and gravelly flats.


Exsicc.: CHIR [Clark 8724, Reeves 1272, 1489, 4026, 4184, 4393]. SWRS [Frisch s.n.]: FOMO [MHoy 314].

Pectis longipes Gray

Fetid marigold

\[3,500 - 5,300 \text{ ft.} \] Apr - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemicyrtophyte; orthophyll. Common in crevices of vertical, rocky slopes and gravelly flats.

Chiricahua Mts.: Chiricahua Nat. Mon. in lower Rhyolite Canyon, Bonita Canyon near campground, Bonita-Faraway Hills; Fort Bowie Nat. Historic Site in South canyon; Southwestern Research Station; Cave Creek Canyon; Paradise. Also Huachucas Mts., Rincon Mts., Santa Catalina Mts., Canelo Hills. Greenlee, Pinal, Cochise, Santa Cruz, and Pima counties. Western Texas to southeastern Arizona. Southwestern.

Exsicc.: CHIR [Reeves 1491].

Pectis papposa Harvey and Gray var. papposa Chinchweed

\[2,800 - 5,650 \text{ ft.} \] Jun - Aug. Summer-annual forb, scapose or leafy-stemmed therophyte. Uncommon in grassy slopes and open oak woodland, drainage, dry uplands, sandy-gravelly plains and mesas.


Exsicc.: CHIR [Reeves 1583]. SWRS [Craizer s.n.].

Pectis prostrata Cav.

Pectis multisetae Rydb., P. prostrata var. urceolata Fern

Fetid marigold

\[4,000 - 6,200 \text{ ft.} \] Aug - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemicyrtophyte; orthophyll. Uncommon in crevices of vertical, rocky slopes and gravelly flats.

Chiricahua Mts.: Chiricahua Nat. Mon. in lower Rhyolite Canyon; Fort Bowie Nat. Historic Site at Apache Pass; near Southwestern Research Station; Paradise; along road east of Onion Saddle; base of mountains north of Rucker Canyon, Straight Line Road at Willow Tank. Also Rincon Mts., Santa Catalina Mts., Pinaleño Mts., Animas Mts., Greenlee, Graham, Gila, Cochise, Santa Cruz, and Pima counties. Western Texas to southeastern Arizona, South to northern South America; also in Florida, Cuba, and Jamaica. Latin American.

Exsicc.: CHIR [Clark 8724, Reeves 1272, 1489, 1700, 4026, 4184, 4393]. SWRS [Frisch s.n.]: FOMO [MHoy 314].

Pericome caudata Gray

Pericome caudata var. glandulosa (Goodman)

Harrington

\[6,000 - 9,000 \text{ ft.} \] Jul - Oct. Perennial deciduous forb, scapose or leafy-stemmed hemicyrtophyte; microphyll. Uncommon in crevices of vertical, rocky slopes and gravelly flats.

Chiricahua Mts.: 7 mi. northwest of Southwestern Research Station; Wilderness Area; upper pine Canyon; Barfoot Peak; near Mormon Spring; north slope Bonita Peak; Barfoot Peak; Buena Vista Peak. Also Pinaleño Mts., Santa Rita Mts., Baboquivari Mts., Huachucas Mts., Apache, Navajo, Coconino, Greenlee, Graham, Cochise, Santa Cruz, and Pima counties. Southern Colorado and New Mexico to southern Nevada, California, and Chihuahua. Southwestern.

Exsicc.: SWRS [Ordway s.n.]: CHWA [Leithliter 624, 678, 842], ARIZ [Blumer 1470, Van Deever and Eiber s.n., 85-199, (and Nishida s.n.), Peterson s.n.].
Pinaropappus roseus (Less.) Less. var. foliosus (Heller) Shinners


Type collected from the Chiricahua Mts. by J.C. Blumer. Exsicc.: CHWA [Harrison et al. 6194, 1571, 213, 1448, IR. 4].

Plummera floribunda Gray


This plant, described as new to science was collected by J.G. Lemmon and wife in Apache Pass (s.n.) circa 1881. Gray named the genus to commemorate Mrs. Lemmon's maiden name, Plummer.

Exsicc.: CHIR [Clark 8346, 8651, Darrow s.n., Reeves 1285, 1889, 3133A, 3663A, 3958A]. ARIZ [Bowers and McLaughlin 3208, Gould and Haskell 4620, Darrow s.n., Clark s.n., Bingham 2428, Blumer 144].

Porophyllum ruderale (Jacq.) Cass. ssp. macrocephalum (DC.) R.R. Johnson


Exsicc.: SWRS [Roth s.n.].

Psoralium decompositum (Gray) H.E. Robbins and Brett.

*Cacalia decomposita* Gray, *Odontotrichum decompositum* (Gray) Rydb.

Indian plantain


Chiricahua Mts.: Chiricahua Nat. Mon. in far upper Totem Canyon; Onion Saddle; Cave Creek Canyon; Barfoot Park; Round Park; Rucker Canyon; Pine Canyon. Also Huachuca Mts., Patagonia Mts., Animas Mts. Southern New Mexico, southeastern Arizona, and Sonora. Madrean.

Robins and Brettel (1973).
Ratibida columnifera (Nutt.) Woot. and Standl.

Lepachys columnifera (Nutt.) Rydb., Ratibida columnaris (Sims) D. Don, C. columnaris var. pulcherrima (DC.) D. Don, Rudbeckia columnaris Sims, R. columnaris Pursh, non Sims, R. columnifera Nutt.

Prairie cone-flower

Chiricahua Mts.: Fort Bowie Nat. Historic Site around fort ruins; Paradise; junction Port road and Highway 80. Also Animas Mts. Apache, Navajo, Coonino, Greenlee, and Santa Cruz counties. Minnesota to British Columbia, south to Tennessee, Colorado, and Arizona. Temperate.

Exsicc.: SWRS [Walker s.n., Morse s.n.], FOBO [MHoy 225].

Rudbeckia laciniata L.

Brown-eyed Susan, cut-leaf coneflower

Pseudotsuga menziesii, Pinus strobusfomis, Abies concolor, Nasturtium officinale, Viola canadensis, Aquilegia chrysantha, Mimulus cardinalis, Mimulus guttatus.


Reputedly poisonous to cattle, sheep, and swine.

Exsicc.: SWRS [Ordway 101].

Sanvitalia abertii Gray

[3,500] 5,000 - 6,000 [7,500] ft. Aug - Sep. Summer annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Common in southerly-facing openings in woodland, grassland, grassland scrub, and along washes.

Quercus arizonica, Q. emoryi, Pinus discolor, P. engelmannii, Juniperus deppeana.

Chiricahua Mts.: Chirichahua Nat. Mon. in Whitetail Canyon, Bonita Canyon; Fort Bowie Nat. Historic Site around fort ruins; Cave Creek, Southwestern Research Station; Paradise; East Turkey Creek; Sulphur Draw; Hands Pass. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Mule Mts., Pinaleno Mts., Animas Mts., Apache County to eastern Mohave County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Southwestern.

Exsicc.: CHIR [Borell 1, Clark 8708, Dodd 57, Moir 452, Reeves 1297A, 1591, 4437]. FOBO [MHoy 299].

Senecio bigelovii Gray var. bigelovii

Ligularia bigelovii (Gray) J.M. Webber

Groundsel

Chiricahua Mts.: Greenhouse Trail; Long Park; Wilderness Area along Crest Trail; Long Park; Round Park; Barfoot Park. Also Rincon Mts., Pinaleio Mts., Santa Catalina Mts., White Mts. San Francisco Peaks to the Mogollon Escarpment (Coconino County), Apache, Greenlee, Graham, Cochise, and Pima counties. New Mexico and Arizona. Rocky Mountain.

Exsicc.: SWRS [Walker s.n.].

Senecio eremophillus Richards var.

macdougallii (Heller) Cronq.

Senecio eremophillus ssp. macdougallii (Heller) G.W. and G.R. Doug., S. macdougallii Heller


Chiricahua Mts.: 2 mi. east of Onion Saddle; Barfoot Park; Wilderness Area; Fenery Canyon; Greenhouse Canyon; Choperon Canyon; Barfoot Park; Rustler Park; Centella Point. Also Sierra Ancha, Pinaleio Mts. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Wyoming, Colorado, New Mexico and Arizona. Southwestern.


Exsicc.: SWRS [Ordway s.n.].

Senecio flaccidus Less. var. douglasii (DC.) B.L. Turner and T.M. Barkl.

Senecio douglasii DC. S. douglasii var. tularensis Munz

Sand wash groundsel
[1,000] - 5,000 [6,000] ft. [Jan] - [Dec]. Perennial deciduous forb, scapose or leafy-stemmed hemicyryptophyte. Common on xeric upland slopes, openings on south-facing canyon walls, open flats; sandy or gravelly soils. Chrysanthemum nauseosum, Bouleuca curtipendula, B. gracilis.


Exsicc.: SWRS [MHoy s.n.].

Senecio flaccidus Less. var. flaccidus


Exsicc.: ARIZ [Blumer 38, 39, 1635, Moir 502, Reichenbacher and Van Devender s.n., Fish s.n.].
DC. var. longilobus (Benth.) L. Benson, S. filifolius Nutt., non Berg., S. longilobus Benth.

Threadleaf groundsel
Suffrutescent shrub, scapose or leafy-stemmed proto-chamaephyte; nanophyll, orthophyll. Common on rangeland, disturbed soil, dry plains, slopes and washes. Prosopis glandulosa, Bouteloua gracilis.

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon, lower Little Pickett Canyon; Fort Bowie Nat. Historic Site at Apache Pass Road, on hill northeast of Overlook; West Turkey Creek; Rustler Park; Hands Pass; along Silver Creek Road; Big Emigrant Canyon; near Portal; Canelo Hills; Sierra de los Ajos. Also Huachuca Mts., Mule Mts., Pinaleño Mts., Animas Mts., Apache, Navajo, Greenlee, Coconino counties. Also Huachuca Mts., Rincon Mts., Common in openings on dry south-facing pine forest slopes but Senecio demors, Pinus leiophylla, P. discolor.

Senecio parryi Gray
Mountain groundsel


Senecio eurypterus Greenm., S. neomexicanus var. griffithii Greenm., S. orebius Greenm., S. thurberi Gray, Packera neomexicana (Gray) W.A. Weber and A. Löve

Groundsel

Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon, Totem Canyon; Fort Bowie Nat. Historic Site in Cut Off Canyon; Flys Peak Trail; Barfoot Park; Tex Canyon; Flys Peak; Rucker Canyon; Whitetail Canyon; South Fork Cave Creek; Centella Point. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., White Mts., Animas Mts., Sierra de los Ajos. Apache, Navajo, Greenlee, Coconino counties, to Cochise, Santa Cruz, and Pima counties. Colorado, New Mexico, Arizona, and Sonora, Mexico. Rocky Mountain.

Solidago missouriensis Nutt. var. missouriensis

Solidago missouriensis var. montana Gray

Solidago parryi (Gray) Greene

Solidago velutina DC.

Solidago wrightii Gray var. adenophora Blake

Sonchus asper (L.) Hill

Sonchus oleraceus L.

Stephanomeria exigua Nutt.

Annual mitra

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Stephanomeria pauciflora (Torr.) A. Nels. 
Lygodesmia pauciflora (Torr.) Shinners, Piloria pauciflora (Torr.) Raf., Stephanomeria cincerea (Blake) Blake, S. neomexicana (Green) Cory, S. pauciflora var. parishii (Jepson) Munz

Wire-lettuce, stick-weed


The Hopi Indians, according to one authority, apply the plant both internally and externally to stimulate milk flow in women.

Exsicc.: CHIR [Reeves 3531, 3855, 3872]. FOBO [MHoy 182]. SWRS [Barnes s.n.].

Stephanomeria tenuifolia (Raf.) Hall


Exsicc.: CHIR [Clark 8963].

Stephanomeria thurberi Gray

Lygodesmia thurberi (Gray) Shinners

Wire-lettuce, stick-weed


Exsicc.: CHIR [Reeves 1674, 2759, 2905]. SWRS [Walker s.n.; Pough 1961-134].

Stevia micrantha Lag.


Chiricahua Mts.: Rucker Canyon; Cave Creek Canyon. Also Huachuca Mts., Mule Mts., Animas Mts., Canelo Hills. Southwestern New Mexico, southern Arizona, and Mexico. Madrean.

Exsicc.: SWRS [Walker s.n.].

Stevia plummerae Gray

[6,000] 6,950 - 9,190 ft. Jul - Oct. Perennial deciduous forb, scapose or leafy-stemmed hemicyrppophyte; microphyll, orthophyll. Common on rich soil in canyons.

Chiricahua Mts.: Union Saddle; Wilderness Area; upper Pine Canyon; below Rustler Park; Pinery Canyon; Barfoot Park; north-facing slope Flys Peak; Rucker Canyon. Also Huachuca Mts. Apache, Cochise, Santa Cruz, and Pima counties. New Mexico, Arizona, and northern Mexico. Madrean.

This plant, described as new to science was collected by J.C. Lemmon and wife near Rucker Canyon circa 1881. The species epithet honors Mrs. Lemmon’s maiden name, Plummer.

Exsicc.: SWRS s.c. s.n.]. CHWA [Leithliter 480, 826, 836, 856].

Stevia serrata Cav.

Stevia serrata var. haploppapa B.L. Robins., Stevia serrata var. ivyfolia (Willd.) B.L. Robins.


Chiricahua Mts.: Chiricahua Nat. Mon. in East Whitetail Canyon and Heart of Rocks Trail; Barfoot Park; Wilderness Area, along Crest Trail; below Rustler Park; Onion Saddle. Also Huachuca Mts., Santa Catalina Mts., Mule Mts., Pinaleño Mts., Canelo Hills, Sierra de los Ajos. Southern Apache, Graham, Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona, southward into Mexico. Madrean.

Exsicc.: CHIR [Clark 7822, Dodd s.n.]. SWRS [Ordway s.n.]. CHWA [Leithliter 302, 579, 679, 680, 794, 795, 822].

Tagetes micrantha Cav.

Tagetes fragrantissima Sessé and Moc.

Marigold, anisillo


Chiricahua Mts.: Chiricahua Nat. Mon. at Stay Point, Picket Park, Garfield Peak; West Turkey Creek at El Coronado Ranch; Rucker Canyon; Shelter Cove. Also Rincon Mts., Mule Mts., Santa Catalina Mts., Canelo Hills. Southern parts of Apache, Navajo, and Coconino counties. Western Texas to Arizona and central Mexico. Apachean.

Exsicc.: CHIR [Clark 8667, Moir 561, Reeves 1488, 1878, 4535]. SWRS [Luetke s.n.].

Taraxacum laevigatum (Willd.) DC.


Red-seeded dandelion


Exsicc.: CHWA [Leithliter 774].

Taraxacum officinale Weber ex Wiggers

Dandelion

Chiricahua Ms.; Chiricahua Nat. Mon. at Meadow and Lower Bonita Canyon; Cave Creek; Centella Point. Also Pinaleno Ms., Sierra Ancha, Apache, Navajo, and Coconino counties to Cochise, Santa Cruz, and Pima counties. Northern Canada to Mexico. Naturalized from the Old World. Temperate. Introduced. Kartesz (1994) lists 56 synonyms distributed among 3 subspecies. Exsicc.: CHIR [Clark 9025, Reeves 1540, 2432]. SWRS [SWRS 1959-3].

Thelesperma longipes Gray
Navajo tea, cota
Chiricahua Ms.: Fort Bowie Nat. Historic Site on hill north of Overlook; Paradise; Trail to Paradise road. Also Huachuca Ms., Santa Catalina Ms., Mule Ms., Cochise, Santa Cruz, and Pima counties. Western Texas to southeastern Arizona and northern Mexico. Chihuahuan.

Thymophylla pentachaeta (DC.) Small var. pentachaeta
*Dyssodia pentachaeta* (DC.) B.L. Robins., *Thymophylla pentachaeta* (DC.) Small var. pentachaeta

Thymophylla acerosa (DC.) Strother
*Narrowleaf thyme*

Dogweed

Thymophylla pentachaeta (DC.) Small var. hartwegii (Gray) Strother

var. *hartwegii* (Gray) Strother

Chiricahua Ms.: Portal, Limestone Mtn., and along Silver Creek. Also Mule Ms. Southeastern Arizona to central Mexico. Chihuahuan.
Verbesina encelioides (Cav.) Benth. and Hook.
Verbesina encelioides var. exauriculata Robins. and Greenm.; V. exauriculata (Robins. and Greenm.) 
Cockerell, Ximenia encelioides var. exauriculata (Robins. and Greenm.) F.C. Gates

X. exauriculata (Robins. and Greenm.) Ryd.b.
Golden crown-beard
5,000 - 9,300 ft. [Apr] May - Oct [Nov]. Summer-annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Common in open, grassy places in woodlands, grassland scrub, on roadsides and waste ground. Quercus emoryi, Dazylirion wheeleri, Bouteloua rothrockii.

Chiricahua Mts.: Chiricahua Nat. Mon. in grassland west of monument, Jesse James Canyon, Bonita Canyon, Whetstail Canyon; Centella Point; Fort Bowie Nat. Historic Site along Apache Pass Road; Southwestern Research Station; San Simon Cienega, Portal to Paradise road. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Mule Mts., Pinafore Mts., Animas Mts. Apache County to Mohave County, south to Coochise, Pima, and Yuma counties. Kansas to Montana, south to Texas, California, and northern Mexico. Plains.

This plant is said to have been used by Indians and white pioneers for boils and skin disease. The Hopis are reported to bathe in water in which this plant has been soaked to relieve the pain of spider bite.

Exsiccs.: CHIR [Borell 6, Clark 8266, Reeves 1560, 1769, 3415]. SWRS [Ordway s.n.; Roth s.n.]. FOBO [MHoy 186].

Verbesina longifolia (Gray) Gray
Actinomeris longifolia Gray

Crown-beard


Verbesina rothrockii Robins. and Greenm.


Exsiccs.: SWRS [Barr 61-316]. FOBO [MHoy 300].

Viguiera dentata (Cav.) Spreng.


Blake (1918).

Exsiccs.: CHIR [Reeves 1506, 1669]. SWRS [Cummins s.n.]. FOBO [MHoy 476].

Viguiera parishii Green

Viguiera deltoidea Gray var. parishii (Greene) Vasey and Rose


Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Santa Catalina Mts. Oatman (Mohave County) and from southern Yavapai and western Gila counties to Pima and Yuma counties. Southern Nevada to southern Arizona, southern California, and southwestern Mexico. Sonoran.

Blake (1918).

Observed by: Paul Fugate.

Viguiera trilobata (Gray) J. Olsen

Zaluzania grayana Robins. and Greenm.

6,720 - 8,530 ft. Jul - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemicyryptophyte; microphyll, orthophyll. Shade, along streams, gullies and rocky, north-facing slopes, canyons.

Chiricahua Mts.: north side of Silver Peak; East Turkey Creek; Wilderness Area, also Huachuca Mts., Animas Mts. Cochise County. Southwestern New Mexico, southern Arizona, and Chihuahua. Madrean.

This plant, described as new to science was collected by J.G. Lemmon and wife in the Chiricahua Mts. circa 1881.

Exsiccs.: SWRS [Walker s.n.] CHWA [Leithliter 586, 607, 662].

Xanthium strumarium L. var. canadense (P. Mill.) Torr. and Gray


Cocklebur

Summer-annual forb, scapose or leafy-stemmed therophyte; mesophyll, orthophyll. Uncommon in sandy places and drainage bottoms, moist, alluvial soil. Platanus wrightii, Quercus emoryi.


Exsicc.: CHIR [Clark 8259, Reeves 1657]. SWRS [Roth s.n.].

Zinnia acerosa (DC.) Gray

Zinnia pumila Gray

Suffrutescent shrub, suffrutescent low chamaephyte. Common in dry slopes and mesas, commonly on "caliche" soil.


Exsicc.: SWRS [Cummins s.n.]. FOBO [MHoy 320].

Zinnia grandiflora Nutt.

Crassina grandijlora (Nutt.) Kuntze


Chiricahua Mts.: Portal to Paradise road; upper Tex Canyon; Chiricahua Nat. Mon. on side slopes of Bonita Canyon; Fort Bowie Nat. Historic Site in South Canyon, Canelo Hills. Also Huachuca Mts., Mule Mts., Pinaleno Mts. Navajo County to eastern Mohave County, south to Greenlee, Cochise, and Santa Cruz counties. Kansas to Nevada, south to Texas, Arizona, and northern Mexico. Southwestern.

Exsicc.: CHIR [Clark 8552, Reeves 1439, 2752, 3997, 4192]. FOBO [MHoy 296].

BERBERIDACEAE—Barberry Family.

A family of perennial herbs or shrubs; rootstocks sometimes of creeping rhizomes or tubers. A family of ten to twelve genera and about 200 species in the north temperate regions (some Berberis extend into southern South America). The economic importance of the family is largely confined to their use as ornamentals.

Berberis wilcoxii Kearney

Odostemon wilcoxii (Kearney) Heller

Barberry, holly-grape


Exsicc: CHIR [Clark 8151, Reeves 1358, 2830]. SWRS [Ordway 57].

BIGNONIACEAE—Bignonia Family.

A family of trees or shrubs, often climbing or twining vines, rarely herbs. Primarily a tropical family of many genera (about 110) but relatively few species (750), particularly abundant in northern South America.

Chilopsis linearis (Cav.) Sweet sspp. linearis

Bignonia linearis Cav., Chilopsis linearis var. glutinosa (Engelm.) Fosberg; C. linearis var. originaria Fosberg

Desert-willow

Narrowleaf dicot shrub, microphanerophyte; microphyll, orthophyll. Common in oak woodland and commonly along washes, moist sinks and water holes in dry, well-drained sandy and gravelly soils. Scattered, usually not forming pure stands. Intolerant of shade.

Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Pickett Canyon; Fort Bowie Nat. Historic Site in South Canyon; Whitewater Draw; San Simon Valley along Cave Creek; Paradise to Portal road. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Pinaleno Mts., Animas Mts., Sierra de los Ajos. Cocomino and Mohave counties to Greenlee, Cochise, Santa Cruz, Pima, and Yuma counties.

Western Texas to southern Nevada, Arizona, southern California, and northern Mexico. Sonoran, Chihuahuan.

Used as an ornamental in the Southwest. Also prized for fence posts because of durability in contact with the ground. Maturity likely reached in less than 50 years. Old trunks are subject to heart rot. Fosberg (1936); Sudworth (1908).

Exsicc: CHIR [Clark 8291, Reeves 2940, 3068, 4293].

SWRS [SWRS 1959-219].

Tecoma stans (L.) Juss. ex Kunth

Bignonia stans L., Tecoma stans var. angustatum Rehd.


Cultivated as an ornamental in the United States. The roots are used in Mexico medicinally and for making a sort of beer.

Exsicc: SWRS [Letuchke s.n.]. ARIZ [Goddig 141-47, M.E. Jones 7733].

BORAGINACEAE—Borage Family.

A family of wide distribution containing 100 genera and 2,000 species. Their chief economic value is as ornamentals.
Amsinckia intermedia Fisch. and C.A. Mey.  
*Amsinckia arizonica* Suksdorff, *A. demissa* Suksdorff,  
*Amsinckia echinata* Gray, *A. intactilis* J.F. Macbr.,  
Coast fiddleneck  
Exsicc: SWRS [Moat s.n.].

Cryptantha angustifolia (Torr.) Greene  
*Eremocarya angustifolia* Torr.  
5,200 ft. [Feb] May - [Jun]. Winter-annual forb, scapose or leafy-stemmed therophyte. Uncommon on sunny south-facing hillsides and gravelly flats in grassland and desert scrub; sometimes on disturbed ground.  
Exsicc: SWRS [Moat s.n.].

Cryptantha crassisepala (Torr. and Gray) Greene  
Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site near parking lot; Portal. Also Mule Mts., Animas Mts. Apache County to eastern Coconino County, Mohave, Yavapai, Greenlee, Graham, Cochise, and eastern Pima counties. Southern Colorado and western Texas to southern Utah, Arizona, and northern Mexico. Madrean, Chihuahuan, Sonoran.  
Exsicc: CHIR [Reeves 2887, 3521]. FOBO [MHoy 96]. SWRS [Roth s.n.].

Cryptantha cinerea (Greene) Cronq. var. cinerea  
Exsicc: CHIR [Clark 8526, Reeves 3745, 3999, 4218].

Cryptantha micrantha (Torr.) I.M. Johnst.  
Exsicc: SWRS [Moat s.n.].

Cryptantha pusilla (Torr. and Gray) Greene  
*Eritrichium pusillum* Torr. and Gray  
Chiricahua Mts.: Horseshoe Canyon, 6 mi. south of Portal on limestone slope. Also Huachuca Mts., Animas Mts. Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona and northern Sonora. Chihuahuan.  

Hackelia pinetorum (Greene ex Gray) I.M. Johnston  
Chiricahua Mts.: near Winn Falls; East Turkey Creek. Coconino, Cochise, Santa Cruz, and Pima counties. New Mexico, Arizona, and Chihuahua. Chihuahuan.  

Hackelia urnsa (Greene ex Gray) I.M. Johnston  
Exsicc: SWRS [Walker s.n.].

Heliotropium fruticosum L.  
*Heliotropium phyllostachyum* Torr.  
Heliotrope  
Exsicc: CHIR [Reeves 1692, 4001].

Lappula occidentalis (S. Wats.) Greene var. cupulata (Gray) Higgins  


This plant has been used medicinally by the Hopi.

Exsicc: CHR [Reeves 2605]. FOBO [MHoy 438]. SWRS [Walker s.n.].

**Lappula occidentalis** (S. Wats.) Greene var. occidentalis


Stick-seed


Chiricahua Mts.: Fort Bowie Nat. Historic Site; Chiricahua Nat. Mon. in Newton Canyon; Pinery Canyon. Also Animas Mts. Graham, Gila, Cochise, and Pima counties. Kansas to Idaho, south to Texas, New Mexico, and Arizona. Southwestern.

Exsicc: ASU [Reeves 2594, 2637].

**Lithospermum multiflorum** Torr. ex Gray


Chiricahua Mts.: Chiricahua Nat. Mon.; Greenhouse Trail; Pinery Canyon at USFS administration site. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts. Apache County to Cochino County, south to Cochise and Pima counties.

Wyoming to New Mexico and Arizona. Rocky Mountain.

Exsicc: CHR [Clark 8144, Reeves 1755, 2791, 3394, 3548]. SWRS [Walker s.n., SWRS 1959-659]. CHWA [Leithliter 112, 150, 344].

**Macromeria viridiflora** DC. var. *thurberi* (Gray) I.M. Johnston

[6,000] - 7,500 [9,000] ft. Jul - [Sep]. Perennial deciduous forb, scapose or leafy-stemmed hemi-epiphyllous; microphyll, orthophyll. Uncommon on well-drained slopes, often on old burns.


New Mexico, Arizona, and northern Mexico. Southwestern.

It is said that the dried leaves and flowers mixed with tobacco are smoked by the Hopi Indians in their rain-bringing ceremony.

Exsicc: ARIZ [Blumer 1817].

**Mertensia franciscana** Heller

*Bluebells*


Chiricahua Mts.: Long Park; Wilderness Area along Crest Trail, Tub Spring. Also Pinaleño Mts., Santa Catalina Mts. Apache, Navajo, and Cochino counties to Cochise County, Western Colorado and southeastern Utah to New Mexico and Arizona. Rocky Mountain.


**Pectocarya platycarpa** (Munz and Johnston)


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Pectocarya recurvata I.M. Johnston

4,700 - 5,000 ft. [Feb] - [Apr]. Winter-anual forb, scapose or leafy-stemmed therophyte; leptophyll, orthophyll. Common on sunny well-drained desert scrub slopes of all aspects and flats; often on disturbed ground.


Arabis perennans S. Wats.

Arabis angulata Greene, A. arcuata (Nutt.) Gray var. perennans (S. Wats.) M.E. Jones, A. eremophila Greene, A. gracilenta Greene, A. recondita Greene, Boechera perennans (S. Wats.) W.A. Weber

Rock-cress


Chiricahua Mts.: Chiricahua Nat. Mon. in East Whiterattle Canyon; Fort Bowie Nat. Historic Site on hill northeast of overlook. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts. Apache County to Mohave County, south to Graham and Pima counties. Western Colorado to Arizona, southern California, northern Mexico, and Baja California. Southwestern. Exsicc.: CHIR [Reeves 2320]. Fobo [MHoy 68, 136].

Arabis tricornuta Rollins


Chiricahua Mts.: Barfoot Park; Barfoot Peak; Finery Canyon; Rustler Park; near Long Park; below Booteegger Saddle; Onion Saddle; upper Greenhouse trail; Rucker Canyon. Also Huachuca Mts., Santa Rita Mts., Rincon Mts. Apachean. Exsicc.: ARIZ [Blumer, 126, 1363, 1364, Urry 793]. Rollins et al. 74200, 74201, Barr 61-176, Mason et al. 2864, Berger 211, 212, Van Devender et al. 89-320, Gould and Haskell 4607, Darrow et al. 1228.

Barbarea orthoceras Lede.

Barbarea americana Rydb., B. orthoceras var. dolichocarpa Fern.

American winter cress


Chiricahua Mts.: Chaperon Canyon. Also Pinaleño Mts., White Mts. Back Springs (Coconino County), Camp Grant (Graham County), Apache and Cochise counties. Labrador to Alaska, south to New Hampshire, Colorado, Arizona, California, and Mexico; Eurasia. Temperate, Introduced. Exsicc.: ARIZ [Blumer 12, 1550].

Brassica nigra (L.) W.D.J. Koch

Sinapis nigra L.

Black mustard

8,200 ft. [Apr] Jul - Aug. Summer annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Rare on dry uplands, roadways.

Chiricahua Mts.: Barfoot Park. Also Sierra Ancha, Coconino, Pinal, Maricopa, Cochise, and Pima counties. Widely distributed in the United States; naturalized from Europe. Introduced. Exsicc.: ARIZ [Blumer NB.20, 1592].

Brassica rapa var. rapa

Brassica campestris L., B. campestris var. rapa (L.) Hartman, B. rapa ssp. campestris (L.) Clapham, Brassica rapa L. var olivera DC., B. rapa ssp. syvestris Janchen, B. rapa var. campestris (L.) W.D.J. Koch, Caulanthus sulphureus Payson
Field mustard

Chiricahua Mts.: Chiricahua Nat. Mon. in Residential Area. Also Pinaleno Mts. Mohave County, Maricopa County, Pinal County, Cochise County. Native of Eurasia. Introduced. Exsicc.: CHIR [Reeves 3926].

Camelina microcarpa DC.
Camelina sativa (L.) Crantz ssp. microcarpa (DC.) E. Schmid
False-flax

Chiricahua Mts.: Barfoot Park. Coconino, Maricopa, and Cochise counties. Widely distributed in U.S. An oil similar to linseed oil is expressed from the seeds. ARIZ specimens annotated to Camelina microcarpa by Goodding. Exsicc.: ARIZ [Blumer 1572].

Capsella bursa-pastoris (L.) Medik.


Caulanthus lasiophyllus (Hook. and Arn.) Payson var. lasiophyllus
Caulanthus lasiophyllus var. inalienus (B.L. Robins.) Payson, C. lasiophyllus var. utahensis (Ryd.) Payson, C. stenocarpus Payson, Thelypodium lasiophyllum (Hook and Arn.) Greene, T. lasiophyllum var. inalienum B.L. Robins., T. lasiophyllum var. utahense (Ryd.) Jepson, T. utahense Ryd.

Chiricahua Mts.: South Fork Cave Creek bridge. Also Rincon Mts., Santa Catalina Mts. Coconino, Mohave, Graham, Maricopa, Pinal, Cochise, Pima, and Yuma counties. Washington to Arizona, California, and Baja California. Western. Exsicc.: SWRS [SWRS 1959-20].

Descurainia incana (Benth. ex Fisch. and C.A. Mey.) Dorn ssp. viscosa (Ryd.) Kartesz and Gandhi
Descurainia incana var. viscosa (Ryd.) Dorn., D. richardsonii (Sweet) O.E. Schultz ssp. viscosa (Ryd.) Detling, Descurainia richardsonii var.
viscosa (Ryd.) M.E. Peck, Sisymbrium viscosum (Ryd.) Blank, Sophia viscosa Ryd.

Descurainia obtusa (Greene) O.E. Schultz ssp. brevisiliqua Detling
Tansy-mustard

Descurainia pinnata (Walt.) Britt. ssp. glabra (Woot. and Standl.) Detling
Descurainia pinnata var. glabra (Woot. and Standl.) Shinners, Sophia glabra Woot. and Standl.
Tansy-mustard

Descurainia sophia (L.) Webb. ex Prantl.
Sisymbrium sophia L., Sophia sophia (L.) Britt.
Tansy-mustard
4,900 - 5,400 ft. Mar - Apr. Winter-anual forb, semirosene therophyte. Uncommon in grassland and desert scrub on all but the most xeric slopes and flats, beside roads and low spots where additional moisture collects; an indicator of disturbance and overgrazing. Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Rhyolite Canyon; Fort Bowie Nat. Historic Site around fort ruins; alongside Cave Creek Road near Morrow’s orchard; Southwestern Research Station. Also Huachuca Mts., Sierra Ancha, Santa Catalina Mts. Coconino, Mohave, Graham, Gila, Pinal, Cochise, Santa Cruz, and Pima counties. Extensively naturalized in the United States; from Eurasia. Temperate. Introduced. Exsicc.: CHIR [Fish 47]. FOBO [MHoys 363]. SWRS [SWRS 1959-7, Roth s.n.].

Dimorphocarpa wislizenii (Engelm.) Rollins
Dithryea griffithsii Woot. and Standl., D. wislizenii Engelm., D. wislizenii var. griffithsii (Woot. and Standl.) Payson
Draba aurea Vahl ex Hornem.

Draba aurea var. leiocarpa (Payson and St. John) C.L. Hitchc., D. aurea var. neomexicana (Greene) Tidestrom, D. mingenensis (Victorin) Fern., D. neomexicana Greene.


Exsicc.: SWRS [Oudway 76].

Draba cuneifolia Nutt. ex Torr. and Gray var. cuneifolia

Draba cuneifolia var. foliosa Mohlenbrock and Voight, D. cuneifolia var. helleri (Small) O.E. Schultz, D. cuneifolia var. leiocarpa O.E. Schulz, D. cuneifolia var. typica C.L. Hitchc.

Whitlow grass


Exsicc.: CHIR [Fish 42, Reeves 2299, 2587, 2650]. FOBO [MHoy 339]. SWRS [Mouat s.n.].

Draba helleriana Greene var. bifurcata C.L. Hitchc.


Type collected in the Chiricahua Mts. by J.C. Blumer. Exsicc.: ARIZ [Blumer U.R.6, 1608, Barr 60-186].

Draba helleriana Greene var. blumeri C.L. Hitchc.


Type collected in the Chiricahua Mts. by J.C. Blumer. Exsicc.: CHWA [Leithliter 803, 834]. ARIZ [Blumer 1465].

Draba petrophila Greene var. petrophila


Exsicc.: SWRS [SWRS 1960-432]. CHWA [Leithliter 141].

Draba standleyi J.F. Macbr. and Payson


Chiricahua Mts.: Wilderness Area; Greenhouse Canyon; Rustler Park; on Suicide Rock, just west of Bootlegger Trail 0.5 mi. south of Barfoot Peak Lookout, Rucker Canyon; Fort Bowie Nat. Historic Site in Apache Pass; Centella Point. Western Texas to southeastern Arizona. Madrean.


Dryopetalon runcinatum Gray


Exsicc.: CHIR [Clark 8920, Reeves 2517, 3603]. SWRS.

Erysimum capitatum (Dougl. ex Hook.) Greene var. capitatum

Erysimum amoenum (Greene) Rydb., E. angustatum Rydb., E. arkananum Nutt., E. asperum var. amoenum (Greene) Reveal, E. asperum var. angustatum (Rydb.) Boivin, E. asperum var. arkananum (Nutt.) Gray, E. asperum var. capitatum (Dougl.) ex Hook.) Boivin, E. capitatum var. amoenum (Greene) R.J. Davis, E. capitatum var. stellatum (J.T. Howell) Twisselmann, E. capitatum var. washoense G. Rossb., E. elatum Nutt., E. moniliforme Eastw., E. nivale (Greene) Rydb., E. wheeleri Rothrock Western-wallflower
Lepidium lasiocarpum Nutt. var. lasiocarpum

Pepper-grass

Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Pickett Canyon; upper East Whittetl Canyon; above Ruster Park; along road between Ruster Park and Long Park; Wilderness Area. Also Huachuca Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Sierra de los Ajos. Throughout Arizona except the western extreme portion. Saskatchewan to Washington, south to New Mexico, Arizona, and California; Sonora, Mexico. Western.

Exsiccat.: CHIR [Clark 8313, Reeves 3788, 4438], SWRS [SWRS 1959-418, Wittmann 28]. CHWA [Leithhiler 147, 173, 508, 516].

Lepidium lasiocarpum var. georginum (Rydb.) C.L. Hitchc., L. lasiocarpum C.L. Hitchc.

Winter-annual forb, semirosene therophyte. Uncommon on woodland and grassland slopes of all exposures on well-drained sandy soil. Chilopsis, Ephedra.

Chiricahua Mts.: Chiricahua Nat. Mon. 1 mi. west of mouth of little Pickett Canyon; FOBO in wash west of trailer, Overlook ridge; Onion Saddle; Portal. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts. Almost throughout Arizona. Southwestern Colorado to Arizona and California, southward into Mexico. Southwest.

Exsiccat.: CHIR [Reeves 2545, 3549]. FOBO [MHoy 79]. SWRS [Amadon s.n., Roth s.n., MHoy s.n.].

Lepidium thurberi Woot.

Pepper-grass


Lepidium virginicum L. var. medium (Greene) C.L. Hitchc.

Lepidium idahoense Heller, L. medium Greene

Winter-annual forb, semirosene therophyte. Common in openings on gravelly slopes, along draininges, waste ground.

Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts. Apache County to Coconino County, south to Cochise and Pima counties. Arizona, California. Western.

Exsiccat.: FOBO [MHoy s.n.].

Lesquerella fendleri (Gray) S. Wats.

Lesquerella foliacea Greene, L. praecox Woot. and Standl.

Bladder pod

Lesquerella gordonii (Gray) S. Wats.

Bladder pod

Lesquerella purpurata (Gray) S. Wats

Lesquerella purpurea ssp. foliosa (Rollins) Rollins and Shaw

Pennellia folifolia (Benth.) Rollins

Streptanthus longifolius Benth., Thelypodium longifolium (Benth.) S. Wats.

5,000 ft. - 8,708 ft. [5,000] 5,300 ft. Jul - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemicryptophyte. Uncommon in grassland, wooded canyons and chaparral; often on disturbed sites and old burns, cool moist slopes, dry pine forests. Pinus arizonica, Pseudotsuga menziesii, Abies concolor.

Chiricahua Mts.: Chiricahua Nat. Mon. in northwest corner of monument; along road from Ruster Park to Barfoot Park; Apache Pass Road; Centella Point. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleño Mts., Animas Mts. Apache County to Coconino County, south to Cochise and Pima counties. New Mexico, Arizona, and Mexico. Madrean.

Exsiccat.: CHIR [Reeves 3965, 4134, 4206, 4399, 4310]. SWRS [Wittmann 181]. FOBO [MHoy 485].

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Pennellia micrantha (Gray) Nieuwl.  


**Chiricahua Mts.:** Chiricahua Nat. Mon. in Ironwood Canyon; Rock Canyon, Barfoot Park; along road between Barfoot Park and Rustler Park; Chiricahua Nat. Mon. on trail from site in upper Pine Canyon; also Arizona State University, campus. Also Rincon Mts., Santa Catalina Mts., Mule Mts., Animas Mts., Canelo Hills, Santa Cruz Mts., Fort Bowie Nat. Historic Site. Also along road between Cochise and Pima counties.  

*Exsicc*: CHIR [Clark 9026, Reeves 2864]. SWRS [Walker s.n.]. ARIZ [Blumer 1492, Shreve 6358, Tocilin 88].  

**Rorippa nasturtium-aquaticum** (L.) Hayek  
*Nasturtium officinale* Ait. f., *N. officinale* var. *siifoium* (Reichenb.) W.D.J. Koch, *Sisymbrium nasturtium-aquaticum* L.  

**Water-cress**  

**Chiricahua Mts.:** Chiricahua Nat. Mon. in Boquillas Canyon, Boquillas Canyon, Wash, outlet of Silver Spur Spring; Cave Creek; 4 mi. south of Paradise; upper Pine Canyon; Swisshelm Mts. in Leslie Canyon. Also Sierra Ancha, Canelo Hills, Santa Catalina Mts., Huachuca Mts., Galistro Mts., Sierra de los Ajos. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Sonora, Mexico. Alien species naturalized from Europe. Temperate, Introduced.  

Cultivated for salad greens.  

**Exsicc**: CHIR [Clark 9026, Reeves 2864]. SWRS [Walker s.n.]. ARIZ [Blumer 1492, Shreve 6358, Tocilin 88].  

**Schoenocrambe linearifolia** (Gray) Rollins  
*Hesperianthus linearifolius* (Gray) Ryd., *Sisymbrium linearifolium* (Gray) Payson, *Thelyposiopsis linearifolia* (Gray) Al-Shehbaz  


**Chiricahua Mts.:** Fort Bowie Nat. Historic Site in upper South Canyon; Chiricahua Nat. Mon. on north side Garfield Peak; Portal to Paradise road; Tar Creek; Arvin Country. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleño Mts., Mule Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Apache, Navajo and Coconino counties, south to Cochise, Santa Cruz, and Pima counties. Colorado to Arizona and northern Mexico. Rocky Mountain.  

**Exsicc**: FOBO [MHoy 255]. CHIR [Clark 8264, Reed s.n., Reeves 1236, 1259, 1576, 2799, 3694]. SWRS [SWRS 1959-818]. CHWA [Leichtliher 162, 381, 441].  

**Sisymbrium irio L.**  
*Norta irio* (L.) Britt.  

London rocket  


**Chiricahua Mts.:** Chiricahua Nat. Mon. in campgrounds and headquarters area; Fort Bowie Nat. Historic Site in wash east of trailer; Kesting Canyon. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts. Western Coconino and Mohave counties to Cochise, Santa Cruz, Pima, and Yuma counties. Alien species. Introduced from Europe. Introduced.  

**Exsicc**: CHIR [Reeves 1930]. SWRS [Ordway s.n.].  

**Streptanthella longirostris** (S. Wats.) Ryd., *S. arizonicus* var. *derelicta* J.T. Howell  
*Streptanthella longirostris* var. *derelicta* J.T. Howell  

Long-beaked twist flower  

[7,000] ft. [Jan] - [Jun]. Winter annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Sandy soil.  

**Chiricahua Mts.:** Fort Bowie Nat. Historic Site. Apache County to Mohave County, south to western Pima and Yuma counties. Wyoming to Oregon, New Mexico, Arizona, and California. Western.  

**Exsicc**: FOBO [MHoy s.n.].  

**Streptanthus carinatus** C. Wright ex Gray ssp. *arizonicus* (S. Wats.) Kruckeberg, Rodman and Worthington  
*Streptanthus arizonicus* var. *lutes* Kearney and Peebles  


**Chiricahua Mts.:** Fort Bowie Nat. Historic Site in wash east of trailer; Portal. Also Rincon Mts., Santa Catalina Mts.  

Greenlee County to Yavapai County, south to Cochise and Pima counties. Arizona and Chihuahua. Apachean.  

**Exsicc**: SWRS [Kraft s.n.]. FOBO [MHoy 90].  

**Thelypodium wrightii** Gray spp. *wrightii*  
*Stanleyella wrightii* (Gray) Ryd.  


**Chiricahua Mts.:** Chiricahua Nat. Mon. in Bonita Canyon; north side Sugarloaf Mtn.; Fort Bowie Nat. Historic Site in South Canyon; Wilderness Area, Greenhouse Trail. Also Sierra Ancha, Navajo, Coconino, and Mohave counties to Greenlee, Cochise, Gila, Pinal, and Pima counties. Colorado, Utah, New Mexico, and Arizona. Southwestern.  

**Exsicc**: CHIR [Clark 8281, 8698, Reeves 3568, 3718, 3746, 3856, 3969]. SWRS [Walker s.n.]. FOBO [MHoy 447].  

**CHWA [Leichtliher 167, 415, 606].**  

**Thlaspi montanum** L. var. *fendleri* (Gray) P. Holmgren  

Wild candytuft, pennycress, wild sweet alyssum  

[4,000] 5,200 - 6,100 [12,000] ft. [Feb] Mar - Apr [Aug]. Perennial deciduous forb, semiserote hemicryptophyte. Common on cool wooded slopes and canyons, mostly in ...
Coniferous forests.

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Park; north-facing slopes east of Newton Canyon; South Fork Cave Creek trail. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Huachuca Mts., Santa Rita Mts., Sierra de los Ajos. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Colorado, Utah, New Mexico, and Arizona. Rocky Mountain.

Exsicc.: CHIR [Fish 34, Reeves 2359, 2429, 2629]. SWRS [SWRS 959-789].

Thysanocarpus curvipes Hook.


Lacepod, fringe pod


Exsicc.: CHIR [Reeves 2410]. SWRS [Walker s.n.].

CACTACEAE—Cactus Family.

A family of fleshy, herbaceous, or woody plants, stems simple or caespitose, many forms branched and tree-like, stems with leaf-like leaves in two tropical genera. Many species are armed with spines or glochids. There are 100 to 150 genera with 1,200 to 1,800 species. About 37 genera are found in all states of the United States except Maine, New Hampshire, and Vermont. The family is largely confined to the New World.

Echinocereus coccineus Engelm. var. arizonicus (Rose ex Orcutt) Ferguson

Echinocereus polyacanthus Engelm. var. neomexicanus auct. non (Standl.) L. Benson E. triglochidiatus Engelm. var. arizonicus (Rose ex Orcutt) L. Benson, E. triglochidiatus var. neomexicanus auct. non (Standl.) W.T. Marsh

Hedgehog

[4,000] 5,800 - 9,100 ft. May - Jul. Stem-succulent shrub, low stem-succulent chamaephyte. Uncommon in xeric forest openings at high elevations; rocky slopes in encinal and desert grassland; rocky canyons at lower elevations.


Exsicc.: CHIR [Clark 8234, Reeves 2819]. SWRS [Elliott s.n.]. CHWA [Leithliter 44].

Echinocereus fendleri (Engelm.) F. Seitz var. ledingii (Peebles) N.P. Taylor

Echinocereus ledingii Peebles

Hedgehog

[4,000] 5,600 - 6,000 ft. [May] - Jun. Stem-succulent shrub, low stem-succulent chamaephyte. Uncommon on rocky, gravelly, sandy soil; openings in grassland, woodland, or chaparral.


Exsicc.: CHIR [Reeves 2988].

Echinocereus fendleri (Engelm.) F. Seitz var. rectispinus (Peebles) L. Benson

Echinocereus rectispinus Peebles

Hedgehog


Exsicc.: CHIR [Reeves 2772]. FOBO [MHoy 410, 420]. SWRS [Elliott s.n.].

Echinocereus pectinatus (Scheidw.) Engelm. Rainbow cactus

[4,000] - 5,100 [6,000] ft. Mar - Aug. Stem-succulent shrub, low stem-succulent chamaephyte. Common on rocky soil or outcrops in sun or partial shade of scrub or trees.

Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site on hill northeast of Overlook. Also Huachuca Mts.,

Type from Sierra del Pajarito, Sonora.

Exsiccat: CHIR [Clark 8168, Reeves 2376, 2942]. FOBO [MHoy 400].

**Escobaria orcuttii** Bödeker


5,000 ft. Sep. Stem-succulent shrub, low stem-succulent chamaephyte. Leafless. Rare on south-facing slopes on limestone. *Juniperus erythrocarpa, Daussiiion wheeleri, Fouquieria splendens, Acacia greggii, Quercus arizonica, Rhus aromatica.*

Chiricahua Mts.: Silver Creek.

Exsicco: ASU [McGill 5643].

**Escobaria tuberculosa** (Engelm.) Britt. and Rose


Chiricahua Mts.: Keating Canyon below entrance to Bucklew Cave. Also Peloncillo Mts. Coconino County. Southern and Central New Mexico; Texas west of the Pecos. Chihuahua, Mexico. Chihuahuan.

**Escobaria vivipara** (Nutt.) Buxbaum var. *arizonica* (Engelm.) D.R. Hunt


**Escobaria vivipara** (Nutt.) Buxbaum var. *bisbeeana* (Orcutt) D.R. Hunt

*Coryphantha bisbeeana* Orcutt., *C. vivipara* var. *bisbeeana* (Orcutt) L. Benson

Pincushion cactus


Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site along Butterfield Stage Road; West Turkey Creek; Southwestern Research Station on hillside north of station; Wilderness Area. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Animas Mts. Southeastern quarter of Arizona. New Mexico and Arizona. Apachean.

Exsiccat: CHIR [Clark 8170, Reeves 2375]. FOBO [MHoy 422]. SWRS [Elliott s.n.]. CHWA [Leithliter 633].

**Ferocactus wislizeni** (Engelm.) Britt. and Rose

Echinocactus wislizeni Engelm.

Fishhook barrel cactus


Fruits eaten by deer and rodents.

Exsicco: FOBO [MHoy 357]. SWRS [Elliott s.n.].

**Mammillaria grahamii** Engelm var. *grahamii* *Mammillaria microcarpa* Engelm., *M. microcarpa* var. *auricarpa* W.T. Marsh., *M. milleri* (Britt. and Rose) Bödeker Fishhook cactus


Exsicco: FOBO [MHoy 423]

**Mammillaria grahamii** var. *olivae* (Orcutt) L. Benson

*Mammillaria olivae* Orcutt

[Mammillaria olivae] 4,400 ft. 5,000. Stem-succulent shrub, low stem-succulent chamaephyte. Rare on well-drained slopes.


**Mammillaria heyderi** Muehlenpfordt var. *macdougalii* L. Benson

*Mammillaria gummifera* Engelm. *pro parte, M. macdougalii* (Rose) L. Benson


Chiricahua Mts.: Fort Bowie Nat. Historic Site on hill east of trailer; Portal to Paradise road. Also Huachuca Mts., Rincon...
Mammillaria wrightii Engelm. var. wilcoxii (Toumey ex K. Schum.) W.T. Marsh.
*Mammillaria meridiorosei* Pierce and Schwerin ex K. Schum., *Mammillaria wilcoxii* Toumey


*Chiricahua* Ms.: Southwestern Research Station at base of Rattlesnake Hill. Also Huachuca Ms., Santa Catalina Ms., Animas Ms. Mohave, Pinal, Graham, Cochise, and Santa Cruz counties. Southern New Mexico and western Texas. Chihuahuan, Apachean.


Opuntia chlorotica Engelm. and Bigelow
Pancake-pear, silver-dollar cactus


*Chiricahua* Ms.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site at Overlook; Onion Saddle Road 5 mi. above Southwestern Research Station. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Male Ms., Animas Ms. Arizona from Mohave County to the lower parts of northern Coconino County and southeastward below the Mogollon Escarpment to Graham, Pima, and Cochise counties. California in the southern and eastern Mohave Desert and the western edge of the Sonora Desert. Southern Nevada in the Charleston Mountains of Clark County. Southwestern New Mexico. Baja California and Sonora. Mohavian, Sonoran, Chihuahuan.

Benson (1969) states that "Plants intermediate between this variety [ennu lato] and *Opuntia violacea* and possibly var. *santa-risa* occur in Perilla, Swisshelm, and Huachuca mountains and east of the Mule Mountains in southeastern Arizona.," p. 106.

Exsic: [CHIR [Clark 8164, Reeves 2947, 3208]. SWRS [Mittleleitler s.n.]. FOBO [MHoy 419].

Opuntia engelmannii Salm-Dyck var. engelmannii
Engelmann prickly-pear


*Chiricahua* Ms.: Chiricahua Nat. Mon.; Portal to Paradise road; 2 mi. northwest of Portal on limestone hill east of Silver Peak; Fort Bowie Nat. Historic Site in wash east of trailer;

Wilderness Area. Also Huachuca Ms., Rincon Ms., Sinaloa Ms., Sierra Ancha, Male Ms., Animas Ms. From Mohave County eastward through northern Arizona and more commonly below the Mogollon Rim to Greenlee County and southward to the Baboquivari Mountains in Pima County and to Cochise County. California east of the San Bernardino, San Jacinto, and Laguna mountains and in the eastern Mohave Desert. Reported from Nevada in Clark County, Utah in Washington County, New Mexico from Grand and Hidalgo counties to Lincoln and Otero counties and in Bernalillo County, Texas west of the Pecos River and eastward hills east of the Edwards Plateau. Mexico in Sonora, Chihuahua and Coahuila. Sonoran, Mohavian, Chihuahuan.

The variety intergrades with *O. p. major*.


Opuntia leptocaulis DC.
Desert Christmas cactus


*Chiricahua* Ms.: near Paradise cut-off road along Portal to San Simon road; Fort Bowie Nat. Historic Site in wash east of trailer. Also Santa Catalina Ms., Male Ms. Texas, New Mexico, Arizona, and Mexico. Chihuahuan.

Exsic: [SWRS [SWRS 1959-524]. FOBO [MHoy 414].

Opuntia macrorhiza Engelm. var. macrorhiza
Prickly-pear


*Chiricahua* Ms.: Chiricahua Nat. Mon. at Bonita Park. Also Huachuca Ms., Sierra Ancha, Male Ms., Animas Ms. Arizona from Apache to Mohave County, southward to Yavapai, Gila, eastern Pima, Santa Cruz, and Cochise counties. California on Clark Mountain (San Bernardino County). Utah (rare) eastward to the Great Plains, from Wyoming and southwestern South Dakota to Nebraska, western Missouri, western Arkansas, middle and southern Texas, Minnesota, Wisconsin, Michigan, Iowa, Illinois, Ohio, Louisiana. Rare in the Midwest. Western.

Benson (1969) reports that in Arizona, New Mexico, and Texas this species intergrades into *Opuntia phaeacantha*.

Eastward it intergrades with *Opuntia compressa*.

Exsic: [CHIR [Clark 8166, Reeves 3013, 3014].

Opuntia phaeacantha Engelm. var. major
Engelm.
Prickly-pear
Opuntia macrocentra Engelm. var. macrocentra Engelm.

Opuntia violacea Engelm., O. violacea var. castetteri L. Benson. O. violacea var. macrocentra (Engelm.) L. Benson


Opuntia santa-rita (Griffiths and Hare) Rose

Opuntia chlorotica Engelm. and Bigelow var. santa-rita Griffiths and Hare, O. violacea Engelm var. santa-rita (Griffiths and Hare) L. Benson


Opuntia spinosior (Engelm.) Tomney

Opunta whipplei Engelm. and Bigelow var. spinosior Engelm.

Cane cholla


Opuntia tetracantha Tourney

Opuntia californica Engelm., O. kleiniae DC. var. tetracantha (Tourney) W.T. Marsh.


Opuntia macrocentra Engelm. var. macrocentra Engelm.

Opuntia violacea Engelm., O. violacea var. castetteri L. Benson. O. violacea var. macrocentra (Engelm.) L. Benson


Opuntia santa-rita (Griffiths and Hare) Rose

Opuntia chlorotica Engelm. and Bigelow var. santa-rita Griffiths and Hare, O. violacea Engelm var. santa-rita (Griffiths and Hare) L. Benson


Opuntia spinosior (Engelm.) Tomney

Opunta whipplei Engelm. and Bigelow var. spinosior Engelm.

Cane cholla


Opuntia tetracantha Tourney

Opuntia californica Engelm., O. kleiniae DC. var. tetracantha (Tourney) W.T. Marsh.

Lobelia fenestralis Cav.
5,000 - 6,000 ft. Aug. - Nov. Summer annual. Meadows.

Triodanis holzingeri McVaugh
Specularia holzingeri (McVaugh) Fern.
Chiricahua Mts.: Onion Creek; Horseshoe Canyon. Also Rincon Mts. Graham, Cochise, and Pima counties. Western Missouri to southeastern Wyoming, south to southern Texas; Tennessee; southeastern Arizona. Plains.
Exsic: SWRS [Roth s.n.].

Triodanis perfoliata (L.) Nieuwl. var. biflora
(Ruiz and Pavon) Bradley
Specularia biflora (Ruiz and Pavon) Fisch. and C.A. Mey., Triodanis biflora (Ruiz and Pavón) Greene
Venus looking glass
Exsic: ARIZ [McCormick 195].

Triodanis perfoliata (L.) Nieuwl. var. perfoliata
Legousia perfoliata (L.) Brit., Specularia perfoliata (L.) A. DC.
Venus looking glass
Chiricahua Mts.: Fort Bowie Nat. Historic Site; near Portal Ranger Station. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Animas Mts. Greenlee County to Cochonino County and south. Southern Ontario to southern British Columbia, south to Florida, Texas, and southwest of the Rockies to northern California, Arizona, and northern Mexico; southern Mexico; West Indies; locally in northern South America. Latin American.
Exsic: SWRS [Mout s.n.].

Humulus lupulus L. var. lupuloides E. Small
Humulus americanus Nutt., H. lupulus L. ssp. americanus (Nutt.) A. and D. Löve
Wild hop
Rare cases of dermatitis from contact with the plant have been reported.
Exsic: SWRS [Roth s.n.].

CAPPARACEAE—Caper Family.
A family of herbs, shrubs, or trees, sometimes lianous. Composed of 46 genera and about 700 species distributed in the tropics of both hemispheres.

Polanisia dodecandra (L.) DC. ssp. trachysperma (Torr. and Gray) Ilits
Polanisia dodecandra var. trachysperma Torr. and Gray, P. trachysperma (Torr. and Gray) Ilits
Clammy-weed
[1,000] 4,300 - 5,400 [6,500] ft. [May] - [Aug]. Summer-annual forb, scapose or leafy-stemmed therophyte. Uncommon on gravelly flats and along sandy desert washes, on disturbed ground and roadsides.
Exsic: CHIR [Reeves 3922]. SWRS [Walker s.n., SWRS 1958-239].

Wislizenia refracta Engelm.
Jackass-clover
Chiricahua Mts.: Chiricahua Nat. Mon. Navajo, Coconino, and Mohave counties, south to Graham, Cochise, and Pima counties, reported from Greenlee County. Western Texas to southern California and Sonora, Mexico. Southwestern, Californian.
Exsic: CHIR [Reeves 3924].

CAPRIFOLIACEAE—Honeysuckle Family.
A family of shrubs, sometimes lianous, rarely herbaceous, or suffuytaceous. About 18 genera and 275 species, primarily of the northern hemisphere, especially eastern Asia and eastern North America. Primarily of economic importance as ornamentals; elderberry is fermented as wine.

CANNABACEAE
A family of shrubs or twining herbs, closely related to the Moraceae, but lacking milky latex. Two genera and 3 species, mostly of tropical distribution. The family is of considerable economic importance: Cannabis for its the fibers of hemp used for cordage and for marijuana is obtained from the staminate flowers; and Humulus grown for the fruits used in flavoring beer.
Lonicera albiflora Torr. and Gray
Lonicera albiflora Torr. and Gray var. dumosa
(Gray) Rehd., L. dumosa Gray
Honeysuckle


Chiricahua Mts.: Chiricahua Nat. Mon. in Picket Park; Galeyville spring; Jhua Canyon bottom; Wilderness Area; Salisbury Trail. Also Hauchu Mts., Mule Mts., Animas Mts. Southern Apache County and Gila County to Cochise and Santa Cruz counties. Arkansas to southern Arizona and northern Mexico. Southwestern.

Exsicc: CHIR [Clark 8097, LaMay 1, Reeves 2789, 3395, 3946]. SWRS [Walker s.n., SWRS 1959-111]. CHWA [Leithliter 788].

Lonicera arizonica Rehd.
Arizona honeysuckle


Chiricahua Mts.: Rustler Park - Long Park Road; Wilderness Area; Centella Point; Crest Trail north of Monte Vista Peak. Also Rincon Mts., Finalesio Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts. Apache County, Coconino County (both sides of the Grand Canyon), and Cochise and Pima counties. Utah, New Mexico, and Arizona. Sonora, Mexico. Southwestern.

Exsicc: CHWA [Leithliter 89].

Lonicera involucrata Banks ex Spreng.
*Distegia involucrata* (Banks ex Spreng.) Cockerell, *Lonicera involucrata var. flavescens* (Dippel) Rehd., *Xylosteum involucratum* (Banks ex Spreng.) Richards Bearberry honeysuckle, ink-berry, pigeon-bush, twin-berry


The flowers attract hummingbirds.

Lonicera japonica Thunb.
Japanese honeysuckle

May - Sep. Broadleaf deciduous shrub, climbing phanerophyte; microphyll, orthophyll. Raderal.


Exsicc: CHIR [Reeves 3473].

Lonicera utahensis S. Wats.


Chiricahua Mts.: along Crest Trail east of Monte Vista Lookout. Apache and Greenlee counties. Montana to British Columbia, south to New Mexico, Arizona, and northern California. Western.

Exsicc: SWRS [Walker s.n.].

Sambucus cerulea Raf. var. neomexicana (Woot.) Rehd.
*Sambucus neomexicana* Woot., *S. neomexicana* var. *vestita* (Woot. and Standl.) Kearney and Peebles

[5,000] 9,600 ft. Jun - Aug. Broadleaf deciduous shrub, nanophanerophyte; mesophyll, orthophyll. Rare on poorly-drained soil, dry uplands, along streams.


Symphoricarpos oreophilus Gray var. oreophilus
*Symphoricarpos rotundifolius* Gray var. *oreophilus* (Gray) M.E. Jones
Snowberry

[5,900] 7,400 [9,800] ft. May - Aug. Broadleaf deciduous shrub, nanophanerophyte; microphyll, orthophyll. Common on cool, moist slopes, often in the open at higher elevations; mesic forested slopes at middle elevations; usually along streams at lower elevations.

Chiricahua Mts.: Chiricahua Nat. Mon. in Totem Canyon; Greenhouse Trail; just below Onion Saddle; Centella Point. Also Rincon Mts., Finalesio Mts., Sierra Ancha, Santa Catalina Mts. Apache, Navajo, Coconino counties, south to the mountains of Cochise and Pima counties. Colorado and western Texas to eastern Nevada, Arizona, and northern Sonora. Rocky Mountain, Mogollon.


Symphoricarpos palmeri G.N. Jones
Snowberry


Exsicc: CHIR [Clark 8923, Reeves 2981, 3767].

CARYOPHYLLACEAE—Pink Family.

A family of annual or perennial herbs, infrequently suffrutescent shrubs; stems characterized with swollen nodes. About 80 genera and 2,100 species, primarily of the north temperate regions but with a few genera of the south temperate regions and higher altitudes of mountains in the tropics. The Mediterranean area is the principal center of distribution for the family. In the United States, about 13 genera are represented by indigenous species, and 9 others by species that are widely naturalized or adventive (often as noxious weeds).
Arenaria fendleri Gray


Chiricahua Mts.: Barfoot Lookout; top of Cochise Head. Also Huachuca Mts. Apache to Mohave County, Cochise County. Wyoming and Utah to western Texas and Arizona. Rocky Mountain.

Exsic: SWRS [Pough 1961-32, Roth s.n.].

Arenaria lanuginosa (Michx.) Rohrb. ssp. lanuginosa var. longipedunculata Duncan


Exsic: CHWA [Leithliter 128].

Arenaria lanuginosa (Michx.) Rohrb. ssp. saxosa (Gray) Maguire

Arenaria confusa Rydb., A. lanuginosa var. cinerascens (B.L. Robins.) Shinners, Arenaria saxosa Gray, A. saxosa var. cinerascens B.L. Robins., A. saxosa var. meanstii (Woot. and Standl.) Kearney and Peebles, Spergulastrum lanuginosum Michx. ssp. saxosum (Gray) W.A. Weber, Sandwort


Exsic: CHIR [Clark 8186, 8965, 9197, Reed 213, Reeves 986, 1320, 1364, 1461, 1515, 3792, 4287]. SWRS [Roth s.n.]. CHWA [Leithliter 30, 92, 189, 476, 483, 544, 731].

Cerastium brachypodium (Engelm. ex Gray) B.L. Robins.

Cerastium brachypodium var. compactum B.L. Robins., C. nutans Raf. var. brachypodium Engelm. ex Gray

Mouse-ear chickweed


Exsic: SWRS [Luteke s.n.]. CHWA [Leithliter 56, 152, 193, 780; SWRS 1959-422]. CHWA [Leithliter 296].

Cerastium nutans Raf. var. obtectum Kearney and Peebles

Cerastium sericeum S. Wats.

Mouse-ear chickweed


Exsic: CHWA [Leithliter 56, 152, 193, 780].

Cerastium sordidum B.L. Robins.

Mouse-ear chickweed


Chiricahua Mts.: Rustler Park; Wilderness Area; Saulsbury Trail; Centella Point. Also Pinaleño Mts., Santa Rita Mts. Santa Cruz County, Cochise County. Southwestern Arizona and Chihuahua. Chihuahuan.

Exsic: SWRS [Roth s.n.]. CHWA [806].

Cerastium texanum Britt.

Mouse-ear chickweed


Exsic: CHIR [Fish 41, Reeves 2417, 2508, 2618, 2634]. SWRS [Mouat s.n.]. CHWA [Leithliter 8, 541].

Drymaria effusa Gray var. depressa (Greene) J. Duke

Drymaria depressa Greene


Chiricahua Mts.: Wilderness Area, along Crest Trail; Centella Point. Also Pinaleño Mts. Apache and Greenlee counties, to Graham County and Cochise County. New Mexico and eastern Arizona. Madrean, Apachian.

Exsic: CHWA [Leithliter 305].
Drymaria glandulosa K. Presl.
*Drymaria fendleri* S. Wats.
Sand spurry


Exsicc: CHIR [Moir 444, 456, Reeves 1831]. SWRS [Walker s.n.]

Drymaria leptophylla (Cham. and Schlecht.) Frenzl ex Rohrb.
*Drymaria tenella* Gray
Sand-spurry
5,400 - 7,000 [8,000] ft. Aug - Sep. Summer annual, scapose or leafy-stemmed therophyte; leptophyll, orthophyll. Common on rocky canyon slopes and gravelly openings in woods, sometimes on disturbed ground.


Exsicc: CHIR [Clark 8600, Reeves 1475, 1873A, 4534].

Drymaria molluginea (Lag.) Didr.
*Drymaria sperguloides* Gray
Sand spurry

Chiricahua Mts.: Chiricahua Nat. Mon. in Pickett Park; Southwestern Research Station; Onion Saddle. Also Huachuca Mts., Rincon Mts. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Madrean.

Exsicc: CHIR [Clark 8601, Keil and McGill 8531, Moir 492, 508, 563, Reeves 1228, 1275, 1477, 1595, 1627]. SWRS [Ordway 119].

Paronychia jamesii Torr. and Gray

Nailwort

Chiricahua Mts. Also Animas Mts. Coconino County and Cochise County, Nebraska and Wyoming to Oklahoma, Texas, New Mexico, Arizona, and northern Mexico. Southwestern.

Silene antirrhina L.

Silene laciniata Cav. ssp. greggii (Gray) C.L. Hitchc. and Maguire
*Silene laciniata* var. *greggii* (Gray) S. Wats.
Mexican campion, Mexican catchfly


Exsicc: CHIR [Clark 8523, 8703, Reeves 1445, 1754, 1762]. SWRS [s.c., s.n.]. CHWA [Leithliter 160, 304, 576, 782].

Silene scouleri Hook. ssp. *pringlei* (S. Wats.) C.L. Hitchc. and Maguire
*Silene scouleri* var. *pringlei* (S. Wats.) CHWA [48, 342].

Silene thurberi S. Wats.
5,000 - 6,000 ft. Perennial deciduous forb, rhizome geophyte; microphyll, orthophyll. Common on rocky outcrops, dry meadows, forest.


Stellaria longipes Goldie
*Stellaria longipes* Goldie
Starwort
8,530 - 9,790 ft. May - Jul. Perennial deciduous forb, rosette proto-chamaephyte; nanophyll, orthophyll. Uncommon on rocky outcrops, dry meadows, forest.

Chiricahua Mts.: Fly Peak; west of Tub Spring. Also Apache County and Cochise County. Greenland to Alaska, south to New Mexico, Arizona, and California; northern Asia. Holartic.

CELASTRACEAE—Bittersweet Family.
A family of trees, shrubs, or vines. About 45 genera and about 500 species, widely distributed except in the arctic, and represented in this country by 10 genera and about 20 species.

Mortonia sempervirens Gray ssp. scabrella (Gray) Prigge
Mortonia scabrella Gray


Paxistima myrsinoides (Pursh) Raf.
Myrtle box-leaf, mountain-lover, Oregon-boxwood

Myrtle box-leaf, mountain-lover, Oregon-boxwood.


Chiricahua Mts.: Chiricahua Nat. Mon. Also Pinaleno Mts., Sierra Ancha. Apache County to Cochise County, south to Cochise and Gila counties. Canada to New Mexico, Arizona, and California. Western.

Ornamental since 1879. Eaten by deer, mountain sheep, and grouse. Occasionally browsed by livestock.

Exsic: CHIR [Clark 8193, Reeves 1841, 2803, 3628].

CHENOPODIACEAE—Goosefoot Family.
A family of predominantly halophytic annual or perennial herbs, shrubs, or rarely small trees. About 102 genera and 1,400 species, of world-wide distribution but with centers of distribution in xerophytic and halophytic areas especially in the prairies and plains of North America, the pampas of South America, the shores of the Red, Caspian and Mediterranean seas, the central Asiatic basin, the South African karoo, and the plains of Australia. About 18 genera are represented in the western United States.

Atriplex canescens (Pursh) Nutt.
Wingscale, cenizo, chamiso


Cattle forage and browse. Useful for erosion control.

Exsic: FOBO [Mhoy 225]. SWRS [SWRS 1958-842, Cummins s.n.].

Atriplex elegans (Moq.) D. Dietr. var. elegans
Wheelscale salt-bush, orache


Chenopodium album L.
Lambs-quarters

4,890 - 5,400 ft. Aug. Summer-annual forb, scapose or leafy-stemmed therophyll; nanophyll, orthophyll. Uncommon on open southerly-facing slopes, disturbed soil, cultivated or waste land.

Chiricahua Mts.: Chiricahua Nat. Mon. in residential area; West Turkey Creek at junction of road with Highway 181. Also Santa Catalina Mts., Animas Mts, Pinal, Yavapai, Conconino, Apache, Cochise counties. Naturalized throughout North America. Introduced.


Chenopodium fremontii S. Wats. fremontii
Nettle-leaf goosefoot

(2,500) 5,050 - 7,800 [9,000] ft. Jun - Aug [Sep]. Summer-annual forb, scapose or leafy-stemmed therophyte. Uncommon on gravelly slopes of all exposures, becoming confined to canyons, washes and rills at lower elevations; often on disturbed soil. Quercus emoryi. Q. arizonica.


Exsic: CHIR [Clark 8366, Reeves 1768, 4096]. FOBO [Mhoy 223].

Chenopodium graveolens Willd.
Chenopodium graveolens var. neomexicanum (Aellen) Aellen, C. incisum Poir., C. incisum var. neomexicanum Aellen, Teloxys graveolens (Willd.) W.A. Weber

Goose-foot


Chiricahua Mts.: Chiricahua Nat. Mon.; Rustler Park; Paradise Ranch; Wilderness Area, Saulsbury Canyon Trail; Centella Point; West Turkey Creek; Barfoot Park. Also Huachuca Mts., Rincon Mts., Animas Mts., Santa Rita Mts., Canelo Hills, Whitsone Mts., Baboquivari Mts., Santa Catalina Mts., Pinaleno Mts., Sierra Ancha, Patagonia Mts., Sierra de los Ajos. Apache, Navajo, and Coconino counties, south to Cochise, Santa Cruz, and Pima counties. Western Texas and Colorado to Arizona, southward to Central America; South America. Southwestern, Latin American.

Exsic: CHIR [Clark 8603, Reeves 1372, 1624, 1660]. SWRS [Ordway 107, Walker s.n.]. CHWA [791]. ARIZ [Blumcr s.n., 1381, 144, Spaulding 75-10-25, Barr 66-179].
Chenopodium leptophyllum (Moq.) Nutt. ex S. Wats.

Chenopodium album L. var. leptophyllum Moq., C. pratericola Rydb., Chenopodium inamoenum Standl. Slimleaf goosefoot


Crawford (1977).

Exsicc: CHIR [Reeves 4046]. FOBO [MHoy 40]. SWRS [Roth s.n.].

Chenopodium muralce L.

Nettleleaf goosefoot


Crawford (1973).

Exsicc: ARIZ [Blumer 1409; Gould and Haskell 4606 Adams].

Chenopodium pratericola Rydb.

Chenopodium desiccatum A. Nels. var. leptophyllloides (J. Murr.) H.A. Wahl, C. pratericola ssp. euratericola, C. pratericola var. leptophyllloides (J. Murr.) Aellen

Chuaris

[1,500] - 8,250 ft. [May] Jul - [Sep]. Summer-annual forb, scapose or leafy-stemmed therophylly; nanophyll, orthophyll. Probably uncommon on disturbed open ground.


Exsicc: ARIZ [Blumer s.n. (2 ea.)].

Chenopodium watsonii A. Nels.

Chenopodium glabrescens (Aellen) H.A. Wahl, C. oldum S. Wats., non W. Curtis


Chiricahua Ms.: Fort Bowie Nat. Historic Site at road gate. Also Santa Catulina Ms., Animas Ms. Navajo County to eastern Mohave County, south to Greenlee and Santa Cruz counties. South Dakota and Montana to New Mexico and Arizona. Western.

Exsicc: FOBO [MHoy 456].

Krascheninnikovia lanata (Pursh)

Guldenstaedt

Ceratoides lanata (Pursh) J.T. Howell, C. lanata var. ruinita Welsh, C. lanata var. subspinosa (Rydby.) J.T. Howell, Eurotia lanata (Pursh) Moq., E. lanata var. subspinosa (Rydby.) Kearny and Peebles

Winter fat


Chiricahua Ms.: Fort Bowie Nat. Historic Site on north side of Overlook; Portal; Paradise, in Cedar Gulch; Maxon’s Peak; near Portal; Swisshelm Ms. in Leslie Canyon. Also Santa Rita Ms. Apache County to Mohave County, south to Cochise and Pima counties. Saskatchewan to Washington, south to Texas, Arizona, California, and Mexico. Latin American.

Food for ungulates. Indians used powdered plants for burns and a decoction of the leaves for treating fever. Drought resistant. Has been under cultivation since 1895.


Monolepis nuttalliana (Roem. and J.A. Schultes) Greene

Patata, patota


Chiricahua Ms.: Chiricahua Nat. Mon. Also Animas Ms. Apache County to Mohave County, south to Cochise, Pima, and Yuma counties. Manitoba and Alberta, south to Texas, Sonora, and California. Western.

Spring pasturage for cattle. Indians use it for greens and the seeds for pinole.

Exsicc: CHIR [Reeves 2608].

Salsola kali L.

Salsola iberica Sennen and Pau, Salsola kali L. var. tenuifolia Tausch, S. kali L. ssp. ruthenica (Iljin) Soo

Russian-thistle


Barilla, an impure soda, can be obtained from burning these plants. Introduced in flax seed at Bon Homme County, South Dakota in 1886. Can be crowded out by native vegetation.
**CLUSIACEAE—Garcinia Family.**

A family of trees, shrubs, or herbs (rarely woody lianas) with resinous sap. About 8 genera and 350 species; closely related to the Guttiferae.

**Hypericum scouleri** Hook.

St. John's wort


Chiricahua Mts.: Pine Canyon near Methodist Camp; Wilderness Area. Also Rincon Mts., Pinaleiio Mts., Sierra Ancha, Santa Catalina Mts., Huachuca Mts. Apache County to Coconino County, south to Cochise and Pima counties.

Exsic.: SWRS [SWRS 1959-694]. CHWA [Leithliter 439, 458].

**COMMELINACEAE—Spiderwort Family.**

A family of succulent perennial or annual herbs, acaulescent or with nodose stems, fibrous or sometimes much thickenend and tuberlike roots. Family is tropical and subtropical represented by 37 genera and about 600 species distributed over the warmer parts of the earth. Members of the subfamily Commelinaeae (irregular flowers) are most common in tropical Africa while the Tradescantiae (flowers regular) are most abundant in the New World.

**Commelina dianthifolia** Delile

Dayflower


Chiricahua Mts.: Chiricahua Nat. Mon. north of Silver Spur Meadow, Totem Canyon, Pickett Park; Fort Bowie Nat. Historic Site in Apache Pass, Massacre Site; Southwestern Research Station; between Long Park and Rustler Park; Greenhouse Trail; Portal to Paradise road; West Turkey Creek; Wilderness Area; Barfoot Park; Centella Point. Also Pinaleiio Mts., Sierra Ancha, Santa Catalina Mts., Animals Mts., Huachuca Mts., Sierra de los Ajos. Apache and Coconino Counties, southward to Cochise, Santa Cruz and Pima counties. New Mexico, Arizona and nearly throughout Mexico.

Exsic.: CHIR [Borell 8, Reeves 1503, 4237]. SWRS [Mouat s.n., Wittmann 183, Ordway s.n.]. CHWA [Leithliter 206, 291, 524, 534, 612, 675, 676]. NMC [Blumer 1354. Carter s.n.].

**Commelina erecta** L. var. *angustifolia* (Michx.) Fern.


Exsic.: SWRS [SWRS 1938 600]. ASU [Pinkava, et al. 766; Lehto 4091].

**Tradescantia pinetorum** Greene

*Angelema pinetorum* (Greene) Matuda

Spiderwort


**CONVOLVULACEAE—Morning Glory Family.**

A family of small trees, shrubs and erect or twining herbs. About 30 genera and 1,200 species primarily of the tropics and subtropics, particularly abundant in the Americas and tropical Asia. The sweet potato is a member of this family.

**Convolvulus arvensis** L.

*Convolvulus ambigens* House, *C. incanus* auct. non Vahl, *Strophocaulos arvensis* (L.) Small

Field bindweed


Chiricahua Mts.: Portal Ranger Station; Chiricahua Nat. Mon. in lower Pinney Canyon; Fort Bowie Nat. Historic Site along road east of trailer; Willow Tank. Also Huachuca Mts., Rincon Mts., Mule Mts., Sierra Ancha, Animals Mts., Canelo Hills. Apache County to eastern Mohave County, south to Cochise, Santa Cruz, and Pima counties. Extensively naturalized in North America; from Europe. Temperate, Introduced.

An antihemorragic substance has been discovered in this plant.

Exsic.: SWRS [Roth s.n.].

**Convolvulus equitans** Benth.

*Convolvulus hermannioides* Gray, *C. simulans* Perry


Exsic.: ARIZ [Crooks et al., s.n.].
Dichondra brachypoda Woot. and Standl.

Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Bonita Canyon; Rucker Canyon near San Bernardino. Also Animas Mt., Cochise County. Western Texas to southeastern Arizona and northern Mexico. Chihuahuan.
Exsic.: CHIR [Clark 8533].

Evolvulus arizonicus Gray
Evolvulus arizonicus var. laetus (Gray) van Ooster, E. laetus Gray

Exsic.: SWRS [SWRS 1960-355].

Evolvulus nuttallianus J.A. Schultes
Evolvulus pilosus Nutt.

Exsic.: ARIZ [Garton 16754; A. Hesselberg s.n.].

Evolvulus sericeus Sw. var. sericeus
Evolvulus sericeus var. discolor (Benth.) Gray

Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site at Cemetery; Paradise, cemetery. Also Huachuca Mts., Santa Ancha, Animas Mt., Caneo Hills. Navajo and Yavapai counties to Greenlee, Cochise, Santa Cruz, and Pima counties. Texas to southeastern California, south to Argentina; West Indies. Latin American.
Exsic.: CHIR [Reeves 2760, 4213]. FOBO [MHoy 442].

Ipomoea barbatisepala Gray
Morning glory


Ipomoea capillacea (Kunth) G. Don
Ipomoea muricata Cav. non (L.) Jacq.
Morning glory
5,000 - 6,000 ft. [Jul] Aug - [Sep]. Perennial deciduous forb, bulb geophyte; nanophyll, orthophyll. Uncommon on mountain sides.

Chiricahua Mts.: Chiricahua Nat. Mon. in Upper Pickett Canyon. Also Huachuca Mts., Mule Mts., Cochise and Santa Cruz counties. New Mexico and southern Arizona to northern South America. Latin American.
Exsic.: CHIR [Clark 8679]. ARIZ [Blumer 1643].

Ipomoea costellata Torr.
Morning glory

Exsic.: CHIR [Fish 21, Moir 501, Reeves 1484, 1572A, 1679]. SWRS [Ordway s.n., Walker s.n., Witmann 155].

Ipomoea cristulata Hallier f.
Star-glory

Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon; 6 mi. east of Portal; Paradise.
Exsic.: CHIR [Fish 2, 27, Reeves 1567, 1603, 1612]. SWRS [Ordway s.n.]. ARIZ [Blumer V124, 1808].

Ipomoea hederifolia L.
Ipomoea coccinea L. var. hederifolia (L.) Gray
Star-glory

Chiricahua Mts.: Chiricahua Nat. Mon.; Bonita Canyon, Organ Pipe Formation; Rhyolite Canyon; Fort Bowie Nat. Historic Site in South Canyon; Portal to Paradise road; Wilderness Area. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mt., Pinaleño Mts., Caneo Hills. Navajo and Coconino counties to Greenlee, Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and south into tropical America. Southwestern, Latin American.
Exsic.: CHIR [Reeves 1346, 4364]. FOBO [MHoy 306]. CHWA [Leithliter 683].

Ipomoea plummerae Gray
Ipomoea cuneifolia Gray non Meisn., I. egregia House, I. plummerae var. egregia (House) Soreng and Spellenberg
Morning glory
Pharbitis purpurea (L.) Roth
Convolvulus purpureus L., Ipomoea hirsutula Jacq. f., I. purpurea var. diversifolia (Lindl.) O'Donnell, Pharbitis purpurea (L.) Voigt
Tall morning-glory

Chiricahua Mts.: Chiricahua Nat. Mon. on Sugarloaf Mountain Trail, east of Balanced Rock; Barfoot Park; Wilderness Area. Also Sierra Ancha, Pinaleno Mts., Santa Catalina Mts., Apache County to Coconino County, south to Graham, Coconise, and Pima counties. Arizona and northern Mexico. Madrean.

Exsicc.: CHIR [Clark 8450, Reeves 991]. SWRS [Welch s.n.].

Ipomoea purpurea (L.) Roth
Ipomoea /emmonii
Ipomoea tenuiloba Torr.
Ipomoea lemontii Gray, I. tenuiloba var. lemontii (Gray) Yatskievych and Mason
Morning-glory


Exsicc.: CHIR [Clark 8678, Moir 434, Reeves 1521, 1666, 4359]. FOBO [MHoy 321]. SWRS [1959-819, Leutcke s. n.].

Ipomoea tenuiloba Torr.
Ipomoea lemontii Gray, I. tenuiloba var. lemontii (Gray) Yatskievych and Mason
Morning-glory
[4,500] - 6,000 ft. Aug - [Sep]. Perennial deciduous forb, bulb geophyte; microphyll, orthophyll. Uncommon on mountain sides, rocky outcrops, twining on other plants.


Exsicc.: CHIR [Clark 8680]. ARIZ [Clark 8680, Blumer 2138].

Ipomoea triloba L.
Star-glory


Exsicc.: CHWA [Leithliter 851].

CORNACEAE — Dogwood Family.
A family of trees, shrubs, or subshrubs or subsubs, rarely lianaceous. Widely distributed with about 10 genera and 90 species confined to tropical and temperate climates of North America and Asia but also in South American and New Zealand. Chiefly useful as ornamentals.

Cornus sericea L. ssp. sericea
Cornus alba L. pro parte, C. alba var. baileyi (Coulit. and Evans) Boivin, C. alba var. californica (C.A. Mey.) Boivin, C. alba var. interior (Ryd.) Boivin, C. baileyi Coulit. and Evans, C. instolonea A. Nels., C. interior (Ryd.) N. Petersen, C. sericea L. ssp. stolonifera (Michx.) Fosberg, C. stolonifera var. baileyi (Coulit. and Evans) Drescher, Swida instolonea (A. Nels.) Ryd., S. stolonifera (Michx.) Ryd.
Red osier dogwood


Exsicc.: SWRS [1960-438, Wittmann 96]. CHWA [Leithliter 600].

CRASSULACEAE — Stonecrop Family.
A family of succulent annual or perennial herbs, shrubs, rarely climbing plants. Widely distributed although almost entirely absent from Australia and Oceania with only 3 - 4 genera in South America. About 33 genera with 500 - 1,000 species.

Graptopetalum bartramii Rose
Echeveria bartramii (Rose) Kearney and Peebles
[4,000] - 6,000 ft. [Sep] - [Feb]. Perennial evergreen forb. Uncommon on rock outcrops and rocky soil.


Exsicc.: SWRS [Walker s.n.].

Graptopetalum rusbyi (Greene) Rose
Cotyledon rusbyi Greene, Dudleya rusbyi (Greene) Britt. and Rose, Echeveria rusbyi (Greene) Nels. and J.F. Macbr., Graptopetalum orpetii E. Walth.
Stone-crop


Exsicc.: CHIR [Reeves 3598]. Rincon [Jenkins 1763].

Sedum cockerellii Britt.
Cockerellia cockerellii (Britt.) A. and D. Löve, ?Sedum griffithsii Rose, Sedum wootonii Britt.
Stone-crop
Chiricahua Mts.: Chiricahua Nat. Mon. in East Whetstail Canyon, Picket Canyon; Fort Bowie Nat. Historic Site on Bowie Mountain; Wilderness Area, Crest Trail near Painted Rock; Centella Point, Monte Vista Peak. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts. Southern Apache, Graham, Cochise, Santa Cruz, and Pima counties. Southwestern New Mexico, eastern and southern Arizona, and northern Mexico. Apachean.

Crossosomataceae—Crossosoma

Family.
A family of shrubs or small trees with rough bark. The family has no economic value.

Apacheria chiricahuensis C.T. Mason

Chiricahua Mts.: Chiricahua Nat. Mon.: Picket Canyon, Hunt Canyon, Heart of Rocks Trail; Cave Creek. Apachean.

Apparently flowering throughout the year, but most profusely following the onset of the summer rains. This species, described in July, 1975, is apparently endemic to the northern Chiricahua Mountains.

Exsicca: CHIR [Clark 8950, s.n., Reeves 902, 2454, 2626, 3048, 4069]. SWRS [SWRS s.c. s.n., Reeves R902, n.c. 4069].

Glossopetalon spinescens Gray var. spinescens
Forsselia spinescens (Gray) Greene
Spiny-stemmed tongue flower
4,500 - 5,500 ft. Narrow leaf dioecious shrub, nanophanerophyte. Limestone cliffs.

Chiricahua Mts. Also Dos Cabezas Mts., Mustang Mts. Cochise County and probably Santa Cruz County. Western Texas to southeastern Arizona and northern Mexico. Southwestern.

Cucurbitaceae—Gourd Family.
A family of climbing or prostrate annuals or infrequently perennial mostly monoecious herbs, rarely a small suffrutescent tree. There are about 100 genera and 650 species of pantropical or subropical distribution about equally divided between the Old World and New World, and includes many with extensions into the temperate zones of both hemispheres. The family is economically important as a food source (mellons, cucumbers, and chayote).

Apodanthera undulata Gray
Melon-loco

Chiricahua Mts.: Chiricahua Nat. Mon. in lower Pinery Canyon; Fort Bowie Nat. Historic Site near Apache Pass Road; SWRS; San Simon Cienega. Also Rincon Mts., Sierra Ancha, Mule Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Southern Yavapai, Pinal, Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona and Mexico. Chihuahuan.

Exsicca: CHIR [Clark 8534, Reeves 3455, 3514, 4102]. FOBO [MHoy 262]. SWRS [s.d. sn.].

Cucurbita digitata Gray
Gourd, coyote melon

Chiricahua Mts.: Chiricahua Nat. Mon. in Picket Park; lower Pinery Canyon; Fort Bowie Nat. Historic Site in South Canyon; 4 mi. north of Portal. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts. Graham County to southern Yavapai County, south to Cochise, Santa Cruz, Pima, and eastern Yuma counties. Southwestern New Mexico to southeastern California and northern Mexico. Sonoran.

Exsicca: CHIR [Reeves 4125, Clark 8376]. FOBO [MHoy 289, 290]. SWRS.

Cucurbita foetidissima Kunth
Pepo foetidissima (Kunth) Britt.
Buffalo-gourd, calabazilla

Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Bonita Canyon, Visitor Center parking lot; grasslands west and south of monument; Fort Bowie Nat. Historic Site along road east of trailer; Portal to Paradise road. Along highway 666 south of Willcox. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Animas Mts., Canelo Hills, Sierra de los Ajos. Navajo and Coconino counties to Cochise and Pima counties. Missouri and Nebraska to Texas, Arizona, southern California, and Mexico. Southwestern.

The fruits were eaten by the Indians of Arizona cooked, or dried for winter use, and the weeds were eaten in the form of mush. Useful as a ground cover.

Exsicca: CHIR [Clark 8299, Reeves 1551, 3060]. FOBO [MHoy 228].

Marah gilensis Greene
Big root, wild cucumber


Exsicca: SWRS [MHoy s.n.].
Sicyos ampolophyllus Woot. and Standl.


Chiricahua Mt.s: Southwestern Research Station at house #11; Portal. Also Huachuca Mt.s. Yavapai, Cochise, and Pima counties. New Mexico and Arizona. Apachean.
Exiscc.: SWRS [Walker s.n., Barr 64-478].

Cyperaceae—Sedge Family.

A very large family of mostly perennial (infrequently annual) grasslike herbs, often of damp boggy, marshy, or riparian habitats. World-wide distribution but particularly common in subarctic and temperate regions of the northern and southern hemispheres. There are about 3,200 species world-wide divided into 72 - 83 genera.

Bulbostylis capillaris (L.) Kunth ex C.B. Clarke ssp. capillaris

Bulbostylis capillaris var. crebra Fern., B. capillaris var. isopoda Fern., Fimbriystis capillaris (L.) Gray, Scirpus capillaris L., Stenophyllum capillaris (L.) Britt.


Chiricahua Mt.s: Chiricahua Nat. Mon. Also Huachuca Mt.s., Rincon Mt.s., Sierra Ancha, Animas Mt.s. Yavapai, Greenlee, Gila, Cochise, Santa Cruz, and Pima counties. Widely distributed in North America. Temperate.
Exiscc.: CHIR [Clark 8598, Keil and McGill 8532, Lehto 3332, Reeves 1237].

Bulbostylis funcii (Steud.) C.B. Clarke

Isolepis funcii Steud.


Chiricahua Mt.s. Also Huachuca Mt.s., Sierra Ancha, Hualapai Mt.s., Pinal Mt.s., Santa Catalina Mt.s., Baboquivari Mt.s. Mohave, Gila, Cochise, and Pima counties. New Mexico and Arizona, southward to South America; West Indies. Latin American.
Exiscc.: SWRS [SWRS 1958-34].

Carex chihuahuensis Mackenzie


Chiricahua Mt.s: Cave Creek Canyon; San Bernardino Valley. Also Huachuca Mt.s., Rincon Mt.s., Pinaleno Mt.s., Sierra Ancha, Santa Catalina Mt.s., Santa Rita Mt.s. Southeastern Arizona and Sierra Madre Occidental. Apachean.
Exiscc.: ARIZ [Loomis and Peebles 5393, 5859; L.J. Toolin 707B, Sanders, Kirtland, Emory 2639].

Carex deweyana Schwein. ssp. leptopoda (Mackenzie) Calder and Taylor


Chiricahua Mt.s: Round Park. Coconino, Pinal, Cochise, Santa Cruz, and Pima counties. Montana to British Columbia, south to New Mexico, Arizona, and California. Western.
Exiscc.: SWRS [SWRS 1960-163].

Carex geophila Mackenzie


Chiricahua Mt.s: Crest Trail near Painted Rock. Rincon Mt.s., Sierra Ancha, Chuska Mt.s., White Mt.s., Pinaleno Mt.s. Apache and Graham counties. New Mexico and Arizona.
Madrean. Exiscc.: SWRS [Roth s.n.].

Carex lanuginosa Michx.

Carex lasiocarpa Ehrh. var. latifolia (Boeckl.) Gleason

Wooly sedge


Chiricahua Mt.s: Southwestern Research Station. Also Pinaleno Mt.s., Canelo Hills. Apache County to Mohave and Yavapai counties. New Brunswick to British Columbia, south to Tennessee, Texas, Arizona, and California. Temperate.
Exiscc.: SWRS [Roth s.n.].

Carex leucodonta Holm


Chiricahua Mt.s: Chiricahua Nat. Mon. on Greenhouse Canyon slope. Also Rincon Mt.s., Mule Mt.s., Huachuca Mt.s. Cochise, Santa Cruz, and Pima counties. Southern Arizona and northern Mexico. Madrean.
Exiscc.: CHIR [Reeves 3704, 4160]. SWRS [SWRS 1958-34].

Carex micropera Mackenzie

Carex festivella Mackenzie, C. limnophila F.J. Herm., C. macloviana d'Urv. ssp. festivella (Mackenzie) A. and D. Loe, C. macloviana var. micropera (Mackenzie) Boivin, C. micropera var. crassinervia F.J. Herm., C. micropera var. limnophila (F.J. Herm.) Dorn


Exiscc.: SWRS [Roth s.n.].

Carex occidentalis Bailey

Carex neomexicana Mackenzie

[6,500] - 9,300 (9,500) ft. May - [Aug]. Perennial deciduous forb, rhizome geophyte; microphyll, orthophyll. Uncommon on dry shaded slopes and outcrops, dry meadows.

Chiricahua Mt.s: Wilderness Area, Round Park. Also

Carex praegracilis Booth.

Carex camporum Mackenzie


Chiricahua Mts.: Chiricahua Nat. Mon. at South Fork Cave Creek. Also Rincon Mts., Sierra Ancha, Pinaleño Mts., Canelo Hills. Apache County to Mohave County, south to Cochise and Pima counties. Manitoba to Yukon, south to central Mexico and California; Michigan; South America. Northern. Exsicc.: CHIR [Reeves 2437, 2525, 2857]. SWRS [Ordway 71].

Carex senta Booth


Carex ultra Bailey

Carex spissa Bailey var. ultra (Bailey) Kükenth.


Carex vallicola Dewey


Carex wootonii Mackenzie


Carex esculentus L.

Chufa, yellow nut-grass


Carex manimae Kunth

Carex buckleyi Britt., C. manimae var. asperrimus (Liebm.) Kükenth. C. spectabilis Link

Flat-sedge


Carex mutisii (Kunth) Griseb.

Carex incompletus (Jacq.) Link, Mariscus mutisii Kunth


Carex niger Ruiz and Pavón


Chiricahua Mts.: Herb Martyr Dam. Also Huachuca Mts., Navajo, Yavapai, Greenlee, Gila, Cochise, Santa Cruz, and Pima counties. Texas to California, southward to South America. Southwestern, Latin American. Exsicc.: SWRS [Roth s.n.].

Carex retroflexus Buckl.

Carex uniflorus Torr. and Hook. non Thunb., C. uniflorus var. pseudothysiflorus Kükenth.

Flat-sedge


Chiricahua Mts.: Chiricahua Nat. Mon. at base of Organ Pipe formation. Also Sierra Ancha, Beaver Creek, Yavapai County. Arkansas, Oklahoma, Texas, New Mexico, Arizona, and northern Mexico. Southwestern. Exsicc.: CHIR [Reeves 1339].
Cyperus seslerioides Kunth
6,000 f. Perennial graminoid, semirosette hemicyrptophyte.
Chiricahua Ms.; Also Huachuca Ms.; Mule Ms.; Cochise and Santa Cruz counties. Texas, southern Arizona, Mexico. Latin American.

Cyperus sphaeroepilis Boeckl.
Cyperus fenderianus Boeckl. var. debilis (Britt.) Kükenth., Cyperus rusbyi Britt.
Flat-sedge
Chiricahua Ms.: Chiricahua Nat. Mon. in Picket Park; Jesse James Canyon; Madrone Canyon; Fort Bowie Nat. Historic Site at old fort site; Apache Pass Road; 2 mi. southwest of Portal at Cochise City; South Fork Cave Creek Canyon; Onion Saddle; Barfoot Park. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Pineleafo Ms., Animas Ms., Patagonia Ms., Santa Rita Ms. Graham, Gila, Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and Mexico. Madrean.
Exsicc.: CHIR [Clark 8385, 8575; Moir 425, 477, 515; Reeves 1565, 1617, 1621, 4561, 960, 4451]. SWRS [Ornway s.n., 170b]. ASU (Cazier 333). Repository unknown [Blumer 1345].

Cyperus squarrosus L.
Cyperus aristatus Roth., C. aristatus var. runyonii O'Neil, Cyperus inflexus Muhl.
Flat-sedge
Chiricahua Ms.: Chiricahua Nat. Mon. in Picket Park; Fort Bowie Nat. Historic Site in Siphon Canyon; top of Cochise Head. Also Rincon Ms., Sierra Ancha, Pineleafo Ms., Animas Ms., Navajo and Coconino counties, south to Cochise, Santa Cruz, and Pima counties. Throughout most of North America; South America, tropics of the Eastern Hemisphere. Holartic, Latin American.
Exsicc.: CHIR [Clark 8599, Fish 22, Moor 531, 566, Reeves 1690]. SWRS [Roth s.n.].

Eleocharis bella (Piper) Svens.
Eleocharis acicularis (L.) Roemer and J.A. Schultes var. bella Piper, E. acicularis var. minima Torr.
5,500 ft. Jul. Summer annual forb, scapose or leafy-stemmed therophyte; leptophyll, orthophyll. Uncommon in damp soil in streambeds, in wet sand along streams.
Chiricahua Ms.: Rucker Canyon. Also Pineleafo Ms. Coconino County, Apache County, Cochise County. Montana to Washington, southward to new Mexico and Arizona. Western.

Eleocharis montevidensis Kunth
Eleocharis arenicola Torr.
Spike-rush
Chiricahua Ms.: Chiricahua Nat. Mon.; Southwestern Research Station. Also Rincon Ms., Huachuca Ms., Sierra de los Ajos. Cochise County, Pima County, probably also at Coconino County, South Carolina to California and Mexico; South America. Temperate, Latin American.
Exsicc.: CHIR [Clark 8263, Reeves 1397A, 2859, 2880]. SWRS [Ordway 157].

Eleocharis palustris (L.) Roemer and J.A. Schultes
Eleocharis calva Torr. var. australis (Nees) St. John, Eleocharis macrostachya Britt., E. mamillata all. non. Lindb. f., E. palustris (L.) Roemer and J.A. Schultes var. australis Nees, E. palustris var. major Sonder, E. smallii Britt. var. E. smallii Britt. var. major (Sonder) Seymour, E. xyridiformis Fern. and Brack.
Chiricahua Ms.: Southwestern Research Station. Also Santa Catalina Ms., Animas Ms. Apache County to Coconino County, south to Graham, Pima, and Yuma counties. Missouri to British Columbia, south to Mexico. Western.
Exsicc.: SWRS [Roth s.n.].

Eleocharis rostellata (Torr.) Torr.
Eleocharis rostellata var. congdonii Jepson, E. rostellata var. occidentalis S. Wats., Scirpus rostellatus Torr.
Spike-rush
Chiricahua Ms.: Chiricahua Nat. Mon.; Canelo Hills. Grand Canyon, Coconino County, Cochise County. North and South America; West Indies. Temperate, Latin American.
Exsicc.: CHIR [Reeves 1397, 2858, 3477].

Lipocarpa drummondii (Nees) G. Tucker
Hemicarpa drummondii Nees, H. micrantha (Vahl)
Pax var. drummondii (Nees) Friedland, Scirpus micranthus Vahl. var. drummondii (Nees)
Mohlenbrock
Exsicc.: CHIR [Moir 427, V8599].

Scirpus americanus Pers.
EBENACEAE—Ebony Family.
A widely distributed family of generally dioecious trees or shrubs with heartwood often black, red, or green. About 5 genera and about 325 species. The family is of economic value as a source for timber (Macassar ebony) and fruit (persimmon).

*Diospyros kaki L.
Japanese persimmon
5,200 ft. Broadleaf deciduous tree, microphanerophyte; mesophyll, orthophyll. Orchard cultivar.
Chiricahua Mts.: Chiricahua Nat. Mon. at Stafford Cabin.
Cultivar. Exsicc.: CHIR [Reeves 3411].

ERICACEAE—Heath Family.
A family mainly of shrubs, occasionally suffruticous perennial herbs, trees, or rarely trailing or scrambling vines. About 70 genera and 1,900 species, very widely distributed on acid soils throughout temperate regions of both hemispheres and to a lesser extent subtropical-climate, from sea level to very high elevations in the tropics. There are 25 genera in the United States.

Arbutus arizonica (Gray) Sarg.
Madrone
Chiricahua Mts.: Chiricahua Nat. Mon.; Rhyolite Canyon; Jesse James Canyon; West Turkey Creek; Mormon Canyon; South Fork Cave Creek; Price Canyon (especially fine sand); John Long Canyon; on road below Rustler Park; Wilderness Area. Also Huachuca Mts., Rincon Mts., Animas Mts., Pinaleño Mts., Santa Catalina Mts., Santa Rita Mts., San Luis Mts., Mulé Mts., Sierra de los Ajos. Mountains of Graham, Cochise, and Pima counties. Southern New Mexico, southeastern Arizona, and northern Mexico in Sonora and Chihuahua, southward to San Luis Potosí and Jalisco. Madrean.
Food for Elegant Trogons and Eared Trogons. Not observed to be fire resistant in the Chiricahua Mts. Sites with highest density of this species show little apparent evidence of fire.

Arctostaphylos pringlei Parry
Arctostaphylos drupacea (Parry) P.V. Wells, A. pringlei var. drupacea Parry
Manzanita
Common on dry well-drained upland slopes, often on old fire sites. Cypress, juniper, and pinyon.
Food for Montezuma and Gambel's quail, skunks, foxes, and coyotes.
Exsicc.: CHIR [Clark 8383, Reeves 1896, 3136].

Arctostaphylos pungens Kunth
Arctostaphylos chaloneorum J.B. Roof, A. pseudopungens J.B. Roof, A. pungens ssp. chaloneorum J.B. Roof
Point-leaf manzanita, Mexican manzanita
Chiricahua Mts.: Chiricahua Nat. Mon.; Bonita Canyon campground; Pickett Park; upper Sara Deming Canyon; Fort Bowie Nat. Historic Site in lower South Canyon, Apache Pass; Whitetail Canyon; Jius Canyon; Sunny Flats Campground. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Pinaleño Mts., Sierra Ancha, Mulé Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Apache County to northern Mohave County, south to Cochise, Santa Cruz, and Pima counties. New Mexico, southern Utah, Arizona, southern California, and Mexico.
Southwestern.
Fruits sold in Mexican markets and used for jellies. Mexicans use leaves and fruits as household remedies for dropy, bronchitis and venereal diseases. Fruits are eaten by grouse, skunks, coyotes, deer, quail, and bear. Seed germination percentage about 35. Decumbent branches take root (layering).

Vaccinium myrtillus L. var. myrtillus
Blueberry, whortleberry, Rocky Mountain whortleberry
Exsicc.: SWRS [Walker s.n.].

EUPHORBIACEAE—Spurge Family.
A family of monoecious, or occasionally dioecious, herbs, shrubs, or trees, often with milky sap, sometimes fleshy and cactuslike. The sap is often poisonous or allergic. A large family of 283 genera and 7,300 species of cosmopolitan distribution, mainly in the tropics but extending also into the temperate regions of both hemispheres. The major centers of distribution are tropical America and Africa. In the United States there are about 25 genera represented by about 225 species. The family is of considerable economic importance and is the source of tung oil, castor oil, cassava, and tapioca.
Acalypha indica L.
5,000 ft. Summer annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll.


Acalypha lindheimeri Muell.-Arg.
*Acalypha lindheimeri* var. major Pax and K. Hoffmann
Three seeded mercury

Chiricahua Mts.: Chiricahua Nat. Mon.; 2 mi. southwest of Portal; along Silver Creek. Also Animas Mts., Canelo Hills; Sierra de los Ajos. Mountains of Cochise, Santa Cruz, and Pima counties. Texas to southern Arizona; Sonora, Mexico. Southwestern.


Acalypha neomexicana Muell.-Arg.
New Mexico copperleaf


Exsicc.: CHIR [Clark 8634, Lehto 3309, Moir 482, 568, Reeves 1223, 1389]. FOBO [M. Hoy 394].

Argythamnia neomexicana Muell.-Arg.
*Ditaxis neomexicana* (Muell.-Arg.) Heller

Chiricahua Mts.: Cave Creek 1 mi. above Southwestern Research Station. Also Rincon Mts., Santa Catalina Mts. Coconino County and Mohave County to Greenlee, Cochise, Pima, and Yuma counties. Texas to southern Arizona, Sonora, and Baja California. Southwestern.

Some authorities choose to retain this species in *Ditaxis*. Exsicc.: SWRS [Luecteck s.n.].

Chamaesyce albomarginata (Torr. and Gray) Small
*Euphorbia albomarginata* Torr. and Gray
Spurge, rattlesnake weed


Exsicc.: CHIR [Clark 8212, Moir 481, Reeves 2771, 3456, 3548, 3736, 4175]. FOBO [MHoy 19]. SWRS [Ordway s.n., SWRS 1960-527].

Chamaesyce capitellata (Engelm.) Millsp.

Chiricahua Mts.: 6 mi. east of Portal. Also Rincon Mts., Santa Catalina Mts. Throughout Arizona except the lower western desert and northeastern portion. Texas to Arizona and northern Mexico. Southwestern.

Exsicc.: SWRS [Cazier s.n.].

Chamaesyce dioica (Kunth) Millsp.
*Chamaesyce indivisa* (Engelm.) Millsp., *Euphorbia indivisa* (Engelm.) Tidestrom

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon, Sugarloaf Mtn., residential area; Cave Creek, Stewart Campground. Also Huachucas, Pinaleno Mts., Santa Rita Mts. Greenlee County to Yavapai County south to Cochise, Santa Cruz and Pima counties. Western Texas to Arizona and northern Mexico. Chihuahan.

Exsicc.: ASU [Bingham 1847; Reeves 1001a; Martin 11; Keil, et al. 9846].

Chamaesyce hyssopifolia (L.) Small
*Chamaesyce brasiliensis* (Lam.) Small, *Euphorbia brasiliensisl* Lam., *E. hyssopifolia* L., Sand-mat
[1,000] 4,300 - 5,500 ft. [6,000] Aug - Sep [Nov]. Summer-annual forb, scapose or leafy-stemmed therophyte. Common, frequent on sunny slopes and woodland openings. *Platanus wrightii*, *Quercus arizonica*.


Chamaesyce prostrata (Ait.) Small
*Euphorbia chamaesyce auct. non* L., *E. prostrata* Ait.
Spurge

Chiricahua Mts.: Chiricahua Nat. Mon. in residential area. Also Huachucas, Fossil, Cochise, Santa Cruz, and Pima counties. South Carolina and Florida to southern Arizona, south into tropical America. Latin American.

Exsicc.: CHIR [Reeves 4049].
Chamaesyce revoluta (Engelm.) Small

Euphorbia revoluta Engelm.

Spurge

[3,000] 5,200 - 6,200 ft. Aug - Sep [Oct]. Summer-annual forb, scapose or leafy-stemmed therophyte. Uncommon in openings in woodlands and along washes, on gravelly soil.


Exsicc.: CHIR [Clark 9248, Moir 480, Reeves 1274, 1443]. SWRS [Roth s.n.].

Chamaesyce serpyllifolia (Pers.) Small ssp. serpyllifolia

Chamaesyce albicaulis (Rydb.) Rydb., C. neomexicana (Greene) Standl., Euphorbia neomexicana Greene, E. serpyllifolia Pers.

Spurge


Exsicc.: CHIR [Clark 9249, Moir 459, Reeves 1001, 1273, 1436, 4174]. SWRS [s.s. s.n.].

Chamaesyce serrula (Engelm.) Woot. and Standl.

Euphorbia serrula Engelm.

Spurge


Exsicc.: CHIR [Clark 8715, Reeves 3782, 4370]. SWRS [Walker s.n., Roth s.n.].

Chamaesyce stictospora (Engelm.) Small

Euphorbia stictospora Engelm.

Narrow-seeded spurge


Exsicc.: CHIR [Moir 545; Reeves 1001a, 1442, 4479]. SWRS [Roth s.n.].

Croton pottsi (Klotzsch) Muell.-Arg. var. pottsi

Croton corymbulosus Engelm.

Leather weed

Euphorbia alta N.B.S. Norton

Tithymalus altus Woot. and Standl.


Exsicc.: SWRS [P Hughes s.n., SWRS 1960-194].

Euphorbia bilobata Engel.

Spurge

[3,500] 5,100 - 6,300 ft. Jul - Oct. Summer annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Local along streambeds.


Exsicc.: CHIR [Clark 8715, Reeves 3782, 4370]. SWRS [Walker s.n., Roth s.n.].

Euphorbia brachycera Engel.

Tithymalus brachycerus Small

Spurge


Exsicc.: CHIR [Moir 512, Reeves 1455, 1516, 2787, 3089, 3698, Reed 246]. SWRS [Roth s.n.].

Euphorbia chamaeasula Boiss.

Tithymalus chamaeasula (Boiss.) Woot. and Standl.


Exsicc.: SWRS [SWRS 1960-218].

[2,500] 4,500 - 5,000 [6,000] ft. May - Sep [Oct]. Perennial deciduous forb, scapose or leafy-stemmed proto-chamaephyte; nanophyll, orthophyll. Xeric bajadas, along arroyos, roadsides, and on disturbed ground.


The leaves are reported to be used in domestic medicine in Texas.

Exsicc.: FOBO [MHoy 132]. SWRS [Walker s.n.]. ASU [Marrs-Smith 1157; Daniel 3131; Mittleman and Butterwich 365a].
Euphorbia dentata Michx.
Euphorbia dentata var. cuphospersma (Engelm.) Fern., E. dentata var. gracillima Millsp., Poinsettia cuphospersma Engelm., P. dentata (Michx.) Klotzsch and Garcke, P. dentata var. cuphospersma (Engelm.) Mohlenbrock

Spurge


Exsicc.: CHIR [Moir 495, Reeves 1294, 1420, 1654]. SWRS [Roth s.n.].

Euphorbia extipulata Engelm.


Exsicc.: ASU [Marrs-Smith 968; Lehto 3974].

Euphorbia heterophylla L.
Euphorbia gigantea Ortega, E. heterophylla L., E. praunifolia Jacq., Poinsettia gigantea (Ortega) Klotzsch and Garcke, P. heterophylla (L.) Klotzsch and Garcke

Painted spurge


Exsicc.: SWRS [Roth s.n.]. ASU [Pinkava, et al. 849].

Euphorbia incisa Engelm.


Exsicc.: SWRS [Pough 1961-102, Ordway 120], CHWA [Leithüller 25, 40, 357]. NMC [Carter s.n.; Touney 231e].

Euphorbia spathulata Lam.


Exsicc.: SWRS [Ordway 110].

Jatropha macrorhiza Bentham.


Chihuahuan.

The large thick root is said to be strongly purgative.


Tragia nepetifolia Cav.

Nose-burn


Chiricahua Mts.: Chiricahua Nat. Mon.; Southwestern Research Station. Also Huachucas Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts. Apache County to Coconino County, south to Cochise, Santa Cruz, Pima, and Yuma counties. Texas to Arizona and Mexico. Temperate.

Exsicc.: CHIR [Reeves 3074, 3760, 3804, 4271]. SWRS [Roth s.n.].

Tragia ramosa Tott.


Nose-burn


Chiricahua Mts.: Fort Bowie Nat. Historic Site in South Canyon; Chiricahua Nat. Mon.; at base of Harris Mtn. Also Huachucas Mts., Rincon Mts., Sierra Ancha, Pinaleno Mts., Animas Mts. Apache County to Mohave County and northern Gila County, also mountains of Cochise County. Colorado and Texas to California and northern Mexico. Southwestern.

Exsicc.: CHIR [Clark 8221, Reeves 1379, 2976, 4007]. FOBO [Mißy 294]. SWRS [Walker s.n.].
FABACEAE (LEGUMINOSAE)—Pea Family.
A family of herbs, shrubs, or trees. About 550 genera spread
around the world in tropical and temperate areas. Economically
important for food, fodder, dyes, gums, resins, oils, and
ornamentals.

Acacia angustissima (Mill.) Kunze var.
suffrutescens (Rose) Isely
Acacia angustissima var. caspidea (Schlect.) L.
Benson pro parte. A. caspidea Schlecht. pro parte
White-ball acacia
Bouteloua gracilis, B. curtipendula, Juniperus deppeana, Pinus discolor, Cercocarpus montanus, Quercus emoryi.

Chiricahua Mts.: Chiricahua Nat. Mon. southwest of Jessie James Canyon; Fort Bowie Nat. Historic Site along Apache Pass Road; Cave Creek Canyon at Crystal Cave; Portal to Paradise road. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Animas Ms., Mule Ms., Pinaleno Ms., Canelo Hills, Sierra de los Ajos. Greenlee County to eastern Yavapai County, south to Cochise, Santa Cruz, and Pima counties. Missouri to Texas and Arizona, southward to Guatemala; southern Florida. Temperate, Latin American.
Exsicc.: CHIR [Clark 8532, 8287, Moir 478, 538, Reeves 1277A, 1561, 2572, 3559]. FOBO [MHoy 462].

Acacia constricta Benth.
White thorn, muscat acacia

Chiricahua Mts.: Paradise to Portal road; Fort Bowie Nat. Historic Site; San Simon Cienega. Also Huachuca Mts., Rincon Mts., Mule Ms., Dos Cabezas Ms., Pinaleno Ms., Sierra Ancha, Santa Catalina Ms. Greenlee, Gila, and Yavapai counties to Cochise, Pima and Yuma counties. Texas to Arizona and Mexico. Southwestern.

Foliage not very palatable to livestock though pods are eaten.
Exsicc.: SWRS [SWRS 1958-86].

Acacia greggii Gray.
Cat-claw, devils-claw

Chiricahua Mts.: Fort Bowie Nat. Historic Site; Gas Line Road (near Fort Bowie); 1 mi. northeast Portal. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Ms., Pinaleno Ms., Animas Ms., Cochino County, and Mohave County to Greenlee, Cochise, Pima, and Yuma counties. Texas to southern Nevada, Arizona, southeastern California and northern Mexico. Southwestern.

Browsed by cattle in early spring. Indians made meal of the pods for mush and cakes. Good nectar source for bees. The wood is hard and strong.
Exsicc.: SWRS [SWRS 1958-279, Ordway 86].

Acacia neovernicosa Isely
Acacia constrita Benth. var. vernicosa (Standl.) L.
Benson, A. vernicosa Standl.
Viscid acacia

Chiricahua Mts.: San Simon Cienega and bajada along eastern flank of the mountains. Also Mule Ms. Cochise and eastern Pima counties. Western Texas to southeastern Arizona and northern Mexico. Madrean.

Amorpha fruticosa L.
[2,500] 4,800 - 6,900 ft. May - Jul. Pinnate leguminous shrub, nanophanerophyte. Common near springs, along water courses, in mesic bottoms often on steep slopes but also in drier spots, sun and shade.

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon, Hunt Canyon, Silver Spur Meadow; near Portal; Fort Bowie Nat. Historic Site in upper South Canyon; West Turkey Creek; Rucker Canyon; Tex Canyon; Price Canyon; Wilderness Area, along Basin Trail. Also Huachuca Mts., Rincon Mts., Pinaleno Ms., Sierra Ancha, Santa Catalina Ms., Animas Ms., Canelo Hills, Sierra de los Ajos. Apache County to Coconino, south to Cochise, Santa Cruz, and Pima counties. Ohio to Manitoba, south to Florida, Arizona, California and northern Mexico. Temperate.

May be poisonous to livestock. Often grows in clumps, rarely attacked by insects or disease.
Exsicc.: CHIR [Clark 8109, Reeves 1427, 2949, 3291]. FOBO [MHoy 177]. SWRS [Franclemont s.n.]. CHWA [Leithliter 460].

Astragalus allochrous Gray
Halfmoon loco

Chiricahua Mts.: Fort Bowie Nat. Historic Site at Parade ground, around ruins; near Portal. Also Huachuca Mts., Rincon Ms., Pinaleno Ms., Sierra Ancha, Santa Catalina Ms. Coconino and Mohave counties to Graham, Cochise, Santa Cruz and Pima counties. Southeastern New Mexico to southwestern California, Mexico. Southwestern. Causes loco disease in horses. Exsicc.: FOBO [MHoy 166]. SWRS [Roth s.n.].

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Astragalus arizonicus Gray
Loco weed
May cause loco disease.
Exsicc.: FOBO [MHoy 388].

Astragalus calycosus Torr. ex S. Wats. var. calycosus

Astragalus calycosus var. m anus (Rydgb.) Barneby
Gray locoweed
Chiricahua Mts.: Fort Bowie Nat. Historic Site on hill east of trailer. Apache County to eastern Mohave and northern Yavapai counties. Wyoming and Idaho to New Mexico, northern Arizona, and eastern California. Western.
This collection apparently represents a range extension to the south.
Exsicc.: FOBO [MHoy 117].

Astragalus cobrensis Gray var. maguirei
Kearney
Milk-vetch
Exsicc.: CHIR [Fish 35, Maguire, et al. 11079, Holotype, Whitetail Canyon, Reeves 2371A, 2435, 2464, 3289, 3448, 4355].

Astragalus nothoxys Gray
Loco-woed, sheep loco
Although readily eaten by deer, this species is toxic to cattle and sheep.
Exsicc.: CHIR [Reeves 2939]. FOBO [MHoy 122]. SWRS [Roth s.n.].

Astragalus nuttallianus DC. var. austrinus
(Small) Barneby
Astragalus austrinus (Small) E.D. Schulz

Milk-vetch
Exsicc.: CHIR [Reeves 2389, 2611, 2768]. FOBO [MHoy 93]. SWRS [Mouat s.n.].

Astragalus tephrodes Gray
Loco-woed
Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site on hill south of the ruins. Also Sierra Ancha. Apache County to Mohave County, south to Graham, Gila and eastern Maricopa counties. Western Texas to southern Nevada, Arizona and northern Mexico. Madrean.
Definitely known to cause loco disease.
Exsicc.: FOBO [MHoy 333].

Astragalus thurberi Gray
Loco-woed
Definitely known to cause loco disease.
Exsicc.: CHIR [Reeves 2535, 2571, 2584]. FOBO [MHoy 371]. SWRS [Roth s.n.].

Astragalus wootonii Sheldon
Astragalus allochrous Gray var. playanusi Isely, A. wootonii var. typicus Barneby
Loco-woed
Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site on hill east of trailer. Also Sierra Ancha. Coconino and Mohave counties to Graham, Cochise, Santa Cruz and Pima counties. Western Texas to southeastern California, and northern Mexico. Southwestern.
Definitely produces loco disease in cattle, horses, and sheep.
Exsicc.: CHIR [Reeves 2939]. FOBO [MHoy 122]. SWRS [Roth s.n.].

Caesalpinia drepanocarpa (Gray) Fisher
Hoffmannsegga drepanocarpa Gray
Sicklepod bush pea
[3,000] 5,000 - 5,100 ft. [Feb] May - May [Sep]. Perennial deciduous forb, spreading hemicryptophyte; nanophyll, orthophyll.
This taxon is not listed in Kartesz (1994)
Exsicc.: FOBO [MHoy 108]. SWRS [MHoy s.n.].
Caesalpinia gilliesii (Hook.) Wallich ex D. Dietr.

Poinciana gilliesii Wallich ex Hook.

Bird-of-paradise-flower


Ornamental. Plant ill-smelling.

Exsicc.: SWRS [SWRS 1936-90].

Calliandra eriophylla Benth.

Fairy duster, false mesquite


Chiricahua Mts.: Portal to Paradise road; Fort Bowie Nat. Historic Site on hills south of ruins; Paradise. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Tripp Canyon, Sierra Ancha, Santa Catalina Mts., Mule Mts., Sierra de los Ajos. Greenlee County to southern Mohave County, south to Cochise, Santa Cruz, Fima, and Yuma counties. Western Texas to southeastern California and Mexico. Southwestern.

Exsicc.: FOBO [M Hoy 111]. SWRS [Bottimer s.n.].

Calliandra humilis Benth. var. humilis

False mesquite


This taxon intergrades with Calliandra humilis var. reticulata but most specimens are readily distinguishable.

Exsicc.: CHIR [Reeves 1277A, 3193, 3784]. FOBO [M Hoy 261]. SWRS [s.c. s.n. (det. C. Mason)].

Calliandra humilis Benth. var. reticulata (Gray) L. Benson

Calliandra reticulata Gray

False mesquite


This taxon intergrades with C. humilis but is usually distinguishable.

Exsicc.: CHIR [Clark 9225, Lehto 3319, Moir 430, Reeves 1231, 1456, 1600, 3624]. FOBO [M Hoy 223].

Calliandra schottii Torr. ex S. Wats.


Exsicc.: CHIR [Clark 8631, Moir 529]. SWRS [Borrimer s.n., Wittman 154].

Clitoria mariana L.

Marti/us mariana (L.) Small

Butterfly-pee


Exsicc.: CHIR [Clark 8648, Moir 450, Reeves 3740, 4043]. SWRS [Pough 1961-35].

Cologania angustifolia Kunth

Cologania longifolia Gray


Chiricahua Mts.: Chiricahua Nat. Mon.: upper Jesse James Canyon; mountains west of Rustler Park; South Fork Cave Creek. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Pinaleño Mts., Canelo Hills, Sierra de los Ajos. Apache County to Coconino County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Madrean.

Both trailing and upright forms occur in the Rincon Mts.

Cologania lemmoni Gray
Exsis.: CHIR [Clark 8452, Reeves 4283].

Coursetia caribaea (Jacq.) Lavin var. sericea (Gray) Lavin
Cracca edwardsii Gray pro parte var. sericea Gray, C. sericea (Gray) Gray
[4,000] - 5,400 [6,000] ft. Jul - Aug [Sep]. Perennial deciduous forb, scapose or leafy-stemmed protomazine. Uncommon in stony ground, in shade, on rocky slopes, often with madrean oaks. Quercus emoryi, Quercus gambelii var. emoryi, Quercus sierrae, Quercus kelloggii, Quercus wislizenii, Quercus arizonica, Quercus grisebachii, Quercus chrysolepis, Quercus wislizenii var. arizonica.
Exsis.: CHIR [Clark 8723]. SWRS [Morse s.n.].

Crotalaria pumila Ortega
Rattlebox
Exsis.: CHIR [Borel 30, Clark 8671, Moir 497, 530, Reeves 1229, 1357, 1441, 1586, 4367]. SWRS [Roth s.n.].

Crotalaria sagittalis L.
Crotalaria sagittalis var. blumeriana Senn, C. sagittalis var. fruticosa (P. Mill.) Fawcett and Rendle, C. sagittalis var. oblonga Michx.
Rattlebox
Exsis.: CHIR [Reeves 1241]. SWRS [Luetcke s.n.]. ARIZ [Blumer 1772 co-type].

Dalea albiflora Gray
Dalea orlae Gray, Petalostemon pilosulus Rydb.
Indigo-bush, pea-bush
This plant, described as new to science was collected by J.C. Lemmon and wife in 1881 (s.n.) in Cochise County.
Exsis.: CHIR [Borel 15; Fish 26, Leito 3323, Moir 458, 462, Reeves 1454, 1732, 4343, 4505]. FOBO [MHOy 53]. SWRS [Day s.n., det. C. Mason].

Dalea candida (Michx.) Willd. var. candida
Petalostemon candidus Michx.
White prairie-clover
Chiricahua Mts.: Chiricahua Nat. Mon. Also Mule Mts., Animas Mts., Canelo Hills. Apache County to Coconino County, south to Cochise, Santa Cruz, and Pima counties. Indian to Saskatchewan and Montana, south to Mississippi, Texas, Arizona, and northern New Mexico. Temperate.
Exsis.: CHIR [Reeves 3542]. SWRS [Roth s.n.].

Dalea exigua Barneby
Petalostemon exigus Gray
Exsis.: ARIZ [Fishbein 490].

Dalea filiformis Gray
Indigo-bush, pea-bush
Chiricahua Mts.: Chiricahua Nat. Mon.; East Turkey Creek. Also Huachuca Mts., Rincon Mts., Sierra Ancha, White Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Apache or Navajo County, Hualpai Mts. (Mohave County), Yavapai, Greenlee, Cochise, Santa Cruz, and Pima counties. New Mexico, Arizona, and northern Mexico. Madrean.
Exsis.: CHIR [Clark 8673, Moir 453, 560, Reeves 1268, 1500A]. SWRS [Walker s.n.].

Dalea formosa Torr.
Exsis.: FOBO [MHOy 110]. SWRS [Cummins 216-61].
Dalea grayi (Vail) L.O. Williams
Indigo-bush, pea-bush
Exsiccs.: CHIR [Reeves 1610]. ASU [Cazier 806].

Dalea leporina (Ait.) Bullock
Dalea alopecuroides Wild., D. lagopus (Cav.) Willd., Parosela alopecuroides (Willd.) Rydb.
Dalea nana Torr. ex Gray var. carnesescens (Ryd.) Kearney and Peebles
Dalea nana var. elatio Gray ex B.L. Turner
Indigo-bush, pea-bush
Exsiccs.: CHIR [Reeves 2764, 4095]. FOBO [Mhooy 107]. SWRS [Roth s.n.].

Dalea pogonathera Gray
Indigo-bush, pea-bush
Exsiccs.: CHIR [Reeves 4094]. Rincon [Jenkins 2178]. FOBO [Mhooy 211]. SWRS [s.c. s.n.].

Dalea polygonoides Gray
Dalea polygonoides var. anomala (M.E. Jones) Morton

Dalea versicolor Zucc. ssp. versicolor var. sessilis (Gray) Barneby
Dalea wislizeni Gray ssp. sessilis (Gray) H.C. Gentry, D. wislizeni var. sanctae-crucis (Ryd.) Kearney and Peebles
Indigo-bush, pea-bush
Exsiccs.: CHIR [Fish 49, Reeves 3091, 3110]. SWRS [s.c. s.n.].

Dalea wrightii Gray
Exsiccs.: FOBO [Mhooy 45].

Desmanthus cooleyi (Eat.) Trel. James' bundleflower
Exsiccs.: CHIR [Clark 8408, Reeves 3517, 4297, 4412]. FOBO [Mhooy 260]. SWRS [SWRS 1959-782].

Desmanthus virgatus (L.) Willd. var. depressus (Humb. and Bonpl.) ex Willd. B.L. Turner
[4,000] - 4,500 ft. Perennial deciduous forb, scapose or leafy-stemmed hemicyrptophyte; microphyll, orthophyll. Dry scrub slopes, part sun.
Exsiccs.: FOBO [Mhooy, s.n.].
Desmodium arizonicum S. Wats.
*Meibomia arizonica* (S. Wats.) Vail
Tick-clover

[4,000] 5,300 - 6,000 [8,400] ft. [Jul] - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemi-creeping; microphyll, orthophyll. Uncommon on dry well-drained sites, and on old burns, dry pine woods.

Chiricahua Mts.: South Fork Cave Creek; Barfoot Park. Also Sierra Ancha, Rincon Mts., Huachuca Mts., Santa Catalina Mts., Gila, Cochise, Santa Cruz, and Pima counties. Southern New Mexico and Arizona and northern Mexico. Madrean.


Desmodium batocaulon Gray
*Meibomia batocaulis* (Gray) Kuntze
Tick-clover


Exsicc.: CHIR [Clark 8339, Fish 14, Moir 429, Reeves 3711, 4344, 4546]. SWRS [Ordway s.n.].

Desmodium cinerascens Gray
*Meibomia canbyi* Schindler, *M. cinerascens* (Gray) Kuntze
Tick-clover


Exsicc.: CHIR [Leithliter 546]. SWRS [Walker s.n.].

Desmodium grahami Gray
*Meibomia grahamii* (Gray) Kuntze
Tick-clover


Exsicc.: CHIR [Fish 15, Leithliter 3317, Reeves 1253, 1355, 3450, 4403]. SWRS [Ordway s.n.].

Desmodium gramineum Gray
*Desmodium angustifolium* (Kunth) DC. var. gramineum (Gray) Schub., *Meibomia graminea* (Gray) Kuntze


Reportedly collected by Blumer in Barfoot Park (Russell 1982).

Desmodium neomexicanum Gray
*Meibomia neomexicanum* (Gray) Kuntze
Tick-clover


Type collected in the Chiricahua Mts. by J.C. Blumer.

Exsicc.: CHIR [Moir 475]. ARIZ [Blumer 1675 (type)].

Desmodium procumbens (P. Mill.) A.S. Hitchc. var. exiguum (Gray) Schub.


Exsicc.: FBO [MHoy 345]. SWRS [Ordway s.n.].

Desmodium psilocarpum Gray
Tick-clover


Exsicc.: Rincon [Turner 75-97]. SWRS [Ordway 145].

Desmodium retinens Schlect.
Tick-clover, tick-trefoil


Desmodium rosei Schub.

Tick clover

[3,500] 5,400 - 6,800 ft. [Aug - Sep]. Summer-annual forb, scapose or leafy-stemmed therophyte. Common in wooded canyons, open woodland slopes, and rocky flats.

Chiricahua Ms.: Chiricahua Nat. Mon.; near junction Onion Saddle - Paradise roads; Wilderness Area. Also Huachuca Ms., Rincon Ms., Santa Catalina Ms., Mule Ms., Pinaleño Ms., Animas Ms. Navajo and Coconino counties to Greenlee, Cochise, Santa Cruz, and Pima counties. New Mexico, Arizona, and northern Mexico. Chihuahuan.

Exsicc.: CHIR [Clark 8689, Moir 476, 564, Reeves 1494, 1595, 1620, 4391]. SWRS [Walker s.n.]. CHWA [Leithlitter 654].

Erythrina flabelliformis Kearney

Western coral-bean, chilicote, coralbean, Indian-bean


Seeds are highly toxic if ingested. In Mexico jewelry is made from them which should not be given to children. This species becomes a small tree up to 15 feet high and 10 inches in trunk diameter at base, according to Kearney and Peebles, though usually it is a small bush.

Exsicc.: ARIZ [Blumer 1300, 1793, 2008].

Eysenhardtia orthocarpa (Gray) S. Wats.


Chiricahua Ms.: Half Moon Valley; Pedregosa Ms. at Indian Creek. Also Mule Ms., Santa Rita Ms., Rincon Ms., Baboquivari Ms., Peloncillo Ms. Graham, Final, Cochise, Santa Cruz, and Pima counties. Southwestern New Mexico, southern Arizona, and Mexico. Madrean.

Exsicc.: SWRS [SWRS 1958-88].

Galactia wrightii Gray var. mollissima

Kearney and Peebles


Chiricahua Ms.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site at Overlook; Paradise. Also Haachuca Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Pinaleño Ms., Canelos Hills, Sierra de los Ajos. Greenlee, Graham, Gila, Final, Cochise, Santa Cruz, and Fima counties. Western Texas to southern Arizona and northern Mexico. Madrean.

Exsicc.: CHIR [Clark 9041, Reeves 3519, 4055]. FOBO [MHoy 475]. SWRS [Walker s.n.].

Hoffmannseggia glauca (Ortega) Eifert


Hog-potato, camote-de-riaton


Chiricahua Ms.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site at fort ruins; 6 mi. east of Portal. Also Pinaleño Ms., Animas Ms., Sierra de los Ajos. Navajo County to Mohave County, south to Graham, Cochise, Pima, and Yuma counties. Kansas to Arizona, southern California, and central Mexico. Southwestern.

Cooked tuber eaten by Indians, good hog food, good soil binder.

Exsicc.: CHIR [Clark 8539, Reeves 2948, 4108]. FOBO [MHoy 277]. SWRS [Cazier s.n.].

Indigofera sphaerocarpa Gray

Indigo


Chiricahua Ms.: Chiricahua Nat. Mon. Also Rincon Ms., Mule Ms., Haachuca Ms., Canelos Hills, Cochise, Santa Cruz, and Pima counties. Southeastern Arizona and northern Mexico. Madrean.

Exsicc.: Clark 9253, Reeves 4451.

Lathyrus graminifolius (S. Wats.) White

Peavine


Chiricahua Ms.: Chiricahua Nat. Mon. in East Whitetail Canyon; Wilderness Area, Greenhouse Trail, Flies Peak, Monte Vista Trail. Also Haachuca Ms., Pinaleño Ms., White Ms., Animas Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms. Coconino County and Apache County to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Madrean.


Lathyrus lanszwertii Kellogg var. arizonicus (Britt.) Welsh

*Lathyrus arizonicus* Britt.

Peavine


Chiricahua Ms.: Wilderness Area, along Cret Trail; Centella Point. Also Rincon Ms., Pinaleño Ms., Sierra Ancha, Animas Ms., Sierra de los Ajos. Apache and Coconino counties, south to Cochise and Fima counties. Southern Colorado and southeastern Utah to north-central Mexico. Madrean.

Exsicc.: CHWA [Leithlitter 58].

Lotus greenei Ottley ex Kearney and Peebles

Deer-vetch
Lotus humistratus Greene
_Hosackia brachycarpa_ Benth.

Deer-vetch


Exsicc.: _CHIR [Reeves 2272, 2597]. FOBO [MHoy 72]. SWRS [SWRS 1959-51]."

Lotus plebeius (Brand) Barneby
_Hosackia puberula_ Benth. var. _nana_ Gray, _Lotus longibracteatus_ Rydb., _L. neomexicanus_ Greene, _L. oroboides auct. non_ (Kunth) Othley, _L. oroboides var. nanus_ (Gray) Isely, _L. oroboides var. nummularius_ (M.E. Jones) Isely

Deer-vetch

_Chiricahua Mts._: _Chiricahua Nat. Mon._; _Fort Bowie Nat._ Historic Site in Apache Pass at the Massacre Site; _Paradise_. Also _Huachuca Mts._, _Rincon Mts._, _Sierra Ancha_, _Santa Catalina Mts._, _Pinaleno Mts._, _Animas Mts._, _Santa Rita Mts._. Throughout most of Arizona except the northeastern portion. Southern Nevada, Arizona, southeastern California, and northwestern Mexico. Southwestern.

Exsicc.: _CHIR [Reeves 2383, 2612]. FOBO [MHoy 150]. SWRS [Walker s.n.]."

Lotus rigidus (Benth.) Greene
_Hosackia rigida_ Benth.

Desert rock pea

_Chiricahua Mts._: _Fort Bowie Nat._ Historic Site in upper South Canyon. Also _Rincon Mts._, _Sierra Ancha_, _Santa Catalina Mts._, _Pinaleno Mts._. Southern _Apache County to Mohave County_, south to _Graham_, _Pima_, and _Yuma counties_. Southern Utah and _New Mexico_. Arizona, southeastern California, and _Baja California_. Southwestern.

Exsicc.: _FOBO [MHoy 181]."

Lotus wrightii (Gray) Greene
_Hosackia wrightii_ Gray

Deer-vetch

_Chiricahua Mts._: _Chiricahua Nat. Mon._; _Fort Bowie Nat._ Historic Site; _Wilderness Area_. Also _Huachuca Mts._, _Rincon Mts._, _Dos Cabezas Mts._, _Pinaleno Mts._, _Sierra Ancha_, _Santa Catalina Mts._, _Animas Mts._. Apache County to Mohave County, south to _Cochise_ and _Pima counties_. Colorado to Oregon, New Mexico, Arizona, and California. Southwestern.

Exsicc.: _CHIR [Reeves 2294, 2381]. SWRS [SWRS 1958-92]. CHWA [Leithliter 563]."

Lupinus brevicaulis S. Wats.
_Lupinus dispersus_ Heller, _L. scaposus_ Rydb.


_Chiricahua Mts._: _Chiricahua Nat. Mon._; _Fort Bowie Nat._ Historic Site on hills between Cut Off Canyon and trail. Also _Pinaleno Mts._, _Animas Mts._. Apache County to Mohave County, south to _Cochise_, _Santa Cruz_, and _Pima counties_. Colorado to Oregon, New Mexico, Arizona, and California. Southwestern.

Exsicc.: _CHIR [Dole 129, Reeves 2614]. FOBO [MHoy 119]."

Lupinus concinnus J.G. Agardh
Elegant lupine

_Chiricahua Mts._: _Chiricahua Nat. Mon._; edge of meadow; _Fort Bowie Nat._ Historic Site in _Siphon Canyon_; _foot of Harris Mtn._. Also _Huachuca Mts._, _Rincon Mts._, _Sierra Ancha_, _Santa Catalina Mts._, _Pinaleno Mts._. Southern _Apache County to Mohave County_, south to _the Mexican border_. New Mexico to southern _Arizona_, _California_, and northern _Mexico_. Southwestern.

Exsicc.: _CHIR [Reeves 2348, 2558, 3281]. FOBO [MHoy 80]. SWRS [Walker s.n.]."

Lupinus lemmonii C.P. Sm.
Lupine

_Chiricahua Mts._: _Chiricahua Nat. Mon._ in _Lower Picket Canyon_; _Apache Pass_; _Sulphur Springs Valley_. _Santa Rita Mts._. _Cochise_ and _Pima counties_. Known only from southern _Arizona_. Apachean. This plant, described as new to science, was collected by _J.C. Lemmon_ and wife in _Sulphur Springs Valley_ in 1881 (s.n.).

Exsicc.: _CHIR [Clark 8637, Reeves 1652, 2556, 3149]."

Lupinus neomexicana Greene
_Lupinus blumeri_ Greene


_Chiricahua Mts._: _Rustler Park_; _Long Park_; _Pinery Canyon_ to _Barfoot Park_ road; _Wilderness Area_. Also _Pinaleno Mts._, _Huachuca Mts._, _Santa Rita Mts._. _Cochise_, _Santa Cruz_ counties. Apparently endemic in southeastern _Arizona_. Apachean.

Lupinus palmeri S. Wats.  
*Lupinus argenteus* Pursh var. *palmeri* (S. Wats.) Barneby  
Chiricahua Mts.; near Camp Stewart. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts. Cochise County, Mohave County, and southwestern and southeastward through Yavapai and Gila counties to southern Navajo, Cochise, and Pima counties. New Mexico and Arizona. Southwestern. Commonest and most widely distributed of the perennial lupines of Arizona.  
Exsicc.: SWRS [Roth s.n.].

Lupinus sparsiflorus Benth.  
Exsicc.: Fobo [MHoy s.n.].

Macroptilium gibbosifolium (Ortega) A. Delgado  
*Macroptilium heterophyllum* (Willd.) Maréchal and Baudet, *M. heterophyllum* var. *rotundifolium* (Gray) Maréchal, Mascherpa and Stanier, *Phaseolus heterophyllus* Willd., *P. heterophyllus* var. *rotundifolius* (Gray) Piper Bean  

Marina calycosa (Gray) Barneby  
*Delea calycosa* Gray  
Indigo-bush, pea-bush  
Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site at Overlook; Round Valley. Also Rincon Mts. Graham, Pinal, Cochise, Santa Cruz, and Pima counties. New Mexico, southern Arizona, and northern Mexico. Madrean.  
Exsicc.: CHIR [Reeves 2766]. FOBO [MHoy 210]. SWRS [Mout s.n.].

Medicago lupulina L.  
*Medicago lupulina* var. *capaniana* (Guss.) Boiss., *M. lupulina* var. *glandulosa* Neill.  
Exsicc.: SWRS [Roth s.n.].

Medicago sativa L.  
Alfalfa, lucerne  
Chiricahua Mts.: Chiricahua Nat. Mon. in Residential Area; Barfoot Park, Canelo Hills, Sierra de los Ajos. Temperate, Introduced.  
Exsicc.: CHIR [Reeves 4465]. ARIZ [Blumer 1563].

Melilotus officinalis (L.) Lam.  
*Melilotus albus* Medik., *M. albus* var. *annuus* Coe  
White sweet clover  
Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon Wash; Southwestern Research Station; Centella Point. Also Pinaleño Mts., Sierra Ancha, Canelo Hills, Navajo, Cochise, Yavapai, Graham, Pinal, Cochise, and Pima counties. Southwestern, Introduced.  
Exsicc.: CHIR [Reeves 1426, 1536, 2877]. SWRS [Roth s.n. (2 ea.)]. ARIZ [Blumer 1493].

*Mimosa aculeaticarpa* Ortega var. *biuncifera* (Benth) Barneby.  
Wait-a-bit, wait-a-minute  
Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon, Pinery Canyon Road at Jesse James Canyon; Fort Bowie Nat. Historic Site at Apache Spring; Portal to Paradise road, Price Canyon Road, Portal, John Long Canyon; Tex Canyon; north side of Silver Peak; San Simon Cienega. Also Huachuca Mts., Rincon Mts., San Simon Valley, Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts. Southern Apache County, Mohave County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Chihuahuan.  
**Mimosa dysocarpa** Benth.

*Mimosa dysocarpa* var. *wrightii* (Gray) Kearney and Peebles


Chiricahua Mt.: Chiricahua Nat. Mon.; Cave Creek; Wilderness Area. Also Huachuca Mt., Mule Mt., Animas Mt., Canelo Hills, Sierra de los Ajos. Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona and northern Mexico. Chihuahuan.


**Mimosa grahamii** Gray

*Mimosa lemmonei* var. *lemmonii* (Gray) Kearney and Peebles


Chiricahua Mt.: South Fork Cave Creek. Also Huachuca Mt., Rincon Mt., Animas Mt., Canelo Hills, Sierra de los Ajos. Cochise, Santa Cruz, and Pima counties. Southwestern New Mexico, southeastern Arizona, and northern Mexico. Chihuahuan.

Exsicc.: SWRS [Bottimer s.n.].

**Oxytropis lambertii** Pursh


White loco-weed


Chiricahua Mt.: Chiricahua Nat. Mon. in Bonita Canyon and Bonita Park; Onion Creek; Pinery Canyon; Wilderness Area, Saulsbury Trail near Little Bald Mountain. Also Huachuca Mt. Apache County to Coconino County, and Cochise County. Western Canada, south to Texas, New Mexico, and Arizona. Western.


**Phaseolus acutifolius** Gray var. *tenuifolius* Gray

Wild bean

[3,000] 5,000 - 5,500 [6,000] ft. Aug - Sep [Oec]. Summer-annual forb, spreading therophyte. Uncommon in open woodland, grassland, streambed rocks.

Chiricahua Mt.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site in upper South Canyon; near Southwestern Research Station. Also Huachuca Mt., Rincon Mt., Santa Catalina Mt., Mule Mt., Pinaleño Mt., Animas Mt., Greenlee, Graham, Pinal, Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona and Mexico. Southwestern.

Exsicc.: CHIR [Reeves 1492, 1567, 4019, 4569]. FOBO [MHo 309]. SWRS [Roth s.n.].

**Phaseolus filiformis** Benth.

**Phaseolus wrightii** Gray


Blumer's 1906 collection remains the sole specimen from the Chiricahua Mt.

Exsicc.: ARIZ [Blumer 1347].

**Phaseolus grayanus** Woot. and Standl.

Wild bean


Chiricahua Mt.: Greenhouse Trail; South Fork Cave Creek Trail; Wilderness Area, Rucker Canyon. Also White Mt., Pinaleño Mt., Gialuro Mt., Huachuca Mt., Santa Rita Mt., Santa Catalina Mt., Mule Mt., Animas Mt. Apache, Graham, Cochise, and Pima counties. Western Texas to southern Arizona and northern Mexico. Madrean.

Exsicc.: CHIR [Borell 20, Moir 558, Reeves 994, 1309, 3613, 3661, 4279]. CHWA [Leithliter 736].

**Phaseolus maculatus** Scheele

**Phaseolus metalifer** Woot. and Standl.


Chiricahua Mt.: Chiricahua Nat. Mon.; East Whistleack Canyon; Southwest Research Station; below Onion Saddle. Also Huachuca Mt., Mule Mt., Pinaleño Mt., Animas Mt., Dragoon Mt. Southern Navajo County and Yavapai County to Cochise and Pima counties. Southwestern New Mexico and Arizona. Apachean.

Exsicc.: ARIZ [Blumer V.232, Briggs s.n.]. CHIR [Reeves 3805]. SWRS [Elliot s.n.].

**Phaseolus parvulus** Greene


Chiricahua Mt.: Morse Canyon campground; Wilderness Area; Barfoot Park. Also Rincon Mt., Santa Catalina Mt., Santa Rita Mt., Huachuca Mt., White Mt., Sierra de los Ajos. Apache, Cochise, Santa Cruz, and Pima counties. Southwestern New Mexico and southern Arizona. Sonora, Mexico. Apachean.


**Phaseolus ritensis** M.E. Jones

Bean


Chiricahua Mt.: Chiricahua Nat. Mon. in Pinery Canyon. Also Rincon Mt., Sierra Ancha, Santa Catalina Mt., White Mt., Pinaleño Mt. Graham, Cochise, Santa Cruz, and Pima counties. Southern Arizona and Mexico. Apachean.

Exsicc.: CHIR [Clark 8377].
Prospis glandulosa Torr. var. torreyana (L. Benson) M.C. Johnston

Prospis juliflora (Sw.) DC. var. torreyana L. Benson, P. odorata Torr. and Frém.

Honey mesquite

Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site along trail, among ruins, Siphon Canyon; Portal to Paradise road; San Simon Cienega. Also Huachuca Mts., Dos Cabezas. Mts., Mule Mts., Finaleño Mts., Santa Catalina Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Cochcinno County (Little Colorado River, bottom of the Grand Canyon) to Mohave County, southward to Cochise, Santa Cruz, Pima, and Yuma counties. Southern Kansas to southeastern California and Mexico; West Indies. Southwestern.

The foliage, particularly the pods, are eaten by livestock. The wood is used for fence posts, and the heartwood for furniture. When cultivated crops failed, the Indians subsisted mainly upon mesquite beans. Pinole, a meal made from pods, prepared in the form of cakes and in other ways, was a staple food with the Pimas. Fermented pinole was an intoxicating drink. The gum that exudes from the bark was used for candy, and as a black dye. Inner bark was used for baskets and fabrics, as well as medicine. Bees obtain excellent honey from the flowers. Hastings and Turner (1965) discuss the role of cattle grazing spread of this species.

Exsicc.: CHIR [Clark 8219, Reeves 3248, 3397, 3720]. SWRS [Pough 1962-10].

Prospis velutina Woot.

Neltuma velutina (Woot.) Britt. and Rose, Prospis articulata S. Wats., P. chilensis (Molina) Stuntz var. velutina (Woot.) Standl., P. juliflora auct. pro parte non (Sw.) DC., P. juliflora (Sw.) DC. var. articulata (S. Wats.) Wiggins, P. juliflora (Sw.) DC. var. velutina (Woot.) Sarg.

Velvet mesquite

Chiricahua Mts.: Fort Bowie Nat. Historic Site in Siphon Canyon; San Simon Valley just beyond Portal. Also Rincon Mts., Finaleño Mts., Sierra Ancha. Cochcinno County to Mohave County, southward to Cochise, Santa Cruz, Pima, and Yuma counties. Southern Kansas to southeastern California and Mexico; West Indies. Southwestern, Latin American.

The foliage, particularly the pods, are eaten by livestock. Except for *Oeneya,* mesquite is the best firewood from the semidesert. Used for fenceposts and furniture. This plant has been a mainstay of subsistence for the Southwest aborigines. When cultivated crops failed, the Indians subsisted mainly upon mesquite beans. Pinole, prepared from the pods in the form of cakes and other ways, was a staple food for the Pimas. Fermented pinole was an intoxicating drink. The gum that exudes from the bark was used for candy, to mend pottery, and as a black dye. Inner bark was used for baskets and fabrics, as well as medicine. Bees obtain excellent honey from the flowers.

Exsicc.: FOBO [MHoy 381]. SWRS [SWRS 1959-512].

Psoralidium tenuiflorum (Pursh) Rydb.

Psoralea floribunda Nutt. ex Torr. and Gray, P. obtusifolia Torr. and Gray, P. tenuifolia Pursh,


Scrub-pea, scurry pea


Poisonous to stock, used by Indians as a fish poison. Marsh (1924).

Exsicc.: CHIR [Clark 8236, Reeves 3248, 3397, 3720]. SWRS [Pough 1962-10].

Rhynchosia senna Gillies ex Hook. var. texana (Torr. and Gray) M.C. Johnston

*Rhynchosia senna* Gillies ex Hook. var. *angustifolia* (Gray) Grear, *R. texana* Torr. and Gray

Rosary-bean


Robinia neomexicana Gray var. *neomexicana* *Robinea luxurians* (Dieck) Schneid. *ex* Tarouca and Schneid., R. *neomexicana* var. *luxurians* Dieck, R. *neomexicana subvelutina* (Ryd.) Kearney and Peebles

New Mexico locust

Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site in lower Cut Off Canyon; Southwestern Research Station; West Turkey Creek; Rucker Canyon; Wilderness Area; Barfoot Park. Also Huachuca Mts., Rincon Mts., Finaleño Mts., Animas Mts., Sierra Ancha, Santa Catalina Mts., Sierra de los Ajos. Navajo, Coconino, and Mohave counties, south to Greenlee, Cochise, Santa Cruz, and Pima counties. Southern Colorado to southern Nevada, western Texas, New Mexico, Arizona, and northern Mexico. Rocky Mountain.

A Hopi Indian remedy for rheumatism. Important browse for domestic stock. Food for deer, Gambel's quail, mountain
sheep, chipmunk, and porcupine. Has been used for erosion control.

**Senna bauhinioides** (Gray) Irwin and Barney
*Cassia bauhinioides* Gray, *Cassia bauhinioides* var. *arizonica* B.L. Robins. ex J.F. Macbr.

**Senna**


Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Finery Canyon; Fort Bowie Nat. Historic Site north of Overlook; San Simón Valley, 3 mi. east of Paradise. Also Pinaleño Ms., Sierra Ancha, Mule Ms. Coconino, Mohave, Yavapai, and Greenlee counties to Cochise, Santa Cruz, and Pima counties. Texas to Arizona and Mexico. Madrean.


**Senna covesii** (Gray) Irwin and Barney
*Cassia covesii* Gray

Desert *senna*


Chiricahua Ms.: Fort Bowie Nat. Historic Site. Also Rincon Ms., Santa Catalina Ms., Pinaleño Ms. Coconino, Mohave, Yavapai, and Greenlee counties to Cochise, Santa Cruz, and Pima counties. New Mexico to Nevada, Arizona, California, and northwestern Mexico. Sonoran.

**Senna lindheimeriana** (Scheele) Irwin and Barney
*Cassia lindheimeriana* Scheele


Chiricahua Ms.: near Onion Saddle. Also Huachuca Ms., Mule Ms. Cochise County. Texas to southeastern Arizona and northern Mexico. Madrean.

Exsicc.: SWRS [SWRS 1958-233].

**Sophora nuttalliana** B.L. Turner
*Sophora sericea* Nutt., *Vexibia nuttalliana* (B.L. Turner) W.A. Weber

[4,000] - 5,000 [7,000], [Apr] May - [Jun]. Perennial deciduous forb, scapose or leafy-stemmed hemichamaephyte; microphyll, orthophyll. Along wash, sometimes in cultivated land.

Chiricahua Ms.: Round Valley, 5 mi. north of Portal; along Portal to Paradise road. Also Animas Ms. Apache County to Yavapai and eastern Mohave counties, also in Cochise and Pima counties. South Dakota and Wyoming to Texas, southern Utah, and Arizona. Rocky Mountain.

Exsicc.: SWRS [Mousat s.n., Walker s.n.]

**Tephrosia tenella** Gray


Chiricahua Ms.: Chiricahua Nat. Mon. Also Rincon Ms., Sunizona near junction highway 181 and 666. Canelo Hills.

Final, Cochise, Santa Cruz, and Pima counties. Texas to southern Arizona and northern Mexico. Chihuahuan.

Exsicc.: CHIR [Moir 528, Reeves 1247]. SWRS [Pough 1961-161].

**Thermopsis rhombifolia** (Nutt. ex Pursh) Nutt. ex Richards. var. *montana* (Nutt.) Isely
*Thermopsis montana* Nutt., *T. pinetorum* Greene

Golden-pea

6,000 - 9,790 ft. [Apr] May - Jul. Perennial deciduous forb, scapose or leafy-stemmed hemichamaephyte. Uncommon in sunny meadows at higher elevations but in mesic coniferous forests and deep canyon bottoms lower down.

Chiricahua Ms.: Chiricahua Nat. Mon.; Rhyolite Canyon 3/4 mi. east of junction with Sarah Deming Canyon; Onion Saddle; Buckeye Canyon; Long Park; Barfoot Park; northwest of Paradise; Wilderness Area. Also Pinaleño Ms., Sierra Ancha, Santa Catalina Ms., Sierra de los Ajos. Apache County to Coconino County, south to Cochise, Gila, and Yavapai counties. Colorado, Utah, New Mexico, and Arizona. Sonora, Mexico. Rocky Mountain.

Seeds may be poisonous.

Exsicc.: CHIR [Dole 93]. SWRS [SWRS 1959-56, Roth s.n.]. CHWA [Leithliter 331]. ARIZ [Blumer 1590, s.n., Moeller 11135].

**Trifolium pinetorum** Greene

Clove


Chiricahua Ms.: Rustler Park; between Rustler Park and Long Park; Wilderness Area; Centella Point. Also Rincon Ms., Pinaleño Ms., Santa Catalina Ms., Sierra de los Ajos. Coconino County, mountains of Apache, Graham, Cochise, Santa Cruz, and Pima counties. New Mexico and Arizona. Sonora, Mexico. Southwestern.


**Trifolium repens** L.

White clover


Chiricahua Ms.: Chiricahua Nat. Mon. in Lower Bonita Canyon; Southwestern Research Station near Lakeside. Navajo County, Coconino County, Mohave County, Yavapai County, and Cochise County. Alien species introduced from Europe. Temperate. Introduced.

Nutritious forage that withstands trampling well. Valuable bee plant. Often used in lawn mixtures. Clovers have been cultivated since the 16th century. Host for nitrogen-fixing bacteria. Seed remains viable for 9 years or more.

Exsicc.: CHIR [Clark 9027, Reeves 1396]. SWRS [Barnes s.n.].
Trifolium variegatum Nutt.

Trifolium appendiculatum Loja., T. geminiflorum Greene, T. melanthium Hook. and Arn., T. trilobatum Jepson, T. variegatum var. major Loja., T. variegatum melanthium (Hook. and Arn.) Greene, T. variegatum var. rostratum (Greene) C.L. Hitchc., T. variegatum var. trilobatum (Jepson) McDermott


Chiricahua Mts.: Wilderness Area. Also Rincon Mts., Santa Rita Mts., Sierra de los Ajos. Near Kirkland, Yavapai County, and Pima County. Montana to British Columbia, south to Arizona and Baja California. Western.

Exsicc.: CHWA [Leithliter 854].

Vicia americana Muhl. ex Willd. ssp. americana

Vicia americana ssp. oreogana (Nutt.) Abrams, V. americana var. oreogana (Nutt.) A. Nels., V. americana var. truncata (Nutt.) Brewer, V. americana var. villosa (Kellogg) F.J. Herm., V. californica Greene, V. californica var. madrensis Jepson, V. oreogana Nutt., V. sparsifolia Nutt. ex Torr. and Gray var. truncata (Nutt.) S. Wats. Vetch


Pinus aristata, Pseudotsuga menziesii

Chiricahua Mts.: Chiricahua Nat. Mon. on Sugarloaf Mountain; Greenhouse Trail; south slope Fys Peak near summit; between Rustler Park and Long Park; Wilderness Area; Crest Trail; Centella Point; Cave Creek, John Hands; Snow Shed trail. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts. Apache County to Cochise County, south to Cochise, Santa Cruz, and Pima counties. Most of southern Canada to Virginia, Kansas, New Mexico, California. Temperate.


Vicia leucophaea Greene


Chiricahua Mts.: Wilderness Area; Greenhouse Trail; Barfoot Park. Also Animas Mts., Huachuca Mts. Southern Apache County to Cochise, Santa Cruz, and Pima counties. Western New Mexico and southeastern Arizona. Madrean.

Exsicc.: CHWA [Leithliter 159]. Repository unknown [Blumer 1358].

Vicia ludoviciana Nutt. ssp. ludoviciana

Vicia exigua Nutt., V. leavenworthii var. occidentalis Shinners, V. ludoviciana var. laxiflora Shinners, V. ludoviciana var. texana (Torr. and Gray) Shinners, V. producta Rydb., V. texana (Torr. and Gray) Small

[4,000] - 5,100 ft. [Mar Apr - May], Winter-annual forb, spreading therophyte. Uncommon on gravelly slopes and streambeds, cool moist slopes, among bushes, in canyons.


Exsicc.: FOBO [M Hoy 360]. SWRS [Mouat s.n.].

Vicia pulchella Kunth

Vetch


Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site; East Turkey Creek; below Onion Saddle; Wilderness Area; Barfoot Park; Centrella Point. Also Rincon Mts., Pinaleño Mts., Santa Catalina Mts., Animas Mts. Sierra de los Ajos. Apache County to Coconino County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and throughout Mexico. Madrean.

Exsicc.: CHIR [Borell 2, Reeves 4405]. SWRS [Walker s.n.]. CHWA [125, 158, 295, 421, 543]. Repository unknown [Blumer 1350].

FAGACEAE—Beech Family.

A family of deciduous or evergreen monoeocious trees and shrubs. Mostly of temperate and subtropical regions of the northern hemisphere but with one genus in the Antarctic regions and one that is pantropical. Quercus, the largest genus, has about 300 species, 60 of which are found in the United States.

Quercus arizonica Sarg.

Arizona white oak, gray oak, shin oak, encina blanca


Chiricahua Mts.: Fort Bowie Nat. Historic Site along Cut Off Canyon trail, Apache Spring Wash; Chiricahua Nat. Mon. in Rhodolite Canyon, Bonita Canyon, Jesse James Canyon, Pickett Park; Whetstain Canyon; below Onion Saddle; Portal/Paradise road; Tex Canyon; John Long Canyon; Price Canyon; East Turkey Creek; West Turkey Creek; Cave Creek, Rucker Canyon; Barfoot Park. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Mule Mts., Santa Catalina Mts., Pinaleño Mts., Animas Mts., and Dragoon Mts. Sierra de los Ajos. From Apache County and Coconino County to Cochise and Santa Cruz counties. Texas to New Mexico and Arizona, southward into Mexico. Madrean.

Fence posts, browse. Eaten by porcupine, deer, Viosca's pigeon, and thick-billed parrots. Landrum (1994) submerges Quercus arizonica into Q. grisea in the flora of Arizona to be published.

Exsicc.: CHIR [Clark 8085; Lehto 3342a; Reeves 1283, 1338a, 2260, 3165, 3580]. SWRS [Reese 24; Reeves 1958-46]. CHWA [Leithliter 634].
**Quercus chrysolepis** Liebm.

**Canyon Oak**


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; Fort Bowie Nat. Historic Site at Overlook. Also Sierra Ancha, Rincon Mts., Santa Catalina Mts., Huachuca Mts. Cocopino and Mohave County to Greenlee, Cochise, and Pima counties. Southwestern New Mexico, Arizona, California; southward into Mexico. Southwestern.

Furniture, agricultural instruments, pack saddles, and fuel. Name refers to the golden-yellow acorn-cup scales. The identity of this species is presently debated by taxonomists.

Exsic.: CHIR [Clark 8177, Reeves 1360, 2838, 3123, Roseberry 4]. CHWA [Leithliter 372, 722, 769]. ARIZ [Blumer 2310; Darow s.n.].

**Quercus emoryi** Torr.

**Emory oak**, western black oak, blackjack oak, bellota.


Chiricahua Mts.: Chiricahua Nat. Mon. in Pic kotlin Park, Rhyolite Canyon, head of Hunt Canyon and Sarah Deming Canyon, Jesse James Canyon, Pic Kotlin Park; Greenhouse Canyon; West Turkey Creek; Fort Bowie Nat. Historic Site on hill south of first fort, along Apache Pass Road; Portal; West Turkey Creek; Cave Creek; west Long Canyon; Portal to Paradise road. Also Huachuca Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Chisos, Davis, and Limpa mountains of Texas, and in southern New Mexico and Arizona. Mexico in Nuevo Leon, Chihuahua, and Sonora. Madrean.

Leaves eaten by mule deer. Acorns eaten by Gambel's, Mears', scaled quail, many rodents, Indian and Mexican people. There is a specimen, noteworthy because of its large size, immediately west of John Ringo's grave at the Sanders Ranch, West Turkey Creek.

Exsic.: CHIR [Clark 8135, Reeves 2951, 3138]. SWRS [SWRS 1958-61, Reese 14, Wittmann 79].

**Quercus gambelli** Nutt. var. gambelli


Gambel oak, Rocky Mountain white oak, white oak

[4,000] 5,200 - 9,790 [ft. Jul]. Broadleaf deciduous tree, microphanerophyte; microphyll, orthophyll. Locally common on dry conifer clad slopes at high elevations, requiring more mesic habitats at lower elevations until it becomes riparian at lower limit of its elevational distribution. *Pseudotsuga menziesii*, *Pinus arizonica*, *P. engelmannii*.


Wildlife, fuel, and posts. Leaves mixed with conifers provide habitat for *Spiranthes*. *Q. gambelli* is proposed as one of the most northerly ranging Madrean species (Neilson and Wullstein 1983).


**Quercus grisea** Liebm.

Gray oak, shin oak, encina blanca


**Quercus hypoleucoides** A. Camus

*Quercus hypoleuca* Englert. non Miq.

**Silverleaf oak**


Food for Apache Squirrel and thick-billed parrot. Crown sprouts vigorously following fire.

Exsic.: CHIR [Clark 8086, Dodd 3, Reeves 1288, 1342, 1867, 2824, 3587]. SWRS [Wittmann 61]. CHWA [Leithliter 39, 492, 690].

**Quercus oblongifolia** Torr.

**Encino azul**


Exsic.: ARIZ [Blumer 1297, 1955a].
Quercus pungens Liebm.  
Sandpaper oak  
Fort Bowie Nat. Historic Site is apparently one of the few localities for this species in the Chiricahua Mountains.  
Exsic.: SWRS [Roth s.n.].

Quercus rugosa Née  
Quercus diversicolor Trel., Q. reticulata Humb. and Bonpl.  
Net-leaf oak  
Chiricahua Mts.: Chiricahua Nat. Mon. at head of Natural Bridges Trail, Hunt Canyon, Rhyolite Canyon, Sarah Deming Canyon. Bonita Canyon; Fort Bowie Nat. Historic Site in upper South Canyon; West Turkey Creek; Greenhouse Canyon; Pine Canyon; Wilderness Area; Cave Creek; Shake Gulch; near Onion Saddle; Pine Canyon; Wood Canyon Park. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Santa Catalina Mts., Mule Mts., Animas Mts., Santa Rita Mts. Southern Coconino County to Cochise, Santa Cruz, and Pima counties. Western Texas to central and southern Arizona and Mexico. Madrean.  
Cattle eat the young leaves. Acorns are food for thick-billed parrots.  

Quercus toumeyi Sarg.  
Toumey oak  
Exsic.: CHIR [Reeves 2357, 3053, 3500, 3594, 3935]. SWRS [SWRS 1960-263]. ARIZ [Taylor s.n.; Blumer 1280, 1924; Toumey s.n.]. SWRS [58-57; Clark 8665].

Quercus turbinella Greene  
Quercus sub hurdinella Trel.  
Shrub live oak, turbinella oak  
Fort Bowie Nat. Historic Site is apparently one of the few localities for this species in the Chiricahua Mountains.  
Exsic.: SWRS [Roth s.n.].

FOUQUIERIACEAE—Ocotillo Family.  
A family of shrubs or small trees, armed with stout pelticulate spines. A unigeneric family of seven species confined to the deserts of the southwest.

Fouquieria splendens Engelm.  
Ocotillo  
5,000 - 5,500 [6,500] ft. Apr - May. Spineless deciduous shrub, microphanerophyte; nanophyll, orthophyll. Common on rocky and gravelly soil on bajadas and flats.  
Used for jacal construction and for ribs in Indian and Spanish adobe buildings. The Coahuila Indians of southern California are said to eat the flowers and capsules. Belt dressing of good quality can be manufactured from the wax that coats the stems. The Apache Indians relieve fatigue by bathing in a decoction of the roots and also apply the powdered roots to painful swellings.  
Exsic.: CHIR [Clark 8161, Reeves 2881, 3431]. FOBO [MHoy 214].

FUMARIACEAE—Duchman's Breeches Family.  
Herbaceous plants with brittle stems and thin clear juice. Sixteen genera and 450 species are chiefly distributed in the north temperate Old World. Only 6 genera and 32 species are native to North America. The family is of little economic value; a few are cultivated as ornamentals.

Corydalis aurea Willd ssp. occidentalis (Engelm.) G.B. Owenbey  
Golden corydalis  
Exsic.: CHIR [Reeves 2367, 2402]. SWRS [SWRS 1959-11].
GARRYACEAE—Silk Tassel Family.
A small unigeneric family of dioecious evergreen shrubs, or less commonly, trees. There are about 15 species extending from California through the southwestern states and into Mexico and the West Indies.

Garrya flavescent S. Wats.
Quinine bush
Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Sierra Ancha. Coconino, Mohave, Gila, Yavapai, Cochise, and Yuma counties. Western Texas, Arizona, southern Utah and Nevada, California, and northern Mexico. Southwestern. Exsicc.: FBO [MHoy s.n.].

Garrya wrightii Torr.
Silk-tassel, coffeeberry-bush, quinine-bush
Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon, Fickett Park; Pine Canyon; West Turkey Creek Ranger Station; Fort Bowie Nat. Historic Site on hill north of first fort; South Fork Cave Creek. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Cochino.n, Greenlee, Gila, Gila, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Madrean. Rubber in small quantity has been extracted from this shrub. This species vigorously rootsprouts following fire. Exsicc.: CHIR [Clark 8153, Reeves 1322, 1904, 3423, 3742, 3975]. FBO [MHoy 52]. SWRS [1959-185].

GENTIANACEAE—Gentian Family.
A family of herbs, rarely subshrubs or shrubs. Plants sometimes saprophytic. About 70 genera and about 800 species, of world-wide distribution and most abundant in temperate regions.

Centaurium calycosum (Buckl.) Fern. var. calycosum
Centaurium calycosum var. breviflorum Shinners, Eryhtraea calycosa Buckl. var. arizonic.a Gray Canchlaguia

Frasera speciosa Doug.l. ex Griseb. Frasera angustifolia (Ryd.) Rydb., F. macrophylla Greene, F. speciosa var. angustifolia Rydb., F. speciosa var. stenosepala Rydb., F. stenosepala (Ryd.) Rydb., Swertia radiata (Kellogg) Kunzle, S. radiata var. macrophylla (Greene) St. John, Tessarantarium angustifolium (Ryd.) Rydb., T. macrophyllum (Greene) Rydb. Elkweed, green-gentian
Chiricahua Mts.: Chiricahua Nat. Mon.; North (Fork) Pinery Canyon; Bootlegger Saddle; 1 mi. east of Cima Cabin along trail; Rustler Park. Also Pinaleño Mts., Huachuca Mts., Rincon Mts., Santa Catalina Mts. Apache County to Coconino County, south to Cochise and Pima counties. South Dakota to Washington, south to New Mexico, Arizona, California, and northeastern Mexico. Western. Exsicc.: CHIR [Clark 8374]. SWRS [Roth s.n., Bertrand s.n.], CHWA [602]. ARIZ [Blumer 28 1619; Shreve 5291; Hope and Duncan 9990; Loomis et al. 2215; Johnson s.n.; Gold s.n., 3568].

Gentianella microcalyx (J.G. Lemmon) J. Gillett
Gentiana microcalyx J.G. Lemmon Gentian
Chiricahua Mts.: Chiricahua Nat. Mon.; upper Echo and far Upper Jesse James canyons; South Fork Cave Creek along trail to Maple Camp; Wilderness Area. Also Rincon Mts., Huachuca Mts., Santa Rita Mts., Santa Catalina Mts., Sierra de los Ajos. Cochise, Santa Cruz, and Pima counties. Sonora, Mexico. Madrean. This plant, described as new to science, was collected by J.C. Lemmon and wife circa 1881, in the Chiricahua Mts. Exsicc.: CHIR [Reeves 3606, 4286]. SWRS [Walker s.n.].

Gentianella wislizenii (Engelm.) J. Gillett
Gentiana wislizenii Engelm.
Chiricahua Mts.: Wilderness Area, Flys Peak; Centella Point; Barfoot Park; Barfoot Peak; Rustler Park; Round Park. Also White Mts. Apache and Cochise counties. Southwestern Arizona and northern Mexico. Madrean. Exsicc.: SWRS [Cummins s.n.]. CHWA [Leithliter 677, 733]. ARIZ [Blumer 177, 1414, Barr 65-424, Van Devender et al. 89-311, Fishbein 481, Daniel 1847].
Halenia recurva (Sm.) Allen
Swertia recurva Sm.

Spur gentian


Chiricahua Ms.: Centella Point; Fly Peak Trail; Fly Park; Morse Canyon; Long Park; Barfoot Park; Rustler Park. Also Pinaleño Ms., Mogollon Ms. Sierra Madre Occidental, Sierra Madre Oriental (Cochisilla). Southern Apache and Coconino counties to eastern Cochise County. Arizona and northern Mexico. Madrean.

Exsic.: ARIZ [Starr 127, Van Devender s.n., Burgess 4650, Barr 64-487, Blumer 1359, Darrow et al. 1232, Lehto 8893]. SWRS [Cummings s.n.]. CHWA [Leithliter 535, 805, 809].

GERANIACEAE—Geranium Family.
A family of mostly herbaceous plants, sometimes suffrutescent or shrubby, the stems often fleshy. About 11 genera and about 850 species widely distributed over temperate and subtropical regions of the northern and southern hemispheres.

Erodium cicutarium (L.) L’Her. ssp. jacquinianum (Fischer, C.A. Mey. and Avé-Lall.) Brig.

*Geranium cicutarium* L. *G. aethiopicum* Lam., *Erodium aethiopicum* Brumbhard and Thell. Afilierillo, red-stemmed filaree, stork’s bill


Chiricahua Ms.: Chiricahua Nat. Mon. in Lower Bonita Canyon, Bonita Park and upper Rhyolite Canyon. Also Sierra Ancha, Santa Catalina Ms., Pinaleno Ms. Apache County to Mohave County, south to Pima and Cochise counties. New Mexico and Arizona. Madrean.

Exsic.: CHIR [Reeves 1296, 1501, 3627].

*Geranium caespitosum* James var. fremontii (Torr. ex Gray) Dorn

*Geranium fremontii* Torr. ex Gray, *G. toquimense* A. and N. Holmgren


Chiricahua distribution fide Russell (1982).

Geranium richardsonii Fisch. and Trautv.

Cranesbill


Chiricahua Ms.: Rustler Park; Long Park; Barfoot Park; Wilderness Area, along Crest Trail; Bootlegger Trail; Centella Point. Also Pinaleño Ms., Sierra Ancha, Santa Catalina Ms., Rinceño Ms., Sierra de los Ajos. Apache County to Coconino County, south to Cochise and Pima counties. South Dakota to British Columbia, southward through New Mexico, Arizona, southern California into Mexico beyond the Rio Mayo. Western.

Exsic.: SWRS [Roth s.n., SWRS 1959-775, Ordway s.n.].

CHWA [Leithliter 95, 155, 531, 542, 595, 613, 650, 838].
GROSSULARIACEAE
A monogenic family (Ribes) of about 150 species distributed in the temperate zone of the northern hemisphere. Split out of Saxifragaceae, a taxonomically difficult family, by Bessey. Some authors do not recognize the Grossulariaceae but here we follow the practice by ARIZ.

Ribes pinetorum Greene
Orange gooseberry


HALORAGIDACEAE—Water Milfoil Family.
A family of 8 genera and about 100 species. Diverse appearing aquatic or terrestrial herbs, rarely suffrutescent. Widely distributed on all continents.

Parrot-feather
6,000 ft. Perennial deciduous forb; microphyll, orthophyll. Wetlands and ponds.


Myriophyllum sibiricum Komarov
Myriophyllum exalbescens Fern., M. exalbescens var. magdalenense (Fern.) A. Löve, M. magdalenense Fern., M. spicatum L. ssp. exalbescens (Fern.) Hultén, M. spicatum var. capilaceum Lange, M. spicatum ssp. exalbescens (Fern.) Hultén, M. spicatum ssp. squamosum Laestad. ex Hartman, M. spicatum var. capilaceum Lange.
Parrot feather, water milfoil

Chiricahua Mts., Arizona. Introduced. Common in wetlands in the temperate zone of the northern hemisphere. Split out of Saxifragaceae, a taxonomically difficult family, by Bessey. Some authors do not recognize the Hydrangeaceae but here we follow the practice by Kartesz (1994) and ARIZ.

Fendlerella utahensis (S. Wats.) Keller var. cymosa (Greene ex Woot. and Standl.) Kearney and Peebles


Fendlerella rupicola Gray
Fendler bush


PHILADELPHACEAE—Mock-orange Family.

Philadelphus argenteus Rydb.
Philadelphus microphyllus (Gray ssp. argenteus (Ryd.) C.L. Hitchc., P. microphyllus var. argenteus (Rydby.) Kearney and Peebles


Exsicc.: ARIZ [Reeves 928; Taylor and Cassidy s.n., O.M. Clark 1876, Goodyood s.n.].

Philadelphus madrensis Hemsl.
Mock-orange


The Southwestern Research Station holdings may be a mixed collection.

Exsicc.: CHIR [Clark 8176, Reeves 980, 3404, 3595, 3640, 3674, 3931]. SWRS [Rahm s.n., s.s. s.n.]. CHWA [Leithliter 184, 394, 538, 724, 847].

HYDRANGEACEAE—Hydrangea Family.
Split out of Saxifragaceae, a taxonomically difficult family, by Bessey. Some authors do not recognize the Hydrangeaceae but here we follow the practice by Kartesz (1994) and ARIZ.
Philadelphus microphyllus Gray
*Philadelphus argenteus* Rydb., *P. microphyllus* var. *argenteus* (Rydb.) Kearney and Peebles

Mock-orange


- Chiricahua Mts.: above Rustler Park; Rucker Canyon.
- Chiricahua Nat. Mon. on Sugarloaf Mtn., Sara Deming Canyon, Rhyolite Canyon; near Paradise; Mineral Peak; Wilderness Area; Barfoot Park; Tub Spring; Flys Peak. Also Rincon Mts., Mt. Sierra Ancha, Santa Catalina Mts., Baboquivari Mts., Mule Mts., Peloncillo Mts., Huachuca Mts., Animas Mts., Santa Rita Mts. Apache County to Coconino County, south to Cochise, Santa Cruz, and Pima counties. Southwestern Wyoming to western Texas, southeastern California, and northern Mexico. Rocky Mountain.

Exsicc.: ARIZ [Reeves 928, Taylor and Cassidy s.n., Clark 8148, 8176, Goodding s.n., Henry 41, Kaiser 49-188, Mason et al. 2685, Spaulding 75-10-33, McCormick 58-74, 58-156].

**HYDROPHYLLACEAE—Waterleaf Family.**

A family mostly of annual or perennial herbs, often scabrid hairy, glandular, or bristly. A widely distributed family occurring on all continents except Australia. It is especially abundant in western North America and extends south to the Straits of Magellan. It is represented by 20 genera and 265 species with 15 genera in the United States, most of them in the west.

Nama dichotomum (Ruiz and Pavón) Choisy


Exsicc.: CHIR [Moir 454].

Nama hispidum Gray


Exsicc.: CHIR [Clark 8189]. SWRS [Roth s.n.]

Phacelia arizonica Gray
*Phacelia popelii* Torr. and Gray var. *arizonica* (Gray) J. Voss

[1,500] 5,000 - 6,000 ft. [Feb] Mar - Apr [May]. Winter annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Uncommon on grassy plains and mesas, south-facing slopes.


Exsicc.: CHIR [Reeves 2539, 3523, 3822]. SWRS [Walker s.n.]. FOBO [MHoy 364].

Phacelia coerulea Greene
*Phacelia intermedia* Woot. *pro parte*


- Chiricahua Mts.: Round Valley 6 mi. north of Portal. Also Huachuca Mts., Rincon Mts., Animas Mts. Coconino and Mohave counties to Greenlee, Graham, Santa Cruz, Pima and Yuma counties. Western Texas to southern Nevada, southeastern California, and northern Mexico. Southwestern, Californian.

Exsicc.: SWRS [Mouat s.n.].

Phacelia congesta Hook.

*Phacelia congesta* var. *dissecta* Gray

5,100 ft. [Apr] Apr - [Jun]. Winter-annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll.


Exsicc.: FOBO [MHoy 349].

Phacelia crenulata Torr. *ex* S. Wats.

5,100 ft. [Feb] Apr - [Jun]. Winter-annual forb, semirosette therophyte. On sunny plains, mesas, and foothills.

- Chiricahua Mts.: Fort Bowie Nat. Historic Site on hill east of trail. Also Santa Catalina Mts. Throughout the state except in the extreme northeastern portion. Southern Utah to New Mexico, Arizona, southeastern California, and Baja California. Southwestern.

Exsicc.: SWRS [Roth s.n.]. FOBO [MHoy 100].

Phacelia egena (Greene *ex* Brand) Greene *ex* J.T. Howell

*Phacelia magellanica* (Lam.) Coville *pro parte*


- Chiricahua Mts.: Wilderness Area, along Crest Trail; Wian Falls. Also Pinalesito Mts., Sierra Ancha, Rincon Mts., Santa Catalina Mts., Huachuca Mts., Sierra de los Ajos. Apache County to Coconino County, south to Cochise, and Pima counties. Alberta and British Columbia to New Mexico, Arizona, and California; South America. Western, Latin American.

Exsicc.: SWRS [Roth s.n., Wittmann 98]. CHWA [Leithliter 627A].

Phacelia heterophylla Pursh


- Chiricahua Mts.: Barfoot Peak, upper Pine Canyon. Also Pinalesito Mts., Animas Mts. Alberta and British Columbia south to New Mexico, Arizona, California; South America. Western.

Exsicc.: NMC [Moeller s.n.; Blumer 1471].
IRIDACEAE—Iris Family.
A family of perennial herbs or very rarely subshrubs, the roots produced from rhizomes, bulbs, or corms. About 58 genera and about 1,500 species, distributed over much of the earth except in coldest regions; the center of distribution is Africa. About 33 genera are restricted to the Old World, 14 to the New World, and 2 are disjunct, each occurring in Chile and Australasia. Economic usefulness is mostly as ornamentals but also as a source of orris root used to flavor toothpaste and for saffron dye.

Iris missouriensis Nutt.
Rocky Mountain iris
[6,000] 8,300 - 9,600 ft. May - Jun [Sep]. Perennial deciduous forb, bulb geophyte; microphyll, orthophyll. Common in wet meadows, swales, and lower slopes; often extensive in disturbed and over-grazed habitats. *Pinus engelmannii, P. arizonica, Agrostis scabra, Mukhlenbergia filiformis, Poa fendleriana, P. pratensis, Delphinium andesico/a, Senecio pelogonus arizonicus* Sierra California. Western.

Chiricahua Mts.: Rustler Park; Greenhouse Trail; Barfoot Park; Pine Canyon; Wilderness Area; Long Park; Round Park; Cima Park; Castella Point; Flys Peak, Bootlegger Saddle. Also Sierra Ancha, Huschua Mts., Sierra de los Ajos. Apache, Navajo, and Coconino counties, south to Cochise County. North Dakota to British Columbia, south to New Mexico, Arizona, and California. Western.

Type collected in the Chiricahua Mts. by J.C. Blumer.
Exsicc.: SWS [Ordway 95, Abbott s.n.]. CPSU [Bennett s.n.]. ARIZ [Blumer 1556].

Sisyrinchium arizonicum Rothrock
*Oreolirion arizonicum* (Rothrock) Bickn.
[6,000] 8,000 - 9,500 ft. [Jul] - [Aug]. Perennial deciduous forb, scape or leafy-stemmed hemicyrptophyte; microphyll, orthophyll. Dry portions of meadows, in coniferous woods. *Iris missouriensis*.

Exsicc.: SWS [Walker s.n.].

Sisyrinchium longipes (Bickn.) Kearney and Peebles
Yellow-eyed grass
Exsicc.: CHWA [Leithliter 185, 553].

JUGLANDACEAE—Walnut Family.
A family of deciduous monoeocious trees or rarely shrubs. About 6 or 7 genera and about 60 species, mostly of the north temperate zone but with a distributional zone extending through Central America along the Andes to Argentina and another from temperate Asia to Java and New Guinea. *Juglans* is the only genus indigenous to western North America. This family is of major importance for lumber (walnut, hickory) and nuts (walnut, hickory, pecan).

Juglans major (Torr.) Heller
Arizona walnut
Chiricahua Mts.: Chiricahua Nat. Mon.; Lower Bonita Canyon; Fort Bowie Nat. Historic Site in Siphon Canyon; West Turkey Creek; Pine Canyon, East Turkey Creek, Cave Creek, Portal to Paradise road; junction of Cave Creek - Portal - San Simon roads.; Paradise; lower White Tail Canyon. Also Huachuca Mts., Rincon Mts., Pinaleo Mts., Mule Mts., Animals Mts., Sierra Ancha, Santa Catalina Mts., Sierra de los Ajos. New Mexico, Arizona, and northern Mexico. Madrean.
Shade tree. Nuts eaten by Indians of Arizona and New Mexico. Wood is durable but little used. Other species have been employed medicinally and as insecticides, and it is probable that the native species has similar properties. Kearney and Peebles question the validity of this species since it freely hybridizes.
Exsicc.: CHIR [Clark 8162, Pinkava 2336-5, Reeves 1392, 2283]. SWRS [SWRS 1959-221].

JUNCACEAE—Rush Family.
A family of rushlike or grasslike perennial or annual herbs (or rarely shrubs) often with hairy roots from an erect or horizontal rhizome. About 8 genera and about 315 species largely of temperate regions of the southern hemisphere. This is a very ancient family, reportedly extending through the Tertiary and back into the Cretaceous. The mountains of Eurasia, or Old World tropics, or Antarctica are thought by various experts to be the center of origin. The family is closely allied to the Liliaceae.

Juncus balticus Willd. var. montanus Engelm.
Rush, wire rush
Exsicc.: CHIR [Reeves 3278]. SWRS [Roth s.n.].

Juncus drummondii E. Mey.
Rush
Exsicc.: POBO [MHiy 368].
Juncus interior Wieg.

Rush


Exsicc.: CHIR [Clark 8204, 8296, Reeves 1376, 3099, 3592].

Juncus longistylis Torr.

Rush


Exsicc.: CHIR [Clark 8273, Reeves 1395, 3476].

Juncus marginatus Rostk. var. setosus Coville

Juncus setosus (Coville) Small

Rush


Exsicc.: CHWA [Leithliter 365].

Juncus mexicanus Willd. ex J.A. and J.H. Schultes

Juncus balticus Willd. var. mexicanus (Willd. ex J.A. and J.H. Schultes) Kunze

Rush


Exsicc.: CHIR [Reeves 1404, 2875A].

Juncus saximontanus A. Nels.


Rush


Exsicc.: CHIR [Clark 8272, Reeves 1887, 2856, 3475, 4379]. FOBO [MHoy 176]. SWRS [Walker s.n.].

Juncus tenuis Willd.

Juncus macer S.F. Gray, J. tenuis var. anethelius Wieg., J. tenuis var. multicorns E. Mey., J. tenuis var. williamsii Fern.

Rush


Chiricahua Mts.: Cave Creek Canyon above Herb Martyr; Chiricahua Nat. Mon. in Whistleitl Canyon. Also Huachuca Mts., Santa Ancha, Santa Catalina Mts., Pinaleño Mts., Coconino, Yavapai, Maricopa, Pinal, and Cochise counties. From Newfoundland to Washington, south to Mexico and California. Temperate.

Exsicc.: CHIR [Reeves 4380]. SWRS [Roth s.n.].

LAMIACEAE (LABIATAE)—Mint Family.

A family of predominantly annual or perennial herbs, sometimes shrubs, and rarely trees or lianas, herbaceous with aromatic oils; stems and twigs usually quadrangular. A large family of about 200 genera and 3,200 species of world-wide distribution but with center of distribution in the Mediterranean region where they form a dominant part of the vegetation. Economically important as spices (sage, rosemary, mint, marjoram, basil, thyme, savory) and essential oils.

Agastache breviflora (Gray) Epling

Giant-hyssop


Exsicc.: CHIR [Clark 8589, 8734, Reeves 983, 4245]. SWRS [SWRS 1959-696]. CHWA [Leithliter 180, 376, 505, 577].

Agastache pallidiflora (Heller) Rydb. ssp. neomexicana (Briq.) Lint and Epling var. harvardii (Gray) R.W. Sanders

Agastache breviflora (Gray) Epling var. harvardii (Gray) Shinners, A. pallidiflora ssp. harvardii (Gray) Lint and Epling

Giant hyssop

[7,000] - 8,300 [10,000] ft. Jun - Sep [Oct]. Perennial deciduous forb, scapose or leafy-stemmed hemicyrptophyte;
Hedeoma nana (Torr.) Briq. ssp. nana

Hedeoma nana ssp. typica W.S. Stewart, H. thymoides Gray

Mock-pennyroyal

[650] 5,000 - 5,400 [5,500] ft. [May - Sep] [Oct].


Chiricahua Ms.: Chiricahua Nat. Mon. at base of Garfield Peak; Fort Bowie Nat. Historic Site on hill east of trailer; slope off Paradise Road. Also Huachuca Ms., Rincon Ms., Santa Catalina Ms., Mule Ms., Animas Ms., Dos Cabezas. Coconino and Mohave counties to Cochise, Fima, and Yuma counties. Western Texas to southeastern California and Mexico.

Apachean.

Exsiccs.: CHIR [Reeves 4456]. Fobo [MHoy 155]. SWRS [Mosat s.n.]. NMC [Gooding s.n.].

Hedeoma oblongifolia (Gray) Heller

Hedeoma piperia Benth. var. oblongifolia Gray, H. thymoides Gray var. oblongifolia (Gray) Gray

Mock-pennyroyal

[2,000] 5,400 - 8,000 [8,000] ft. [Apr] Aug - [Sep] [Oct].

Perennial decidual forb, scapose or leafy-stemmed proto-chamaephyte. Uncommon in wooded canyons and slopes, dry uplands.

Chiricahua Ms.: Chiricahua Nat. Mon. Also Sierra Ancha, Santa Catalina Ms., Pinaleño Ms., Animas Ms. Coconino and Mohave counties to Greenlee, Cochise, and Pima counties. New Mexico, Arizona, and northern Mexico. Madrean.

Exsiccs.: CHIR [Lehto 2283, Reeves 1473, 1480]. NMC [Moeller-Richardson 151].

Lamium amplexicaule L.

Lamium amplexicaule var. album A.L. and M.C. Pickens

Dead nettle

5,000 ft. May. Winter annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Rare in swales and lower slopes, lawns and waste ground.


Exsiccs.: Fobo [MHoy 404].

Marrubium vulgare L.

Horehound


Chiricahua Ms.: Chiricahua Nat. Mon. in Bonita Canyon below campground; Faraway Ranch; Fort Bowie Nat. Historic Site near headquarters; Portal to Paradise road, Barfoot Park. Also Rincon Ms., Dos Cabezas, Sierra Ancha, Animas Ms., Canelo Hills, Santa Rita Ms., Sierra de los Ajos. Throughout Arizona. Extensively naturalized in the United States; from Europe. Temperate, Introduced.

Monarda citriodora Cerv. ex Lag. ssp austromontana (Epling) Scora

*Monarda austromontana* Epling

Bee-balm, horse-mint


Chiricahua Mts.: Chiricahua Nat. Mon. in lower Bonita Canyon; Greenhouse Trail; Barfoot Park; Wilderness Area along Crest Trail; Centella Point. Also Rincon Mts., Finaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Sierra de los Ajos. Apache, Navajo, and Gila counties to Cochise, Santa Cruz, and Pima counties. Southwestern New Mexico, Arizona, and northern Mexico. Madrean.


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Monarda fistulosa L. ssp. fistulosa var. menthifolia (Graham) Fern.

*Monarda menthifolia* Graham

Bee-balm


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*Monardella odoratissima* Benth. ssp.

*Monardella odoratissima* var. *parvijolia* (Greene) Jepson

Bee-balm


Chiricahua Mts.: Wilderness Area, Monte Vista Lookout; Centrella Point. Coconino, Mohave, and Cochise counties, Yavapai County. Montana to Washington, south to New Mexico, Arizona, and California. Western.

Exsic.: SWRS [Walker s.n.]. CHWA [Leithliter 293, 474, 666].

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*Nepeta cataria* L.

Camip


Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Bonita Canyon; Paradise. Navajo County, Coconino County, Yavapai County, and Cochise County. Widely distributed in North America; naturalized from the Mediterranean region. Temperate, Introduced.

Exsic.: CHIR [Clark 8218]. SWRS [Walker s.n.].

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*Prunella vulgaris* L.

Heal all


Chiricahua Mts.: East Turkey Creek. Also Finaleño Mts., Huachuca Mts. Apache, Navajo, and Coconino counties to the mountains of Graham, Cochise and Pima counties. Throughout the cooler parts of North America; Eurasia. Temperate, Introduced.

Has been used in folk medicine

Exsic.: SWRS [Roth s.n.].

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*Salvia columbariae* Benth.

Chia


Seeds were utilized by the Indians to make pinole and also for mucilaginous poultices. A beverage prepared from the seeds was popular with the Pima Indians.

Exsic.: SWRS [Roth s.n.]. FOBO [MHoy 104].

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*Salvia davidsonii* Greenm.


Exsic.: ARIZ [J.G. Lemmon 3077 (type)].

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*Salvia henryi* Gray

5,100 - 5,400 ft. [Apr] May. - [Sep]. Perennial deciduous forb, scapose or leafy-stemmed hemicyryptophyte; nanophyll, orthophyll.

Chiricahua Mts.: Fort Bowie Nat. Historic Site north of Overlook; Paradise. Also Santa Rita Mts. Cochise and Pima or Santa Cruz counties. Western Texas to southern Arizona and Chihuahua. Madrean.

Exsic.: FOBO [MHoy 138]. SWRS [Walker s.n.].

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*Salvia lemmozii* Gray

*Salvia microphylla* Benth. var. *wislizeni* Gray

Sage


Chiricahua Mts.: Chiricahua Nat. Mon. on west side of Sugarloaf Mtn., Echo Canyon Trail; Fort Bowie Nat. Historic Site; Greenhouse Trail; 3 mi. east of Onion Saddle; Wilderness Area; road to Long Park; Rucker Canyon; Gooseneck, Paradise; Cave Creek, Herb Martyr Dam. Also Huachuca Mts., Santa Catalina Mts., Animas Mts., Sierra de los Ajos. Cochise and Pima counties. Southern Arizona and northern Mexico. Apachean.
Salvia subincisa Benth.
Sage

Chiricahua Mts.: Chiricahua Nat. Mon. in lower Bonita Canyon; Fort Bowie Nat. Historic Site along Apache Pass Road; Tex Canyon, flats below canyons; Paradise. Also Huachuca Mts., Santa Catalina Mts., Pinaleño Mts., Animas Mts., Yavapai, Greenlee, Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Madrean.


Stachys coccinea Jacq.
Betony, hedge-nettle


Chiricahua Mts.: Chiricahua Nat. Mon. on south-facing slopes of upper Bonita Canyon; Silver Spur Meadow; Fort Bowie Nat. Historic Site in upper South Canyon; 2 mi. up Ceve Creek Canyon from Southwestern Research Station; Wilderness Area. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Sierra de los Ajos. Southern Apache County to Maricopa County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to southern Arizona and Mexico. Southwestern.


Trichostema arizonicum Gray
Blue-curls


Lemna minor L.
*Lemna cyclostosa* Ell. ex Schleid., *L. minima* Chev. ex Schleid.

Duckweed
Hydroiriparian habitats: ponds, springs, and slow-flowing streams.


LILIACEAE—Lily Family.
A family of mostly perennial herbs, infrequently or only occasionally woody; rootstock a rhizome, bulb, corm or tuber. About 240 genera and 4,000 species widely distributed over most of the vegetated portions of the earth.

Allium acuminatum Hook.
*Allium acuminatum* var. *cispdamutum* Fern.


Exsiccs.: FOBO [MHoy s.n.].

Allium cernuum Roth *neomexicanum* (Rydby.) J.F. Macbr.

Allium neomexicanum Rydb.
Nodding onion


Chiricahua Mts.: Chiricahua Nat. Mon.; Greenhouse Trail; Middle Fork, Cave Creek; Wilderness Area, along Crest Trail; Centella Point. Also Animas Mts. Apache, Navajo, and Coconino counties to Cochise, Santa Cruz, and Pima counties. In mountainous or cool regions, almost throughout temperate North America. Temperate.

Exsiccs.: CHIR [Clark 8699, Reeves 4263, 4506]. SWRS [Walker s.n.]. CHWA [Leithliter 108, 130, 145].

Allium glandulosum Link and Otto
*Allium rhizomatum* Woot. and Standl.


Exsiccs.: CHWA [413].

Allium kunthii G. Don
*Allium scaposum* Benth., *Schoenoprasum lineare* Kunth.


Chiricahua Mts.: Winn Falls; Skeleton Canyon. Also Animas Mts. Cochise and Pima counties. Western Texas to southeastern Arizona, south to Central America. Madrean, Latin American.

Exsiccs.: ASU [Leithliter 383; Cazier 727].

LEMNACEAE—Duckweed Family.
A family of small free-floating and submerged freshwater perennial herbs. Temperate and tropical distribution; 4 genera and 25 species.
Allium macropetalum Rydb.

*Allium deserticolae* (M.E. Jones) Woot. and Standl.

**Onion**


Exsic.: FOBO [Mihay 98]. SWRS [Walker s.n.]

Allium plummerae S. Wats.


Chiricahua Mts.: Finery Canyon; East Turkey Creek; West Turkey Creek; Onion Creek. Also Huachuca Mts., Baboquivari Mts. Cochise and Pima counties. Southeastern Arizona, southwestern New Mexico. Sonora, Mexico. Apachean.

Type collected in Huachuca Mts. by J.G. Lemmon (2893).

Exsic.: ARIZ [Gooding 166-47, Hembrode 134, McCormick 165, Barr 60-183, Hesselberg s.n.]

Asparagus officinalis L.

**Asparagus**


Exsic.: CHIR [Reeves 1401]. SWRS [Walker s.n.]

Calochortus ambiguus (M.E. Jones) Ownbey

*Calochortus watsonii* M.E. Jones var. *ambiguus* M.E. Jones

**Mariposa**


Exsic.: CHIR [Fish 54, Reeves 2603]. SWRS [Mouat s.n.]

Dichelostemma capitatum (Benth.) Wood spp. capitatum

*Brodiaea capitata* Benth., *Dichelostemma racemosum* Lenz, *D. pulchellum* (Salish.) Heller var. capitatum (Benth.) Reveal

**Bluedicks**


Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site; 5.3 mi. northeast of Portal. Also Huachuca Mts., Rincon Mts., Pinaleno Mts., Santa Catalina Mts., Animas Mts., Canelo Hills. Coconino and Mohave counties to Cochise, Santa Cruz, and Pima (doubtless also Yuma) counties. Southwestern New Mexico to Oregon, California, Baja California, and Sonora. Western.

Exsic.: CHIR [Fish 39, Reeves 2266, 2628]. SWRS [s.c. s.n.]

Echeandia flavescens (J.A. and J.H. Schultes) Cruden

*Anthericum flavescens* J.A. and J.H. Schultes, *A. toreyi* Baker pro parte

Crag-lily, amber-lily


Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon, Bonita Canyon, Finery Canyon; Fort Bowie Nat. Historic Site: Apache Pass Summit; near Onion Saddle; West Turkey Creek; Greenhouse Trail; between Rustler Park and Long Park; near Southwestern Research Station; Wilderness Area, Greenhouse Canyon; between Rock Creek and West Turkey Creek; East Turkey Creek; Barfoot Park. Also Huachuca Mts., Rincon Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Pinaleno Mts., Santa Rita Mts., Patagonia Mts., Canelo Hills. Apache, Navajo, and Coconino counties, south to Cochise, Santa Cruz, and Pima counties. New Mexico, Arizona, and southward. Madrean.


Lilium parryi S. Wats.

*Lilium parryi* var. *kessleri* A. Davids.

**Lemon Lily**

[4,000] 6,500 - 9,000 ft. [May] - [Jul]. Perennial deciduous forb, bulb geophyte. Rare and declining along shaded perennial streams, seeps, and springs. *Pseudotsuga menziesii, Pinus arizonica, P. engelmannii*.


Maianthemum racemosum (L.) Link spp. racemosum


**Malanthemum stellatum** (L.) Link


Starflower, staryy solomonplume


**Chiricahua Mts.:** Chiricahua Nat. Mon. in Rhyolite Canyon Wilderness Area, Fifs Peak, south side; East Turkey Creek. Also Rincon Mtns., Pinaleño Mts., Santa Catalina Mts., Huachuma Ms., Santa Rita Ms., Sierra de los Ajos, Coconino, Apache, Graham, Gila, Cochise, and Pima counties. Throughout

**Apache, Graham, and Cochise, and Pima counties.** Throughout

**Huachuca Mts.,** Wilderness Area, Flys Peak, south side; East Turkey Creek. Also Rincon Mts., Huachuca Mts., Mule Mts., Animas Mts., Aguja, southward to Canelo Hills. Cochise, and forest.

**Also Rincon Mts.,** Ajos, southward to Canelo Hills. Cochise, and Pima counties. **Also Pinaleño Mts.,** Sierra Norte, Sonora, and throughout most of temperate North America. Temperate.

*Exsic.:* CHIR [Clark 8205, Reeves 2806, 3526]. SWRS [1960-440, Hackner s.n.]. CHWA [Leithliter 64, 67, 341, 364]. ARIZ [Felger and Fishbein 92-858; Darrow and Phillips 2504; Blumer 1537; McCormick 75, 440].

**LINACEAE—Falfa Family.**

A family mostly of herbs, sometimes shrubs. About 9 genera and 200 species, of cosmopolitan distribution, and primarily of temperate regions of both northern and southern hemispheres. The family is represented in the United States by about 60 indigenous species. The family is of economic importance for the flax fiber and linseed oil.

**Linum aristatum** Engelm.

*Cathartolinum aristatum* (Engelm.) Small, *Mesyrium aristatum* (Engelm.) W.A. Weber

Flax


*Exsic.:* CHIR [Reeves 3015, 3543, 3757, 3806].

**Linum lewisii** Pursh var. lepagei (Boivin) Rogers

**Linum lepagei** (Boivin) Rogers, *L. lewisii* var. *lewisii* *Flax*, Western blue flax


**Chiricahua Mts.:** Chiricahua Nat. Mon. at head of (East) Whietal Canyon; FOBO on hill east of trailer. San Simon Valley: 7 mi. southwest of Apache. Also Rincon Mts., Pinaleño Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Animas Ms., Huachuma Ms., Sierra de los Ajos, Apache County to Mohave County, south to Cochise and Pima counties. **Kankassavan and Alaska to southern California and northern Mexico, east to Manitoba, Montana, Wisconsin and Texas.** Western.

The subspecies intended is not specified.

*Exsic.:* CHIR [Clark 8352]. FOBO [MHoy 157]. SWRS [Mouat s.n.].

**Veratrum californicum** Dur.

Skunk cabbage


**Chiricahua Mts.:** Greenhouse Trail; Fly Peak, north face along trail, Cins Cabin, Booger Springs, Bear Wallow Spring, Tub Spring, Anita Spring. Also Pinaleño Ms., White Ms. Apache County, near Lakeside (Navajo County), Mogollon Mesa (Coconino County), Graham and Cochise counties. Montana to Washington, south to New Mexico, Arizona, and California. Western.

**Used by the Greeks to cure insanity.** Helleborine comes from helleborio (to need hellebore), i.e. to be insane. Poisonous to stock under some conditions. Toxins concentrated in root and young shoots. Nectar toxic sometimes causing heavy losses among honeybees, ants, beetles, flies and other insects feeding on the flowers or nectar.
Linum neomexicanum Greene
*Cathartolinum neomexicanum* (Greene) Small
New Mexico, flux
Summer-annual forb, scapose or leafy-stemmed therophyte. Common in pine woodland clearings at upper elevations and sandy drainages lower down.


Exsicc.: CHIR [Clark 8429, Reeves 3449, 3941, 4158, 4260, 4483]. SWRS [Wittmann 182, sc.s.n., Ordway s.n.]. Repository unknown [Blumer 1360].

Linum puberulum (Engelm.) Heller
Plains flux
[4,800] - 5,600 ft. Apr [ Jul] - May [Sep]. Summer-annual forb, scapose or leafy-stemmed therophyte. Uncommon on rocky slopes and grassy flats, may prefer limestone substrate.


Exsicc.: FOBO [MHoy 156]. SWRS [SWRS 1959-68].

Linum usitatissimum L.
Common flux, cultivated flux
5,000 ft. Apr. Winter annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Roadside.


Exsicc.: FOBO [MHoy 97].

LOASACEAE—Loasa Family.
A predominantly American family of herbs or shrubs, sometimes lianous. About 3 genera and 27 species. The family is important for the edible fruit, papaya.

Cevallia sinuata Lag.
4,500 - 5,000 ft. May - Aug. Perennial deciduous forb, scapose or leafy-stemmed hemicycryptophyte; microphyll, orthophyll. Common on disturbed ground; sandy creek beds.


Exsicc.: FOBO [MHoy 189]. SWRS [s.c. s.n., Randall s.n.].

Mentzelia albicaulis (Doug. *ex* Hook.) Torr. and Gray
Stick-leaf, whitestem mentzelia


Exsicc.: CHIR [Reeves 2344, 2406, 3064]. FOBO [MHoy 167]. SWRS [Walker s.n.].

Mentzelia multiflora (Nutt.) Gray var. integrata M.E. Jones
Stick-leaf, desert mentzelia, desert blazingstar
4,300 - 7,000 ft. May - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemicycryptophyte. Common along roadsides.


Exsicc.: CHIR [Clark 8109, 9006, Reeves 992, 2884]. FOBO [MHoy 168].

Mentzelia texana Urban and Gilg
Stick-leaf
5,400 - 6,500 [6,500 ft. Aug] - Sep. Summer-annual forb, scapose or leafy-stemmed therophyte. Uncommon in wooded canyons and open, wooded slopes. *Quercus emoryi* and *Q. arizonica*.


Exsicc.: CHIR [Reeves 1343, 1527, 1613]. SWRS [Luetke s.n.].

LYTHRACEAE—Loosstrife Family.
A family of herbs, shrubs, or trees. About 23 genera and 475 species; generally distributed, but abundant in the American tropics. Most of the tropical species are trees while those in temperate zones are suffruttescent or herbaceous.
Cuphea wrightii Gray
*Cuphea wrightii* var. *nematopetala* Bacig., *Parsonia wrightii* (Gray) Kearney
Chiricahua Ms.: Southwestern Research Station along Cave Creek. Also Huachuca Ms., Rincon Ms., Mule Ms. Graham, Cochise, Santa Cruz, and Pima counties. Southern Arizona to Panama. Madrean.
Exsicc.: SWRS [s.e. s.n.]

Lythrum californicum Torr. and Gray
Loosestrife
Exsicc.: CHIR [Clark 8251, Reeves 1394, 1535]. ARIZ [Blumer 1789].

MALPIGHIACEAE
A family of tropical trees and shrubs, often lianous in character, of 60 genera and 850 species. The family has little economic importance.

Janusia gracilis Gray
Chiricahua Ms.: Fort Bowie Nat. Historic Site on hill east of overlook. Also Rincon Ms., Santa Catalina Ms., Mule Ms., Pinaleño Ms., Baboquivari Ms., Santa Rita Ms., Santa Catalina Ms. Coconino County, Greenlee and Mohave counties, south to Cochise, Santa Cruz, Pima, and Yuma counties. Western Texas to Arizona and northern Mexico (including Baja California). Southwestern.

MALVACEAE—Mallow Family.
A family of herbs, shrubs, or trees. The family is composed of about 82 genera and 1,500 species, widely distributed but particularly abundant in the American tropics. Indigenous United States species number about 200 distributed among 27 genera. Cotton and okra are two plants of the greatest economic importance in the family.

Abutilon incanum (Link.) Sweet ssp. *pringlei* (Hoehr.) Felger and Lowe
*Abutilon pringlei* Hoehr.
Chiricahua Ms.: Round Valley. Also Rincon Ms., Santa Catalina Ms. Yavapai, Greenlee, Graham, Pinal, Maricopa, Pima, Mohave, Cochise, and Yuma counties. Southern Arizona, central Texas, and northern Sonora, Mexico. Sonoran.
Fibers extracted from stems reported to be used in Mexico for making rope.
Exsicc.: SWRS [Moust s.n.]

Abutilon parvulum Gray
Small-leaved abutilon
Chiricahua Ms.: Fort Bowie Nat. Historic Site on parade grounds, around ruins; Portal. Also Huachuca Ms., Sierra Ancha, Santa Catalina Ms., Pinaleño Ms., Animas Ms. Navajo County to Mohave County, south to Cochise and Pima Counties. Colorado and Texas to Arizona, California, and northern Mexico. Southwestern.
Exsicc.: FOBO [MHoy 283]. SWRS [Roth s.n.]

Anoda cristata (L.) Schlecht.
*Anoda acerifolia* auct. non (Zucc. ex Roemer and Schultes) DC., *A. cristata* var. *brachyantha* (Reichenb.) Hoehr., *A. cristata* var. *digitata* (Gray) Hoehr., *Sida cristata* L.
Crested anoda
Chiricahua Ms.: Chiricahua Nat. Mon.; Southwestern Research Station. Also Huachuca Ms., Rincon Ms., Pinaleño Ms., Sierra Ancha, Animas Ms., Canelo Hills. Southern Apache County to Yavapai County, south to Cochise, Santa Cruz, and Pima counties, Western Texas to southern Arizona, southward to South America. Southwestern, Latin American.
Exsicc.: CHIR [Fish 28, Moir 439, Reeves 4126]. SWRS [Pough 1961-91, Ordway 124].

Anoda lanceolata Hook. and Arn.
*Anoda wrightii* Gray
5,400 ft. Amongst grasses.
Chiricahua Ms.: Paradise; Cave Creek. Chiricahua Ms., Cochise County. Southwestern New Mexico, southeastern Arizona, and Mexico. Madrean.
Exsicc.: SWRS [Walker s.n.]

Anoda thurberi Gray
Chiricahua Ms.: Paradise. Also Huachuca Ms.
The most recent collection for Arizona at ARIZ is 1940 and the most recent for the Chiricahua Ms. is 1907.
Exsicc.: ARIZ [Blumer 39, 164, 1670, 1730].
Hibiscus couteri Harvey ex Gray
*Hibiscus couteri* var. *brevipedunculata* M.E. Jones
[4,500] 5,000 ft. May. Saffron; shrub, spreading chamaephyte. Uncommon among shrubs on well-drained slopes and along small drainages.
Exsicc.: SWRS [Barnes s.n.]

Malva neglecta Wallr.
*Malva rotundifolia auct. non L.*
5,400 ft. Aug. Winter annual forb, scapose or leafy-stemmed hemicryptophyte; microphyll, orthophyll. Uncommon on cool moist slopes.
Chiricahua Mts.: Fort Bowie Nat. Historic Site on disturbed ground around the ruins; Straight Line Road at Willow Tank. Also Animas Mts. Mohave, Yavapai, Pinal, Maricopa, Cochise, and Pima counties. Western Texas and southern Colorado to Arizona and Mexico. Madrean.
Exsicc.: SWRS [SWRS 1958:493].

Malva lepidota (Gray) Fryxell


Scurfy sida
Chiricahua Mts.: Fort Bowie Nat. Historic Site at monument office in vicinity of trailer. Also Animas Mts., Canelo Hills, Cochise, Santa Cruz, and Pima counties. Also at Beaver Creek, Yavapai County (Purpus 57). Texas to Arizona and northern Mexico, South America. Latin American.
Exsicc.: Fobo [MHoy 282].

Rhyncnosida physocalyx (Gray) Fryxell
*Sida physocalyx* Gray
Tuberous sida
Chiricahua Mts.: Fort Bowie Nat. Historic Site at monument office in vicinity of trailer. Also Animas Mts., Canelo Hills, Cochise, Santa Cruz, and Pima counties. Also at Beaver Creek, Yavapai County (Purpus 57). Texas to Arizona and northern Mexico, South America. Latin American.
Exsicc.: Fobo [MHoy 445].

Sida abutilfolia P. Mill.
Clement (1957).
Exsicc.: CHIR [Clark 8943, Moir 503, Reeves 2761, 3512, 3724, 4216]. SWRS [Czizer s.n., 1960-125]. Fobo [MHoy 131].

Sida neomexicana Gray
*S. neomexicana* Gray
Exsicc.: CHIR [Fish 10, Reeves 1293, 1693, 3732, 4128, 4361]. SWRS [Roth s.n.]

Sida spinosa L.
*Sida alba* L., *S. angustifolia auct. pro parte non Lam.*, *S. spinosa var. angustifolia auct. pro parte non* (Lam.) Griseb.
Exsicc.: CHIR [Moir 440].

Sidalcea neomexicana Gray.
Sometimes used as greens by the Indians. Roush (1931).

Sphaeralcea angustifolia (Cav.) G. Don ssp. cuspidata (Gray) Kearney
*Phymosia cuspidata* (Gray) Brit., *S. angustifolia var. cuspidata* Gray, *S. cuspidata* (Gray) Brit.

Globe-mallow
Chiricahua Mts.: Chiricahua Nat. Mon. west of the monument. Also Huachuca Mts., Animas Mts., Canelo Hills, Sierra de los Agos. Navajo and Coconino counties, south to Cochise, Santa Cruz, and Pima counties. Western Kansas and Colorado to western Texas, Arizona, and Mexico. Madrean.
Exsicc.: CHIR [Reeves 2927].

Sphaeralcea emoryi Torr. ex Gray ssp. variabilis (Cockerell) Kearney
*Sphaeralcea emoryi* var. *californica* (Parish) Shimers, *S. emoryi var. variabilis* (Cockerell) Kearney
Globe-mallow
Chiricahua Mts.: Chiricahua Nat. Mon.; near Herb Martyr Dam in Cave Creek. Also Rincon Mts., Santa Catalina Mts. Mohave, Graham, Pinal, Maricopa, Cochise, Pima, and Yuma counties. Type from near the mouth of the Gila River (Emory in
MOLLUGINACEAE-Mollugo Family

**Mollugo verticillata L.**
*Mollugo berteriana* Ser.

Carpet-weed, Indian-chickweed


*Exsicc.*: CHIR [Clark 8697, Reeves 1693, 4002, 4171]. ASU [Leitho 3334; McGill and Keil 8535].

MONOTROPACEAE-Pine Drop Family

A family of boreal and temperate distribution. Eight genera and 9 species are found in North America.

**Monotropa hypopithys L.**


Pinesap

[7,000] 8,000 - 8,700 [9,000] ft. Jul Aug - [Sep]. Perennial deciduous forb, saprophytic geophyte. Uncommon on mesic slopes, rich soil in the shade of pines, firs, and aspens, along mesophirian drainages.

Chiricahua Mts.: junction of Rustler Park and Barfoot Park roads; Wilderness Area; Tub Spring; Bootlegger Saddle. Also Pinaleo Mts., Sierra Ancha, Santa Catalina Mts. Coconino County to Cochise and Pima counties. Widely distributed in the Northern Hemisphere. Holarctic.

*Exsicc.*: SWRS [SWRS 1960-415]. CHWA [Leitho 530].

**Pterospora andromeda Nutt.**

**Pine drops**


*Exsicc.*: ARIZ [J.C. Blumer U.201, Windham and Yatskievych 82-216].

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**Sphaeralcea fendleri Gray**

Globe-mallow


**Sphaeralcea hastulata Gray**


Globe-mallow

5,000 - 6,100 ft. May - Aug. Perennial deciduous forb, scorpo or leafy-stemmed hemichorismatophyte; microphyll, orthophyll. Uncommon in grassland and open woodland.


*Exsicc.*: CHIR [Clark 8184, Reeves 3527, 4373]. FOBO [MHo 142].

**Sphaeralcea laxa Woot. and Standl.**

Globe-mallow


Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site at Apache Spring; Portal; South Fork Cave Creek. Also Rincon Mts., Santa Catalina Mts., Pinaleo Mts. Navajo and Coconino counties (local), southward to Graham, Cochise and Pima counties. Southwestern.

*Exsicc.*: CHIR [Ma251, Reeves 2893, 2904, 3972]. SWRS [Roth s.n.]. FOBO [106, 143].

**Sphaeralcea wrightii Gray**

4,700 ft. Perennial deciduous forb, scorpo or leafy-stemmed hemichorismatophyte; microphyll, orthophyll.


*Exsicc.*: FOBO [MHo s.n.].
**MORACEAE—Mulberry Family.**
A family of deciduous or evergreen trees or shrubs with milky latex. About 72 genera and over 1,000 species, mostly of pantropical distribution. The family is of considerable economic importance for its many edible fruits: figs (*Ficus*), mulberries (*Morus*), and breadfruit and jack fruit (*Artocarpus*).

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**Morus microphylla** Buckl.
*Morus conifer* Greene; *M. crapegigella* Greene, *M. grisea* Greene, *M. radalina* Greene
Texas mulberry


*Chiricahua Mts.:* Portal to Paradise road; Fort Bowie Nat. Historic Site in Siphon Canyon; Silver Creek 6 mi. south of Eddington’s Ranch; Tex Canyon. Also Huachuca Mtns., Rincon Mts., Penelillo Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts. Coconino County, where perhaps introduced, and Greenlee County to Yavapai County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico to Graham and Pima counties. Western Texas to southeastern California, and northern Mexico.

MHoy s.n., SWRS s.c. s.n.

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**NYCTAGINACEAE—Four o’clock Family.**
A family of herbs or (in the tropics) shrubs or trees. About 28 genera and about 250 species distributed mostly in the tropics and subtropics of both hemispheres. In this country it is mostly restricted to the Pacific and southern regions. Economically the family is important only for its ornamentals four-o’clock (*Mirabilis*), sand verbena (*Abronia*), and bougainvilleas.

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**Allionia choisyi** Standl.

[4,000] - [6,000 ft. [Jul] - [Oct]. Summer annual forb, spreading therophyte, leptophyll, orthophyll.

*Chiricahua Mts.:* Paradise. Apache, Navajo, Coconino, Yavapai, and Cochise counties. Western Texas to Arizona and south to Oaxaca. Russel (1982) cites a Blumer collection from Barfoot Park, no height altitude specimens are found at ARIZ.

MHoy 118, 119, 1695.

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**Allionia incarnata** L.
Trailing-four-o’clock, desert snow-ball


MHoy s.n., SWRS [Clark 9260]. F>OBO [MHoy 191]. SWRS [Roth s.n., Bottimer s.n.].

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**Ammocodon chenopodioides** (Gray) Standl.
*Selinocarpus chenopodioides* Gray

4,700 - 4,800 ft. Jul. Perennial deciduous forb, scapose or leafy-stemmed hemichryptophyte; microphyll, orthophyll.

Chiricahua Mts.: 1 mi. west of Portal. Also Penelillo Mts. Duncan, Greenlee County, Chiricahua Mts., Cochise County, Tucson, Pima County. Western Texas to southern Arizona and Chihuahua. Chihuahuan.


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**Boerhavia coulteri** (Hook. f.) S. Wats.
*Senkenbergia coulteri* Hook. f.


*Chiricahua Mts.:* Fort Bowie Nat. Historic Site; 2 mi. northeast of Portal. Also Santa Catalina Mts., Pinaleño Mts., Coconino and Mohave counties to Graham, Cochise, Pima, and Yuma counties. Southern California, Sonora, and Baja California. Sonoran.

One of the commonest and most widely distributed species of *Boerhavia* in Arizona.

MHoy s.n., SWRS [MHoy s.n., SWRS s.c. s.n.].

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**Boerhavia diffusa** L.
Spiderling

5,150 - 6,200 [7,000 ft. [Apr] - [Sep] [Nov]. Perennial deciduous forb, spreading hemichryptophyte. Common on grassland, grassland/scrub, open woodland, disturbed soil, roadsides and fields.


Weedy pest.

MHoy 3103, 4166, 4357. F>OBO [MHoy 265]. SWRS [Cazier s.n.].

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**Boerhavia erecta** L.
Spiderling

5,150 - 6,200 [7,000 ft. [Jun] - [Aug] - [Sep]. Summer annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Common in sunny or partly sunny woodlands and dry uplands. *Quercus emoryi*.


MHoy 3103, 4166, 4357. SWRS [Roth s.n.].

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**Boerhavia intermedia** M.E. Jones
*Boerhavia erecta* var. *intermedia* (M.E. Jones)

Kearney and Peebles

Five-winged ringstem


MHoy 287.

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Boerhavia purpurascens Gray
Spiderling
Exsicc.: CHIR [Clarke 8305, 8620, Reeves 1490, 4396]. SWRS [Owens s.n.].

Boerhavia spicata Choisy
Boerhavia torreyana (S. Wats.) Standl.
Exsicc.: FOBO [MHoy 474].

Mirabilis bigelovii Gray var. bigelovii
Hesperonia bigelovii (Gray) Standl., H. glutinosgraclulis Standl.
California four-o’clock
Suffrutescent shrub, suffrutescent chamaephyte. Uncommon on dry uplands and small drainages.
Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Sierra Ancha, Santa Catalina Mts., Pinaleño Mts. Coconino and Mohave counties to Pima and Yuma counties. Type from the Grand Canyon (Gray in 1885), type of H. glutinosgraclulis from Sabino Canyon, Pima County (Tourney 471c). Southern Utah to Arizona and southeastern California. Southwestern.
Exsicc.: [MHoy, s.n.].

Mirabilis coccinus (Torr.) Benth. and Hook.
f.
Oxybaphus coccinus Torr.
Exsicc.: CHIR [Clark 8674, 9212, Fish 58, Reeves 1590, 2780, 2863, 4067]. FOBO [MHoy 178]. SWRS [Mouat s.n.].

Mirabilis jalapa L.
Cultivated four o’clock
5,400 ft. Aug. Perennial deciduous forb, scapose or leafy-stemmed hemichlophyte; mesophyll, orthophyll.
Chiricahua Mts.: Southwestern Research Station; Cave Creek, Chiricahua Mts. (Harrison and Kearney 6132); probably an escape from cultivation. A native of tropical America. Latin American, Introduced.

This is the well known four-o’clock of old-fashioned gardens.
Exsicc.: SWRS [Roth s.n.].

Mirabilis linearis (Pursh) Heimerl
Allionia gausopoides Standl., A. linealis Pursh, Mirabilis gausopoides (Standl.) Standl., M. hirsutia (Pursh) MacM. var. linearis (Pursh) Boivin, M. lanceolata (Rydby.) Standl., M. linearis var. subhispida Heimerl, O. angustifolius Sweet, O. exaltata (Standl.) Weatherby, O. gausopoides Standl. O. lanceolata (Rydby.) Standl., O. linealis (Pursh) B.L. Robins., O. linealis var. subhispida (Heimerl) Dayton
Exsicc.: CHIR [Fish 61, Reeves 3227, 3547]. FOBO [MHoy 216]. SWRS [Walker s.n., Mouat s.n.].

Mirabilis longiflora L.
Mirabilis longiflora var. wrightiana (Gray ex Brit. and Kearney) Kearney and Peebles, M. wrightii Gray ex Britt. and Kearney
Sweet four-o’clock
Exsicc.: CHIR [Clark 9312, Reeves 987, 1530, 4395]. FOBO [MHoy s.n.]. SWRS [SWRS 1959-516].

Mirabilis multiflora (Torr.) Gray var. multiflora
Quamocladion cordifolium Osterhout, Q. multiflorum Torr.
5,000 ft. May. Perennial deciduous forb, scapose or leafy-stemmed hemichlophyte; mesophyll, orthophyll. Common on dry uplands.
Exsicc.: FOBO [MHoy s.n.].

Mirabilis nyctaginea (Michx.) MacM.
Allionia nyctaginea Michx., Oxybaphus nyctaginea (Michx.) Sweet
Wild four-o’clock
Mirabilis oblongifolia (Gray) Heimerl.

Chiricahua Mts.: Fort Bowie Nat. Historic Site around trailer; Chiricahua Nat. Mon.; Paradise; 2 mi. east of Onion Saddle; Wilderness Area; Barfoot Park; Cave Creek. Also Huachuca Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts. Coconino County to Greenlee, Cochise, Santa Cruz, and Pima counties. Western Texas and Arizona, south into Mexico. Madrean. 

Exsicc.: CHIR [Reeves 3226, 4282].

Mirabilis oxybaphoides (Gray) Gray
*Allionia oxybaphoides* (Gray) Gray ex Torr. Spreading four-o’clock 


Exsicc.: ASU [Cazier 662].

Mirabilis pumila (Standl.) Standl.
*Allionia pumila* Standl., *Oxybaphus pumilus* (Stand.) Standl. 


Exsicc.: FOBO [MHoy s.n].

OLEACEAE—Olive Family.
A family of trees or shrubs, sometimes lianas. About 22 genera and 500 species, of temperate and paleotropical regions, notably Asia and the East Indies. The family is of considerable economic importance. The olive (*Olea*) is a source of food, and oil expressed from the fruit is of high value. Ash lumber (*Fraxinus*) is of value for cabinet work. Additionally, lilac (*Syringa*), privet (*Ligustrum*), jasmine (*Jasminum*), and golden bells (* Forsythia*) are of ornamental use.

Fraxinus papillosa Lingelsh.


Chiricahua Mts.: West Turkey Creek at Ranger Station; Pine Canyon. Also Huachuca Mts., Santa Rita Mts. Pima and Cochise counties.

Exsicc.: ARIZ [Little 17045, 17051].

Fraxinus velutina Torr.


Chiricahua Mts.: Chiricahua Nat. Mon.; FOBO at Apache Spring; West Turkey Creek; Whitewater Draw; Halfmoon Valley (Pedrogous Mts.); South Fork Cave Creek; Wilderness Area; Whitetail Canyons. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts., Sierra de los Ajos. Apache County to Coconino County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to southern California and northern Mexico. Temperate.


Menodora scabra (Engelm.) Gray


Exsicc.: FOBO [MHoy 455]. SWRS [Walker s.n.].

ONAGRACEAE—Evening Primrose Family.
A family mostly of herbs (occasionally aquatics), rarely shrubs (*Psychotria*) or trees (*Sasqua*). About 20 genera and 650 species, of world-wide distribution, especially in temperate regions of the New World but also abundant in South America. Economic value is limited to ornamentals.

Calylophus hartwegii (Benth.) Raven ssp. *pubescens* (Gray) Towner and Raven
Calylophus tourneyi (Small) Towner
Calylophus hartwegii (Benth.) ssp tourneyi (Small) Towner and Raven, Galpinsia tourneyi (Small), Oenothera hartwegii (Small) Towner, O. hartwegii Benth. var. tourneyi (Small) Munz, O. tourneyi (Small) Tidestrom

Evening primrose


Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Rincon Mts., Santa Catalina Mts., White Mts., Apache County to Pinal, Cochise, Santa Cruz, and Pima counties. From Oklahoma and Texas to southeastern Arizona.

Exsicc.: FOBO [MHoy 129]. SWRS [Mout s.n., Wittmann 41].

Camarissonia californica (Nutt. ex Torr. and Gray) Raven
Eulobus califomicus Nutt. ex Torr. and Gray, Oenothera californica (Nutt. ex Torr. and Gray) Greene, O. leptocarpum Greene,


Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Rincon Mts., Santa Catalina Mts., Greenlee, Yavapai, and Mohave counties south to Pima and Yuma counties. Western Arizona and southern California to Sonora and Baja California. Sonoran.

Exsicc.: FOBO [MHoy s.n.].

Epilobium canum (Greene) Raven ssp. latifolium (Hook.) Raven
Zauschneria californica Presl ssp. latifolia (Hook.) Keck, Z. latifolia (Hook.) Greene, Z. latifolia arizonica (A. Davids.) Hilend
Hummingbird-trumpet


Perennial deciduous forb, scapose or leafy-stemmed proto-chamaephyte. Rare on cool slopes and among rocks in damp streambed soils.

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Park and East Whittier Canyon; Fort Bowie Nat. Historic Site; South Fork Cave Creek; Wilderness Area. Also Rincon Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts., Rincon Mts., Canelo Hills, Sierra de los Ajos. Southern Coconino, Greenlee, and Gila counties, south to the Mexican border, west to the Ajo Mts. (Pima County). Southwestern New Mexico, southern Arizona, and northern Sonora. Southwestern.

Exsicc.: CHIR [Borell 31, Reeves 1753, 4398]. CHWA [631].

Epilobium ciliatum Raf. ssp. ciliatum
Epilobium adenocaulon Hausskn., E. adenocaulon var. ecomosum (Fassett) Munz, E. adenocaulon var. holosericeum (Trel.) Munz, E. adenocaulon var. parishii (Trel.) Munz, E. adenocaulon var. perplexans Trel., E. americanum Hausskn. E. brevistylum Barbev. E. brevistylum var. urinum (Parish ex Trel.) Jepson, E. californicium Hausskn., E. californicum Hausskn. var. holosericeum (Trel.) Munz, E. ciliatum var. ecomosum (Fassett) Boivin, E. delicatum Trel., E. ecomosum (Fassett) Fern., E. fendleri Hausskn., E. glandulosum Lehm. var. adenocaulon (Hausskn.) Fern., E. glandulosum var. macounii (Trel.) C.L. Hitchc., E. leptocarpum var. macounii Trel., E. leptocarpum Hausskn., E. watsonii Barneby var. parishii (Trel.) C.L. Hitchc. Willow-weed


Perennial deciduous forb, scapose or leafy-stemmed hemichryptophyte; nanophyll, orthophyll. Uncommon on swales and lower slopes, moist places, logged forests, streams, rocky soil.


Exsicc.: CHIR [Clark 8276], SWRS [Wittmann 92]. CHWA [Leithliter 385]. ARIZ [Blumer s.n. 163, 1333, 1400; O.M. Clark 8277, 8329]. ASU [Cazier 117].

Gaura coccinea Nutt. ex Pursh
Gaura coccinea var. arizonica Munz, G. cocccinea var. epilobioides (Kunth) Munz, G. cocccinea glabra (Lehm.) Munz, G. cocccinea var. parvifolia (Torr.) Rickett, G. cocccinea var. typica Munz, G. glabra Lehm., G. odorata Sessé ex Lag.

Scarlet gaura


Exsicc.: CHIR [Clark 8539, Reeves 2934]. SWRS [Toller 60].

Gaura hexandra Gomez ssp. gracilis (Woot. and Standl.) Raven and Gregory
Gaura gracilis Woot. and Standl., G. gracilis var. typica Munz

Scarlet gaura

5,000 - 8,800 ft. May - Oct. Perennial deciduous forb, scapose or leafy-stemmed hemichryptophyte; microphyll,
Lavandula \textit{brachycarpa} (Gray) Brittt., \textit{Megapterium brachycarpum} (Gray) Lev. \\
\textit{Oenothera brachycarpa} var. \textit{wrightii} (Gray) Lev. \\
\textit{O. cespitosa} Nutt. ssp. \textit{australis} (Woot. and Standl.) Munz, \textit{O. cespitosa} \\
var. \textit{australis} (Woot. and Standl.) Munz \\
San-drops \\
[4,000] - 5,000 [6,000] ft. Feb - Jul. Perennial deciduous \textit{forb}. Rare on dry slopes. \\
Exsicc.: FOBO [MHoy 212].

\textit{Oenothera cespitosa} Nutt. var. \textit{cespitosa} \\
cespitosus (Nutt.) Raimann, \textit{P. montanus} (Nutt.) A. Nels. \\
Evening primrose \\
Chiricahua Mts.: Chiricahua Nat. Mon. frequent west of monument; Fort Bowie Nat. Historic Site in Cut Off Canyon; 5 mi. east of Portal. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts. The typical glabrous form of the species is not known in Arizona, but 4 varieties are found there. Variety \textit{marginita} (Nutt.) Munz is well distributed throughout the state. Ranging from Colorado and Arizona to Washington and California. Var. \textit{Jonesii} Munz, otherwise known only from Utah, has been found north of Cameron, Coconino County (Ripley and Barneby 8498). Var. \textit{montana} (Nutt.) Durand, occurs in Apache, Navajo, and Coconino counties. Ranging from Montana and Oregon to New Mexico and Arizona. Var. \textit{australis} (Woot. and Standl.) Munz is known from several localities in Cochise County and is found also in New Mexico. A glabrous form, approaching var. \textit{longiflora} (Helles) Munz, was found on the north side of the Grand Canyon (Eastwood and Howell 1073a). Western. \\
Exsicc.: CHIR [Reeves 2343, 2605]. FOBO [MHoy 123]. \\
SWRS [Mouat s.n.].

\textit{Oenothera elata} Kunth ssp. \textit{hirsutissima} (Gray ex S. Wats.) W. Dietr. \\
\textit{Oenothera jepsonii} Greene, \textit{O. hookeri} Small, \textit{O. franciscana} Bartlett. \\
Evening primrose \\
Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site; Southwestern Research Station; Rustler Park; Barfoot Park; Wilderness Area, Winn Falls. Also Rincon Mts., Pinales Mts., Sierra Ancha, Santa Catalina Mts., Sierra de los Ajos. This species is represented in Arizona by two subspecies, both growing in damp places. These are: subsp. \textit{hirsutissima} (Gray) Munz, and subsp. \textit{hewettii} (Cockrell) Munz, otherwise known only from Utah to northern Mexico. Subsp. \textit{hirsutissima} occurs in Apache and Coconino counties, south to Cochise and Pima counties, and ranges from Colorado and Utah to northern Mexico. Subsp. \textit{hewettii} is known from Navajo, Coconino, Graham, and Gila counties, and ranges from Kansas to Nevada, south to northern Mexico, Western. \\
These subspecies intergrade with each other and with other forms of \textit{O. hookeri}. \\
Exsicc.: CHIR [Borel 24, Clark 8419, Reeves 3655, 4498, 4524]. SWRS [Roth s.n.]. CHWA [Leithliter 609].
Oenothera laciniata Hill
Raimannia laciniata (Hill) Rose
Cut-leaved evening primrose

Chiricahua Mts.: between Rustler Park and Long Park; Turkey Park; Centella Point. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts., Sierra de los Ajos. Almost throughout the state except the extreme western part. Represented in Arizona by var. puberulae (Willd.) Munz, which ranges from Texas to Arizona, south to Ecuador. Temperate, Latin American.
The flowers open in the evening.

Exsiccat.: SWRS [Wittmann 182, s.n. s.n., Pough 1962-34].

Oenothera pallida Lindl. ssp. runcinata (Engelm.) Munz and W. Klein
Oenothera pallida var. runcinata (Engelm.) Cronq., O. runcinata (Engelm.) Munz, O. runcinata var. brevifolia (Engelm.) Munz, O. runcinata var. leucotricha (Woot. and Sundl.) Munz, O. runcinata var. typica Munz
[4,000] 5,500 - [7,000] ft. [May] - [Sep]. Perennial deciduous forb, scapose or leafy-stemmed hemicryptophyte; microphyll, orthophyll. Dry plains and hills.


Oenothera primiveris Gray
Evening primrose


Exsiccat.: CHIR [Reeves 2347, 2531, 2555]. FOBO [MHoy 358]. SWRS [Roth s.n.].

ORCHIDACEAE—Orchid Family.
A family of perennial herbs; terrestrial, epiphytic, or saprophytic, sometimes vine-like, the terrestrial forms with fibrous or with thickened tubercous or cord-like roots, the epiphytic forms often with the leaf-bearing stem swollen to form a pseudobulb and often with aerial hanging cord-like roots covered by a layer of water-absorbing tissue, the saprophytic forms lack chlorophyll. A very large family of about 450 genera and 10,000 to 15,000 species, of wide distribution over the earth in all hemispheres but most abundant in the tropics where the majority of genera are epiphytes. Most of the genera of the temperate and all those of the arctic regions are terrestrial. There are about 43 genera and 145 species in North America north of Mexico. Aside from their value as ornamentals, the orchid family is the source of vanilla (Vanilla).

Corallorhiza maculata (Raef.) Raef.
Corallorhiza maculata var. flava (M.E. Peck) Cockerell, C. maculata immaculata M.E. Peck, C. maculata var. intermedia Farw., C. maculata occidentalis (Lindl.) Cockerell, C. maculata var. punicea (Barlett) Weatherby C. multiflora Nutt. and Adams
Spotted coral root

Chiricahua Mts.: Wilderness Area, Round Park, southeast slope of Flys Peak along Summit Trail; Rustler Park to Long Park. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts. Lukachukai and White Mts. (Apache County), North Rim of Grand Canyon and San Francisco Peaks (Coconino County), south to the Pinaleño Mts. (Graham county) and the Santa Catalina Mts. (Pima County). Nova Scotia to Alaska, south to Florida, New Mexico, Arizona, and California. Temperate, Latin American.


Corallorhiza striata Lindl.
Striped coral root
7,000 - 9,200 ft. Jun - Jul. Perennial deciduous forb, saprophyte geophyte. Rare on partly sunny to deeply shaded, cool moist slopes in coniferous forests; more often in ravines at lower elevations.


Exsiccat.: SWRS [Walker s.n., SWRS 1959-460].

Corallorhiza wisteriana Conrad
Spring coral root
6,000 - [9,200] ft. May - [Jul]. Parasite scapose or leafy-stemmed hemicryptophyte. Uncommon on cool moist slopes.

Chiricahua Mts.: 1 mi. above Herb Martyr Dam; East Turkey Creek; Rock Creek. Also Pinaleño Mts., Sierra Ancha. North Rim of Grand Canyon and San Francisco Peaks (Coconino County), Sierra Ancha and Final Mts. (Gila County), Santa Catalina Mts. (Pima County). Pennsylvania to Florida and Texas; Arizona. Temperate.

Exsiccat.: SWRS [Morse s.n., Walker s.n.].

Goodyera oblongifolia Raf.
Goodyera decipiens (Hook.) F.T. Hubbard, G. oblongifolia var. reticulata Boivin, Perarium decipiens (Hook.) Piper
Rattlesnake plantain

Chiricahua Mts.: Wilderness Area between South Fork Cave Creek and Anita Park, along Crest Trail; Flys Peak, Centrella Point. Also Sierra Ancha, Santa Catalina Mts. Lukachukai and White Mts. (Apache and Greenlee counties), Kaibab Plateau, Elden Mts., and Bill Williams Mts. (Coconino County), Pinaleño Mts. (Graham County). Nova Scotia to...
Alaska, south to New Hampshire, New Mexico, Arizona, and California. Northern.
Exsicc.: SWRS [Walker s.n.]. ARIZ [Baric 64-497].

**Goodyera repens** (L.) R.Br. ex Ait. f.


**Rattlesnake plantain**
Perennial deciduous forb, rosette hemicycophyte; nanophyll, orthophyll. Uncommon.


**Hexalectris spicata** (Walt.) Barnh.

**Crested coral-root**


Exsicc.: CHIR [Clark 8596, Reeves 961]. CHWA [Leathlifter 196, 489, 845]. SWRS [Todsen s.n., Wittmann 76].

**Hexalectris warnockii** Ames and Correll

**Texas purple-spike**
5,400 ft. Sep. Perennial deciduous forb, bulb geophyte; microphyll, orthophyll. Rare in oak-pine woodlands.


Population near Chiricahua National Monument headquarters in Rhyolite Canyon was apparently destroyed by past construction activities. A population nearby has apparently survived but is uncollected.

Exsicc.: CHIR [Fish 20, Reeves 1214].

**Malaxis corymbosa** (S. Wats.) Kuntze

7,000 ft. Jul.


Exsicc.: SWRS [Luetteke s.n.].

**Malaxis ehrenbergii** (Reichenb. f.) Kuntze

**Adder’s mouth**


Exsicc.: SWRS [SWRS 1959-774]. CHWA [Leathlifter 673].

**Malaxis macrostachya** (Lex.) Kuntze

**Malaxis soulei** L.O. Williams

**Rat-tail malaxis**

Chiricahua Mts.: Chiricahua Nat. Mon.; Wilderness Area; 0.5 mi. above Herb Martyr Dam; along Mormon Canyon near W. Turkey Creek. Also Rincon Mts., Santa Catalina Mts. White Mountains (Apache County), Mogollon Escarpment (Cocoonino County), Finaleso Mountains (Graham County), fairly common in the mountains to Cochise, Santa Cruz, and Pima counties, Sierra de los Ajos, Western Texas to Arizona, south to Panama. Southwestern, Latin American.

Exsicc.: CHIR [Clark 8596, Reeves 961]. CHWA [Leathlifter 196, 489, 845]. SWRS [Todsen s.n., Wittmann 76].

**Malaxis tenuis** (S. Wats.) Ames


Chiricahua Mts.: Rustler Park; West Turkey Canyon. Also Rincon Mts., Santa Catalina Mts. Pima County (Thornber in 1903, Peebles et al. 2518). New Mexico, Arizona, and Mexico. Madrean.

Exsicc.: SWRS [Gallagher s.n.].

**Platanthera limosa** Lindl.

*Habenaria limosa* (Lindl.) Hemsll., *Limnorchis thurberi* (Gray) Rydb.

Thurber’s bog orchid

Chiricahua Mts.: Pine Canyon; Wilderness Area; Monte Vista Peak. Also Rincon Mts., Santa Catalina Mts., Huachuca Mts. Mountains of Cochise and Pima counties. Type of *Habenaria thurberi* from south of Babocomari, Cochise County (Thurber 925), type of *Limnorchis arizonica* from the Rincon Mts., Pima County (Nealley 78). New Mexico, southern Arizona, and Mexico. South of Babocomari (Cochise Co.). New Mexico, southern Arizona, and Mexico. Madrean.

Browsed by cattle.

Exsicc.: CHWA [202, 482, 591].

**Spiranthes michuacana** (Llave and Lex.) Hemsll.

**Stenorrhynchos michuacanus** (Llave and Lex.) Schlechter

6,000 - 7,000 ft. Sep. - Oct. Deciduous perennial forb, tuber geophyte; leptoophyll, orthophyll. Rare in mesic canyons and shaded rocky slopes.

Chiricahua Mts.: Rucker Canyon (?). Also Dragoon Mts., Huachuca Mts.

Specimen not seen. J.G. Lemmon did collect in the vicinity of Camp Rucker in 1881 and his number (477) fits the time-frame. However, some of his given localities are known to be in error.
Spiranthes parasitica A. Rich. and Gal.
Schiarea parasitica (A. Rich. and Gal.) Schlechter
7,200 - 8,200 ft. Jun - Jul. Perennial deciduous forb, saprophyte geophyte. Rare. Probably more common than usually indicated. The key to finding this species is to find the proper habitat. Shaded slopes without herbasceous understory in mixture of equal parts of pine or Douglas-fir needles and gambels oak or aspen leaves, cool moist slopes.
Chiricahua Mts.: just below Rustler Park; Barfoot Park; Rustler Park; at Onion Saddle. Also Rincon Mts., Sierra Ancha, Santa Catalina, Catalina Mts., Pinaleño Mts., Pima County (Tornher and Lloyd 4196, Phillips 2403, 2420). Southern Arizona and Mexico. Apachean.
Phillips' specimens were collected on north slopes in deep shade under Douglas-fir.
Exsicc.: SWRS [Walker s.n.]. ARIZ [Barr 65-301a, 64-497].

Orobanchaceae—Broomrape Family.
A family of annual or perennial, somewhat fleshy herbs, root parasites; commonly lacking chlorophyll or seemingly so. About 15 genera and 140 species, mostly of northern temperate regions but primarily of the warm temperate parts of the Old World. Orobanche, with about 90 species, is the largest genus. The members of the family are of no significant economic importance. In previous times some of them have been used medicinally for their alleged therapeutic properties.

Conopholis alpina Liebm. var. mexicana
(Gray ex S. Wats.) Haynes
Conopholis mexicana Gray ex S. Wats., Orobanche multiflora Nutt. var. xanthochroa A. Nels. and Cocke.
Squaw-root, cone-flower
5,400 - 6,600 ft. Jun - Jul. Parasite scapose or leafy-stemmed hemicyrptophyte. Uncommon in heavy leaf litter, woodland and forest, dry uplands.
Chiricahua Mts.: Chiricahua Nat. Mon.; Ash Spring; South Fork Cave Creek; Wilderness Area. Also Pinaleño Mts., Sierra Ancha, Animas Mts., Sierra de los Ajos. Southern Apache County to Cochise and northern Gila counties. New Mexico, Arizona, and Mexico. Madraean.
The plant grows with and is presumably parasitic on species of Pinus, Cupressus, Juglans, and Quercus.
Exsicc.: CHIR [Fish 57, Reeves 2995, 3126, 3145]. SWRS [Roth s.n.]. CHWA [Leithliter 367].

Orobanchus cooperi (Gray) Heller
Orobanchus ludoviciana Nutt. var. cooperi (Gray) Beck., Orobanchus ludoviciana Nutt. var. latioba Munz.
Burro weed strangler, broom-rape
[3,400] 5,100 - 7,000 ft. Oct - Nov. Herbaceous parasite, scapose or leafy-stemmed hemicyrptophyte. Rare on cool moist slopes.
Chiricahua Mts.: Fort Bowie Nat. Historic Site on hill northeast of Overlook; north side Silver Peak. Also Rincon Mts., Sierra Ancha, Mule Mts. Navajo, Cochino, and Mohave counties, south to Santa Cruz, Pima, and Yuma counties. Western Texas to southern Utah and Nevada, southeastern California, and northwestern Mexico. Sonoran.
Exsicc.: JFOB [McClay 47]. SWRS [Walker s.n.].

Orobanchus fasciculata Nutt.
Anoploanthus fasciculatus (Nutt.) Walp., Orobanche fasciculata var. franciscana Achey, O. fasciculata var. lutea (Parry) Achey, O. fasciculata var. subulata Goodman, O. fasciculata var. typica Achey, Thalesia fasciculata (Nutt.) Britt., T. lutea (Parry) Rydb.
Pinyon strangleroot
5,200 - 8,800 ft. May - [Aug]. Herbaceous parasite, scapose or leafy-stemmed hemicyrptophyte. Uncommon on dry uplands.
Chiricahua Mts.: on trail between Long Park and Rustler Park Pinal Mt., Sierra Ancha, Rincon Mts. Apache County to Mohave County, south to Cochise and Pima counties. Michigan to British Columbia, south to Texas, Arizona, and Baja California. Western.
Exsicc.: SWRS [Roth s.n.].

Oxalidaceae—Oxalis Family.
A family of herbs (sometimes suffrutescent) or shrubs, rarely arborescent, often producing fleshy rhizomes or bulb-like tubers. About 7 genera and about 1,000 species, mostly pantropical, with numbers decreasing as ranges extend north and south into temperate zones. The family is of little economic importance.

Oxalis albicans Kunth ssp. pilosa (Nutt.) Eiten
Oxalis corniculata L. ssp. pilosa (Nutt.) Lourteig, O. pilosa Nutt.; O. wrightii Gray var. pilosa (Nutt.) Weig., Xanthonoxalis pilosa (Nutt.) Small
Chiricahua Mts.: Portal Ranger Station; Southwestern Research Station. Also Rincon Mts., Sierra Ancha, Pinaleño Mts., Santa Rita Mts. Apache County to Cochino County, south to Cochise, Santa Cruz, Pima, and Yuma counties. Western Texas to Arizona and Mexico. Chihuahuan.
Exsicc.: SWRS [Roth s.n.]. NMC [Hershey s.n.; Blumer 1547].

Oxalis alpina (Rose) Rose ex R. Knuth
Oxalis meteoi (Small) R. Knuth, O. monticola Small
Wood-sorrel
6,000 - 8,200 [9,000] ft. Jul - Aug. Perennial deciduous forb, rosette hemicyrptophyte. Common on rock ledges, talus slopes in wooded canyons, meadows; rich soil, cool moist slopes; in deep well-watered canyons at lower elevations.
Exsicc.: CHIR [Clark 8434, 9045, Reeves 3574, 3677, 3791]. SWRS [SWRS 1959-501, Cummings s.n.]. NMC [Blumer 1584; Carter s.n.; Tisdon s.n.].
Oxalis decaphylla Kunth
Oxalis greyi (Rose) R. Knuth
Wood-sorrel
Exsicc.: CHIR [Reeves 3710, 3942]. SWRS [SWRS 1958-198, Cummings s.n.]. NMC [Townsend and Barber 64].

Oxalis stricta L.
Ceratoxalis coloradensis (Rydby.) Lunell, C. cymosa (Small) Lunell, Oxalis bushii (Small) Small, O. coloradensis Rydby., O. cymosa Small, O. europaea Jord., O. europaea var. bushii (Small) Weig., O. europaea var. rufa (Small) Young, O. fontana Bunge, O. fontana var. bushii (Small) Hara, O. interior (Small) Fedde, O. rufa Small, O. stricta var. decumbens Bitter, O. stricta var. pileotocarpa Weig., O. stricta var. rufa (Small) Farw., O. stricta var. villicaulis (Weig.) Farw., Xanthoxalis bushii Small, X. coloradensis (Rydby.) Rydby., X. cymosa (Small) Small, X. dillenii (Jacq.) Holub var. pileotocarpa (Weig.) Holub, X. interior Small, X. rufa (Small) Small, X. stricta (L.) Small, X. stricta var. pileotocarpa (Weig.) Moldenke
Yellow wood sorrel, chanchaquilla
Exsicc.: CHIR [Clark 8190, Reeves 1659, 4224]. Fobo [MHoy 102]. SWRS [SWRS 1959-249].

Eschscholtzia californica Cham. ssp.
Eschscholtzia mexicana Greene
Gold-poppy, California poppy
Exsicc.: CHIR [Reeves 2529]. Fobo [MHoy 397]. SWRS [Roth s.n.].

PEDALIACEAE (MARTYNIACEAE)
Unicorn-plant Family.
A family of stout annual or perennial herbs. Sixteen genera and 55 species are chiefly distributed in the Old World tropics with a few native to the New World tropics. Six genera and 10 species occur in North America of which Proboscidea with 4 indigenous species is the most widespread and occurs from Louisiana to California.

Proboscidea althaefolia (Benth.) Dcne.
Martynia althaefolia Benth., M. arenaria Engelm., Proboscidea arenaria (Engelm.) Dcne.
Devil's claw
Exsicc.: ASU [Niles 6603].

Proboscidea parviflora (Woot.) Woot. and Standl. ssp. parviflora
Martynia parviflora Woot., Proboscidea crassibracteata Correll
Unicorn-plant, devil’s-claw
Chiricahua Mts.: Chiricahua Nat. Mon. in residential area, Stafford/Paradise Meadow; Fort Bowie Nat. Historic Site in South Canyon; Portal to Paradise road; beside Wilecox road. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleno Mts., Animas Mts., Dragoon Mts., Peloncillo Mts., Santa Rita Mts., Sierra de los Ajos. San Bernardino Ranch (Cochise Co.). Coconino, Greenlee (?), Graham, and Gila counties to Cochise and Pima counties. Western Texas to southern Arizona, southern California, and northern...
It consists of 12 genera and 168 species, largely of the American tropics and sub tropics. The family is of little economic importance.

**Phytolacca americana** L.

Pokeberry, sève
d5,400 ft. Aug. Perennial deciduous for a scapose or leafy-stemmed hemicyrptophyte; mesophyll, orthophyll. Uncommon on rich mesic bottoms.

Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon. Also Huachuca Mts., Cochise County near Patagonia (Santa Cruz County). Maine and Ontario to Florida, Texas, and Arizona. Temperate.

Exsic.: CHIR [Clark 8569].

**PLANTAGINACEAE—Plantain Family.**

A family of herbs or, rarely, branched subshrubs. A family of 3 genera and about 200 species and *Plantago* contains all but 3 of these. Thirty species of *Plantago* are widespread in this country. The *Plantaginaceae* are of importance primarily as a source of *Psyllium* seeds (*Plantago psyllium*) whose mucilaginous seed coats have made them of reputed laxative value. A number of species are noxious lawn weeds.

**Plantago lanceolata** L.

*Plantago alissima* auct. non L., *P. lanceolata* var. *sphaeroestachya* Mert. and Koch

Ribwort, buckhorn plantain

5,500 ft. [Apr]- [Sep]. Perennial deciduous for a rhizome geophyte, mesophyll, orthophyll. Uncommon on dry uplands, lawns and meadows.

Chiricahua Mts.: Southwestern Research Station. Also Sierra Ancha, Canelo Hills. Apache, Navajo, Coconino, Yavapai, Gila, Pinal, Cochise, and Pima counties. Widely distributed in the United States; naturalized from Europe. Temperate, Introduced.

Exsic.: SWRS [det. C. Mason].

**Plantago major** L.

Common plantain


Chiricahua Mts.: Chiricahua Nat. Mon. at Silver Spur Springs and Residential Area; Southwestern Research Station; West Turkey Creek. Naturalized from Europe. Also Pinaleño Mts., Sierra de los Ajos. Apache, Navajo, and Coconino counties to Cochise, Santa Cruz, and Pima counties. Widely distributed in the United States; naturalized from Europe. Sonora, Mexico. Temperate, Introduced.

Exsic.: CHIR [Clark 8269, Reeves 2862, 4544]. SWRS [Roth s.n.]. ARIZ [Blumer 1781].

**Plantago patagonica** Jacq.

*Plantago patagonica* var. *breviscapa* (Shinners)

Shinners, *P. patagonica* var. *gnaphaloides* (Nutt.)

Gray, *P. patagonica* var. *oblonga* (Morris)

Shinners, *P. patagonica* var. *spinulosa* (Dcne.)


Shinners, *P. purshii* var. *picta* Pilger, *P. purshii* var. *spinulosa* (Dcne.)


Plantain, Indian-wheat, Pursh plantain


Exsic.: CHIR [Clark 8913, Reeves 2583]. SWRS [Roth s.n.].

**PLATANACEAE—Plane Tree Family.**

A family of trees. The single genus (*Platanus*) is composed of about 8 species, indigenous to many regions of the northern hemisphere, exclusive of Africa. Four species occur in North America: two in the southwest, a third in the east and a fourth restricted to Mexico. The trees are mostly of ornamental value.

**Platanus wrightii** S. Wats.

*Platanus racemosa* Nutt. var. *wrightii* L. Benson

Arizona sycamore, button-wood, plane-tree


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; Whitewater Draw; Portal to Paradise road; Price Canyon; John Long Canyon; Turkey Creek Canyon; Cottonwood Canyon; South Fork Cave Creek; Cave Creek; Whetstail Canyon; East Whetstail Creek; Indian Creek; Cub Canyon; Finery Canyon; North Fork Finery Canyon. Also Huachuca Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Rincon Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Southern parts of Coconino and Mohave counties of Greenlee, Cochise, Santa Cruz, and Pima counties. The Mogollon Escarpment coincides approximately with the northern limit of this species in Arizona. New Mexico, Arizona, and northern Mexico. Madrean.

The largest Chiricahua individual is on State Highway 181 which measures 26 ft. in circumference.

Exsic.: CHIR [Clark 8248, Reeves 1635]. SWRS [SWRS 1959-248]. CHWA [Leithliter 448].

**POACEAE (GRAMINEAE)—Grass Family.**

A family of annual or perennial herbs, or rarely woody plants (bamboos). Roots fibrous, rhizomes present or absent. This is the largest and most widely distributed family of vascular plants. Forms the vegetative climax over vast areas of low annual rainfall. There are between 450 and 525 genera and 168 genera...
Aegopogon tenellus (DC.) Trin.
*Aegopogon tenellus* (DC.) Trin. var. *abortivus* (Fourn.) Beet., *Lamarckia tenella* DC.
5,000 - 7,000 ft. Aug - Sep. Summer annual graminoid, semirotollic herb. Open ground in the mountains.


Presence in Chiricahua Mts. from Kearney et al. (1960) and in Mule Mts. from Kearney et al. (1960) and Wentworth (1982).

Agrostis exarata Trin. var. *minor* Hook.
*Agrostis exarata* ssp. *minor* (Hook.) C.L. Hitchc.
*A. exarata* var. *purpurascens* Hultén


Exsicc.: CHIR [Leithliter 146, 778, 819].

Agrostis scabra Willd.
Bentgrass, ticklegrass

Chiricahua Mts.: Chiricahua Nat. Mon. in Hunt Canyon, North Bonita Canyon; below Herb Martyr Dam; Ruisler Park; East Turkey Creek 5 mi. above Southwestern Research Station; Wilderness Area, Rucker Canyon; Centella Point; Cave Creek; Mormon Canyon. Also Rincon Mts., Santa Catalina Mts., Pinaleño Mts., Animas Mts., Huachuca Mts., Dragon Mts., Santa Rita Mts., Rincon Mts. Aspen, Navajo, Coconino, Yavapai, Graham, Cochise, and Pima counties; Newfoundland and Alaska, south to Florida, Texas, and California. Probably adventive in the southern states. Northern.

Forage grass.

Exsicc.: CHIR [Clark 8669, 9231, Dodd 27A, 35-37, Moir 500].

Aristida adscriptionis L.
Six-weeks thrreawn
5,150 - 5,500 [6,000] ft. Aug - Sep [or whenever conditions favorable]. Summer annual grass, semirotollic herb; nanophyll, orthophyll. Common on sunny hillside, talus slopes, and flats. *Pinus discolor*, *Quercus emoryi*.


Good forage when young but pointed hard seeds may damage cattle. One of the weeds that spread in early days from the New World to the Old.

Exsicc.: CHIR [Clark 8669, 9231, Dodd 27A, 35-37, Moir 500].

*Aristida arizonica* Vasey
Arizona three-awn


Exsicc.: ARIZ [Gould and Haskell 4562].

*Aristida divaricata* Humb. and Bonpl. ex Willd.
Poverty thrreawn


Aristida harvardii Vasey.
Aristida barbata Fourn.

Harvard threeawn

Chiricahua Mts.: Chiricahua Nat. Mon. west of monument, residential area; Portal to Paradise road. Also Santa Catalina Mts., Mule Mts., Animas Mts. Navajo, Coconino, Yavapai, Cochise, and Pima counties. Western Texas to Arizona, south to southern Mexico. Madrean.

Panicles fragile at maturity, break away from the plant and roll before the wind.

Exsicc.: CHIR [Reeves 1698]. SWRS [Cummins 197-61].

Aristida orcuttiana Vasey
Aristida schiedeana auct. non Trin. and Rupe.

Beggar tick grass


Exsicc.: CHIR [Clark 8458, Moir 432, 470, 551, Reeves 1625]. SWRS [1958-25].

Aristida pansa Woot. and Standl.

Wooton threeawn


Exsicc.: ARIZ [Thornber s.n.].

Aristida purpurea Nutt. var. fendleriana
(Steud.) Vasey

*Aristida fendleriana* Steud.

Fendler threeawn

Chiricahua Mts.: Chiricahua Nat. Mon. at Massai Point. Also Sierra Ancha. Apache County to Mohave County, south to Cochise, Maricopa, and Pinal counties. North Dakota and Montana, south to Texas and southern California; Mexico. Western.

Exsicc.: CHIR [Reeves 3459].

Aristida purpurea Nutt. var. longiseta (Steud.) Vasey

*Aristida longiseta* Steud., *A. longiseta var. rafiflora* A.S. Hitchc., *A. longiseta var. robusta* Merr., *A. purpurea var. robusta* (Merr.) Piper

Red threeawn


Exsicc.: CHIR [Clark 8110]. FOBO [MHoy 165]. SWRS [Cummins 204-61].

Aristida purpurea Nutt. var. Nealleyi (Vasey) Allred


Allred

*Aristida glauca* (Nees) Walp., *Aristida nealleyi* (Vasey) Vasey. *A. purpurea var. glauca* (Nees)


Chiricahua Mts.: Fort Bowie Nat. Historic Site at ruins; Paradise to Portal road. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts. Navajo, Coconino, Mohave, Yavapai, Cochise, Santa Cruz, Pima, and Yuma counties. Western Texas to Utah, Nevada, Arizona, and southern California, south to central Mexico. Southwestern.

Exsicc.: FOBO [MHoy 217]. SWRS [Cummins 57-39].

Aristida purpurea Nutt. purpurea

*Aristida purpurea* var. laxiflora Merr., *A. roemeriana* Scheele

5,000 ft. Perennial graminoid, semirosette herb.

Uncommon on gravelly flats, rocky slopes, dry upper bajadas.


Exsicc.: FOBO [MHoy 18].

Aristida ternipes Cav. var. hamulosa (Henr.) Trent

*Aristida hamulosa* Henr.

Spidergrass


Mexico, and Arizona to northern South America; Bahamas, Cuba, Madrean, Latin American.

**Exsicc.: CHIR [Moir 509, Reeves 4459]. FOBO [MHoy 4, 374].**

**Avena fatua L.**
**Avena fatua var. glabrata** Peterm., **A. fatua var. vilis** (Walr.) Hausskn.  
Wild oats  

**Chiricahua Mts.:** Barfoot Park. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Apache, Coconino, and Mohave counties to Cochise and Pima counties. Maine to Pennsylvania, Missouri, South Dakota, New Mexico, Arizona, and California; introduced from Europe. Temperate, Introduced.

**Exsicc.: ARIZ [Blumer 1374].**

**Blepharoneuron tricholepis** (Torr.) Nash  
**Vilfa tricholepis** Torr.  
Pine dropseed  

**Chiricahua Mts.:** Chiricahua Nat. Mon. on north face of Sugarloaf Mtn.; Greenhouse Trail; Rustler Park; Barfoot Park; Centella Point; West Turkey Creek at Sycamore Campground. Also Huschua Mts., Rincon Mts., Pinaleño Mts., Mt. Graham, Dos Cabezas Mts., Mule Mts., Canelo Hills, Sierra Ancha, Santa Catalina Mts., Mule Mts., Animals Mts., Santa Rita Mts., Sierra de los Ajos. Apache County to Mohave County, south to Cochise, Pima, and Yuma counties. Introduced from Europe. Temperate, Introduced.

**Exsicc.: ARIZ [MHoy 34].**

**Bothriochloa barbinodis** (Lag.) Herter var. barbinodis  
**Andropogon barbinodis** Lag.  
Cane beargrass  


**Exsicc.: CHIR [Clark 8508, Reeves 1539, 3452, 3776, 4212, 4343]. FOBO [MHoy 405]. SWRS [Cummins 198-61].**

**Bouteloua aristidoides** (Kunth) Griseb.  
Needle grama  


**Exsicc.: CHIR [Dodd 10, Reeves 1649A, 1680B]. FOBO [MHoy 539].**

**Bouteloua barbarata Lag.**  
**Bouteloua arenosa** Vasey, **Chondrosium exile** Fourn., **C. microstachyum** Fourn., **C. polystachyum** Benth., **C. subsorcioides** C. Mueller  
Six-weeks grama  
[1,000] 4,800 - 5,100 [5,500] ft. [May] Jul - Sep [Oct]. Summer annual grass, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Uncommon on grassland, gravelly flats, often on disturbed ground. **Prosopis glandulosa**.


**Exsicc.: CHIR [Reeves 1644A]. FOBO [MHoy 184]. SWRS [SWRS 1958-553].**

**Bouteloua chondrosioides** (Kunth) Benth. ex S. Wats.  
**Chondrosium humboldtianum** Kunth, **Dinebra chondrosioides** Kunth  
Spruce-top grama  


**Exsicc.: FOBO [MHoy 34].**

**Bouteloua curtipendula** (Michx.) Torr.  
Side oats grama  

**Chiricahua Mts.:** CHIR 1 mi. down from Sugarloaf turnoff, Hunt Canyon, Rock Canyon, slopes along southern boundary; Fort Bowie Nat. Historic Site at ruins; Portal to Paradise road; Wilderness Area. Also Huschua Mts., Rincon Mts., Pinaleño Mts., Mt. Graham, Sierra Ancha, Santa Catalina Mts., Mule Mts., Animals Mts., Canelo Hills, Sierra de los Ajos. Throughout Arizona. Maine and Ontario to Montana, south to Maryland, Alabama, Texas, Arizona, and southern California; Mexico to El Salvador; Columbia to Argentina. Temperate, Latin American.
Bouteloua eludens Griffiths


Bouteloua eriopoda (Torr.) Torr.

Chondrosum eriopodium Torr.

Black grama


Bouteloua gracilis (Willd. ex Kunth) Lag. ex Griffiths


Blue grama


Bouteloua hirsuta Lag. var. glandulosa

(Cerv.) Gould

Bouteloua glandulosa (Cerv.) Swallen

Hairy grama


Bouteloua radicosa (Fourn.) Griffiths

Atheropogon radicosus Fourn.

Purple grama


Bouteloua repens (Kunth) Scribn. and Merr.

Bouteloua filiformis (Fourn.) Griffiths, B. heterostega (Trin.) Griffiths, Dinebra repens Kunth

Slender grama


Bouteloua rothrockii Vasey

Bouteloua barbata Lag. var. rothrockii (Vasey) Gould

Rothrock grama


Brachiaria arizonica (Scribn. and Merr.) S.T. Blake

Panicum arizonicum Scribn. and Merr.

Arizona panicum


Exsic.: CHIR [Reeves 4104, 4132, 4178A]. SWRS [Cummins 206-6].


Nodding brome


Bromus arizonicus (Shear) Stebbins


Chiricahua Mts.: Wilderness Area; Monte Vista Peak. Also Rincon Mts., Pinaleño Mts. Almost throughout Arizona. Arizona, California, and Baja California. Sonoran.

Exsic.: CHWA [Leithliter 287].

Bromus carinatus Hook. and Arn.

*Bromus carinatus* var. *californiae* (Nutt. ex Buckl.) Shear, *B. carinatus* var. *hookerianus* (Thurb.) Shear, *Ceratochloa carinata* (Hook. and Arn.) Tutin California brome


Chiricahua Mts.: Chiricahua Nat. Mon. in Silver Spur Meadow; Southwestern Research Station; Wilderness Area, Monte Vista Peak; Centella Point. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Canelo Hills. Apache County to Coconino County, south to Cochise and Pima counties. Montana to British Columbia, south to New Mexico, Arizona, California, and northern Mexico. Western.

Exsic.: CHIR [Reeves 1548, 4548]. SWRS [SWRS 1960-190]. CHWA [Leithliter 289, 605 737, 767].

Bromus ciliatus L.


Fringed brome


Rominger and Laurnezi (1986).


Bromus frondosus (Shear) Woot. and Standl.

*Bromopsis frondosis* (Shear) Holub

Weeping bromegrass


Exsic.: CHWA [Leithliter 537].

Bromus hordeaceus L. ssp. hordeaceus

*Bromus mollis aut. non L.*

Soft chess


Chiricahua Mts.: Chiricahua Nat. Mon. Coconino, Gila, Pinal, Pima, Cochise counties. Alien introduced from Europe and found throughout the U.S. Temperate, Introduced.

Exsic.: CHIR [Reeves 3280].

Bromus japonicus Thunb. ex Murr.

*Bromus japonicus* var. *porrectus* Hack., *B. patusus* Mert. and Koch

Jun. Summer annual grass, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Dry uplands, fields and waste places.

Chiricahua Mts.: Southwestern Research Station. Also Sierra Ancha. Apache, Navajo, Coconino, Gila, Cochise, and Pima counties. Throughout the United States; introduced from the Old World. Temperate, Introduced.

Exsic.: SWRS [SWRS 1959-767].

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Bromus polyanthus Scribn.
_Bromus marginatus Nees ex Steud. var. seminudus_ Shear, _B. paniculatus_ (Shear) Rydb., _Ceratocloa polyantha_ (Scribn.) Tzvelev
_Pseudosuga menziesii, Abies concolor._
_Cirica hua Ms.: Barfoot Park. Also Huachuca Ms., Santa Catalina Ms._
_Exsicc.: ARIZ [Blumer 29, 130, 149]. Repository unknown (Blumer 1367).

Bromus tectorum L.
Downy brome, cheatgrass brome
5,000 - [7,400] ft. Winter annual grass, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Uncommon on disturbed ground. Alien species. Dry uplands, waste places.
_Cirica hua Ms.: Fort Bowie Nat. Historic Site on roadside east of trailer. Also Rincon Ms., Sierra Ancha, Animas Ms. Navajo, Cocino, and Yavapai counties. Throughout the United States except the southeast; introduced from Europe. Temperate, Introduced._
_Exsicc.: FOB0 [MHoy 406].

Cenchrus carolinianus Walt.
_Cenchrus incertus_ M.A. Curtis, _C. parviceps_ Shinners, _C. pauciflorus_ Benth.
Field sandbur
[0] 5,000 - 5,100 [5,500] ft. Jun [Jul] - [Sep].
Summer annual grass, semirotsete therophyte; nanophyll, orthophyll. Uncommon on grassland, sandy ground, roadsides, waste places.
_Cirica hua Ms.: Cirica hua Nat. Mon.; Fort Bowie Nat. Historic Site on road east of trailer; Cottonwood Canyon. Also Huachuca Ms., Rincon Ms., Pinaleno Ms., Animas Ms. Navajo and Cocino counties, south to Cochise, Santa Cruz, and Pima counties. Maine and Ontario to Washington, south through Mexico and the West Indies to Argentina. Temperate, Latin American._
_Forage when young but the burrs are barbed, difficult to extract, and noxious to both man and beast._
_Exsicc.: CHIR [Reeves 2929].

Chloris virgata Sw.
Feather fingergrass
3,880 - 5,400 ft. Aug - Sep. Summer annual grass, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Uncommon in grassland. Alien ruderal species from old world colonizing waste spaces and disturbed ground. Prefers damp soil but also found on dry uplands.
_Cirica hua Ms.: Cirica hua Nat. Mon. at mouth of Rhodite Canyon, mouth of Pickett Canyon. Fort Bowie Nat. Historic Site: ruins; San Simon Cienega. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Pinaleno Ms., Animas Ms., Sierra de los Ajos. Navajo, Cocino, and Mohave counties to Greenlee, Cochise, Santa Cruz, Pima, and Yuma counties. Nebraska to Texas, West to Nevada, Arizona, and southern California; tropical America and the Old World. Southwestern, Latin American, Introduced._
_Exsicc.: Clark 8668, Dodd 21-23, Reeves 1643, 4494A, MHoy 20.

Cynodon dactylon (L.) Pers. var. dactylon
_Capriola dactylon_ (L.) Kunze, _Panicum dactylon_ L.
_Bermuda grass_
_Cirica hua Ms.: Cirica hua Nat. Mon. in Silver Spur Meadow; Fort Bowie Nat. Historic Site in upper Syphon Canyon; Southwestern Research Station. Also Huachuca Ms., Rincon Ms., Santa Catalina Ms., Mule Ms., Pinaleno Ms., Sierra de los Ajos. Throughout state. New Hampshire to Michigan, south to Florida, Arizona, and southern California; Sonora, Mexico. Alien to America. Temperate, Introduced._
_Widely planted for lawns and pasture. Bulk of the world's seed supply comes from Yuma area. Planting in Arizona prohibited because pollen causes hay fever._
_Exsicc.: CHIR [Reeves 3283, 3463].

Dactylis glomerata L. ssp. glomerata
_Dactylis glomerata_ var. ciliata Peterm., _D. glomerata_ var. detonsa Fries, _D. glomerata_ var. _vivipara_ Parl.
_Cirica hua Ms.: Southwestern Research Station. Also Pinaleno Ms., Sierra Ancha. Navajo, Cocino, Graham, and Gila counties. Newfoundland to Alaska, south to Florida, Arizona, and California; introduced from Eurasia. Holartic, Introduced._
_Exsicc.: SWRS [SWRS 1958-471].

Danthonia californica Boland
_Danthonia americana_ Scribn., _D. californica_ var. _americana_ (Scribn.) A.S. Hitchc., _D. californica_ var. _palouensis_ St. John, _D. californica_ var. _piperi_ St. John
_Cirica hua Ms.: Round Park. Also Rincon Ms., Pinaleno Ms. Graham County. Montana to British Columbia, south to Colorado, Arizona, and California. Western._
_Cirica hua distribution fide Russell (1982)._

Exsicc.: CHIR [Reeves 4922].

Echinochloa crus-galli (L.) Beauv. var. crusgalli

Echinochloa pungens (Poir.) Rydb. var. coarctata

Panicum crus-galli L.

Barnyard grass

[150] 4,900 - 6,100 [7,000] ft. Jul - Sep. Summer annual graminoid, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Uncommon on moist ground along ditches and in waste places. *Pinus engelmannii*, *P. leiophylla*, *P. discolor*, *Quercus arizonica*, *Q. hypoleucoides*.


Exsicc.: CHIR [Reeves 1479]. ARIZ [Barr 63-325].

Echinochloa muricata (Beauv.) Fern. var. microstachya Wieg.


Chiricahua Mts.: Chiricahua Nat. Mon. in Whittail Canyon; Fort Bowie Nat. Historic Site in South Canyon; Southwestern Research Station. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Animas Mts., Sierra de los Ajos. Havasu Canyon (Coconino County) and Greenlee, Gila, Maricopa, Pinal, Cochise, Santa Cruz, and Pima counties. Sonora, Mexico. Temperate. Introduced.


Dichanthelium oligosanthes (J.A. Schultes) Gould var. scriberianum (Nash) Gould

Dichanthelium oligosanthes (Nash) Mohlenbrock,


Exsicc.: ARIZ [A.C. Sanders 2856].

Digitaria californica (Benth.) Henr.

Trichachne californica (Benth.) Chase

Cotton-top

[1,000] - 5,000 [6,000] ft. [Mar] - Oct. Perennial graminoid, scapose or leafy-stemmed hemgraminoid, common on dry rocky slopes, mesas and rocky hills in open ground.


Furnishes a considerable quantity of palatable forage for a short period following spring or summer rain.

Exsicc.: Fobo [MHoy 10].

Digitaria cognata (J.A. Schultes) Pilger

Digitaria arenicola (Swallen) Beetle, Leptoloma arenicola Swallen, L. cognatum (J.A. Shultes) Chase var. *arenicola* (Swallen) Gould

Fall withchgrass


Exsicc.: FOBO [MHoy 152]. SWRS [SWRS 1959-48].

Digitaria sanguinalis (L.) Scop.

Panicum sanguinale L., Syntherisma sanguinalis (L.) Dulac

Crabgrass


Chiricahua Mts.: Chiricahua Nat. Mon. in Whittail Canyon; Fort Bowie Nat. Historic Site in South Canyon; Southwestern Research Station. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Animas Mts., Sierra de los Ajos. Havasu Canyon (Coconino County) and Greenlee, Gila, Maricopa, Pinal, Cochise, Santa Cruz, and Pima counties. Sonora, Mexico. Temperate. Introduced.

Exsicc.: ARIZ [Blumer 1782].
Elymus arizonicus (Scribn. and J.G. Sm.) Gould
Agropyron arizonicum Scribn. and J.G. Sm., A. spicatum (Pursh) Scribn. and J.G. Sm. var. arizonicum (Scribn. and J.G. Sm.) M.E. Jones, Elytrigia arizonica (Scribn. and J.G. Sm.) Dewey, Pseudoregeneria arizonica (Scribn. and Merr.) A. Löve

Arizona wheatgrass


Chiricahua Mts.: Chiricahua Nat. Mon. on north side of Sugarloaf Mtn., upper Jesse James Canyon; Wilderness Area; Barfoot Park; Rustler Park; Greenhouse Trail below Cima Park; Long Park; Rucker Canyon; Mormon Canyon; Onion Saddle. Also Rincon Mts., Santa Catalina Mts., Huachuca Mts., Santa Rita Mts., Baboquivari Mts., Pinaleño Mts., Canelo Hills, Drought Mtns., Animas Mts., Sierra de los Ajos, Graham, Cochise, Santa Cruz, and Pima counties; northern California to western Texas, Chihuahua, Sonora, Mexico. Southwestern.

Exsic.: CHIR [Clark 8390, Reeves 3978, 4280]; CHWA [Leithliter 287, 861]. ARIZ [Reeder 1467, Procter 17, Gould 2921].

Elymus canadensis L. var. canadensis
*Elymus brachystachys* Scribn. and Ball, E. canadensis var. brachystachys (Scribn. and Ball) Farw., E. canadensis var. hirsutus (Farw.) Dorn, E. canadensis var. robustus (Scribn. and J.G. Sm.) Mackenzie and Bush, E. crescendus L.C. Wheeler, E. philadelphicus L., E. philadelphicus var. hirsutus Farw., E. robustus Scribn. and J.G. Sm.

Canada wild rye


Exsic.: ARIZ [Blumer U.223, U.224].

Elymus elymoides (Raf.) Sweezy
*Elymus elymoides* var. brevifolius (J.G. Sm.) Dorn, *E. longifolius* (J.G. Sm.) Gould, *E. stitianon Shultes, Stiganon elymoides* Raf., *S. hystrix* (Nutt.) J.G. Sm., *S. hystrix* var. *brevifolium* (J.G. Sm.) C.L. Hitchc., *S. hystrix var. californicum* (J.G. Sm.) F.D. Wilson, *S. longifolium* J.G. Sm.

Bottlebrush squirreltail


Exsic.: CHIR [Clark 8112, Reeves 2797, 2874, 3970]. FOBO [MHoy 17]. SWRS [SWRS 1959-17].

Elymus trachycaulus (Link) Gould ex Shinners
*Agropyron trachycaulus* (Link) Malte ex H.F. Lewi


Chiricahua Mts.: Centella Point; Barfoot Park. Also Santa Rita Mts., Sierra Ancha, Pinaleño Mts. Coconino County to Apache County and south to Cochise County. Newfoundland to Alaska, south to Western Virginia, Missouri, Arizona, and California. Northern, Temperate

Exsic.: ARIZ [Fishbein and Reeder 446, Blumer 185, 1422]. SWRS [Ordway s.n.]

Elyonurus barbiculmis Hack.
*Elyonurus barbiculmis parviflorus* Scribn.


Chiricahua Mts.: Chiricahua Nat. Mon. in Jesse James Canyon Natural Area; Tex Canyon. Also Huachuca Mts., Rincon Mts., Mule Mts. Mohave, Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Chihuahuan.

Exsic.: CHIR [Reeves 1572]. SWRS [SWRS 1959-821].

Enneapogon desvauxii Beauv.
*Pappophorum wrightii* S. Wats.


Eragrostis ciliensis (All.) Lut. ex Janchen
*Eragrostis major* Host, *E. megastachya* (Koel.) Link, *Poa ciliensis* All.

Stinkgrass


Chiricahua Mts.: Chiricahua Nat. Mon. at Stafford Cabin; Fort Bowie Nat. Historic Site at ruins. Also Huachuca Mts., Rincon Mts., Animas Mts. Coconino County to Mohave County, south to Graham, Santa Cruz, Pima and Yuma counties. Throughout the United States except at higher altitudes, southward to Argentina; introduced from Europe. Temperate, Introduced.
Eragrostis pectinacea (Michx.) Nees ex Steud. var pectinacea
Eragrostis caroliniana (Biehler) Scribn., E. diffusa Buckl., E. purshii Hort. ex Schrad., Poa pectinacea Michx.

Carolina lovegrass


Exsicc.: CHIR [Ordway 155]. SWRS [Ordway 530-538].

FOBO [MHoy 4491]. SWRS [Dodd 14-26, Reeves 4447D].

Eragrostis pectinacea (Nees ex Steud. var. miserrima (Fourn.) J. Reeder
Eragrostis arida A.S. Hitchc., E. tephrosanthos J.A. Schultes

Desert lovegrass, gulf lovegrass

Chiricahua Mts.: Chiricahua Nat. Mon. Fort Bowie Nat. Historic Site in South Canyon; Southwestern Research Station. Also Animas Mts. Final, Cochise, Santa Cruz, and Pima counties. Missouri (where probably introduced) and Texas to Arizona. Southwestern.

Exsicc.: CHIR [Lehto 3339, Moir 479, Reeves 1276, Reeves 4478A]. SWRS [Ordway 155].

Eriochloa lemmoni Vasey and Scribn.
Southwestern cupgrass


Exsicc.: CHIR [Dodd 24-26, Reeves 4447D]. SWRS [1958-538].

Erioneuron grandiflorum (Vasey) Tateoka
Erioneuron avenaceum (Kunth) Tateoka var.
grandiflorum (Vasey) Gould, Tridens grandiflorus (Vasey) Woot. and Sandl.


Exsicc.: SWRS [1958-525].
Erioneuron pulchellum (Kunth) Tateoka
Dasyochloa pulchella (Kunth) Wild. ex Rydb.,
Tridens pulchellus (Kunth) A.S. Hitchc.

Fluffgrass

Perennial graminoid, scapose or leafy-stemmed
hemicyryptophyte. Uncommon in full sun on rocky hills,
sometimes on disturbed sites. Selioila iberica.

Chiricahua Mts.: Chiricahua Nat. Mon. in housing areas;
Fort Bowie Nat. Historic Site at ruins; 6 mi. east of Portal. Also
Huachuca Mts., Rincon Mts., Santa Ancha, Santa Catalina Mts.,
Utah and Nevada to western Texas, Arizona, and southern California.
Western.
Exsiccat: CHIR [Leithliter 138].

Festuca arizonica Vasey
Arizona fescue

graminoid, rosette hemicyryptophyte. Common in forest openings
and dry meadows, becomes confined to drainages at lower
elevations.

Chiricahua Mts.: Wilderness Area. Also Pinaleño Mts.,
Santa Catalina Mts. Apache, Coconino, Yavapai, Greenlee,
Graham, and Pima counties. Colorado, Nevada, New Mexico,
and Arizona. Southwestern.
Exsiccat: CHWA [Leithliter 817].

Festuca ?ovina L.
Sheep fescue

[7,000] - 8,380 [12,500] ft. Jul - [Sep]. Perennial
graminoid, rosette hemicyryptophyte. Uncommon along
streambeds, open woods, and rocky slopes.

Chiricahua Mts.: Wilderness area. Also Pinaleño Mts.,
Santa Catalina Mts. Apache, Coconino, Yavapai, Greenlee,
Graham, and Pima counties. Colorado, Nevada, New Mexico,
and Arizona. Southwestern.
Exsiccat: CHIR [Dodd 34, Reeves 1696].

Festuca pratensis Huds.
Festuca elatior L. pro parte, F. shortii Kunth ex
Wood
Meadow fescue, English bluegrass

5,400 ft. Jul. Perennial graminoid, scapose or leafy-
stemmed hemicyryptophyte; microphyll, orthophyll. Uncommon
in residential areas, yards, meadows and waste places.

Chiricahua Mts.: Chiricahua Nat. Mon. Apache, Navajo
and Coconino counties. Introduced in the cooler regions of North
America; native of Eurasia. Holarctic.
Exsiccat: CHIR [Leithliter 3462].

Festuca sororia Piper

graminoid, semirosette hemicyryptophyte. Open woods and forest
openings, mesic slopes; deep canyons at lower elevations.

Chiricahua Mts.: Centella Point; northwest side Buena
Vista Peak; below Cima Park; Mormon Canyon. Also Santa
Catalina Mts., Pinaleño Mts., Huachuca Mts. Coconino,
Graham, Coche, and Pima counties. Colorado, Utah, New
Mexico, and Arizona. Rocky Mountain.
Exsiccat: ARIZ [Fishbein 487, Van Devender 85-196, s.n.].

Glyceria borealis (Nash) Batchelder
Paniculicaria borealis Nash

[7,000] - 8,200 [9,000] ft. Aug. Perennial graminoid,
scapose or leafy-stemmed therophyte; microphyll, orthophyll.
Very wet or aquatic sites.

Chiricahua Mts: Barfoot Park. Also Huachuca Mts.
Apache, Coconino, Cochise, and Pima counties. Newfoundland
to Alaska, southward to Massachusetts, New Mexico, Arizona
and California. Reported collected by J.C. Blumer in Barfoot
Park by Russell (1982).

Glyceria elata (Nash ex Rydb.) M.E. Jones
Tall managrass

Fowlmanagrass

[5,000] - 8,860 [9,000] ft. Jul - Sep. Perennial graminoid,
scapose or leafy-stemmed hemicyryptophyte. Uncommon on wet
soil by streams, springs, and pools, wet meadows and moist
woods.

Chiricahua Mts.: below Herb Martyr Dam. Also Rincon
White Mts. Apache County, Oak Creek Canyon (Coconino
County), Graham, Coche, and Pima counties. Montana to
British Columbia, south in the mountains to New Mexico,
Arizona, and southern California. Western.
Exsiccat: SWRS [Cummins 57-18]. CHWA [Leithliter 137].

Glyceria striata (Lam.) A.S. Hitchc.
Fowl managrass

graminoid, scapose or leafy-stemmed hemicyryptophyte;

Chiricahua Mts. base of Winn Falls. Also Sierra Ancha,
White Mts., Pinaleño Mts. Apache and Navajo counties,
Coconino County, Gila County and Cochise County.
Newfoundland to British Columbia, southward to Florida,
Arizona, and northern California. Temperate.
Exsiccat: SWRS [Roth s.n.].

Hackelochloa granularis (L.) Kuntze
Cenchrus granularis L., Rynlrix granularis (L.)

Skeels

5,400 ft. Aug - Sep [Oct]. Summer annual grass, scapose
or leafy-stemmed therophyte; leptophyll, orthophyll. Uncommon
on grassland/scrub, sandy plains and waste places.

Chiricahua Mts.: Chiricahua Nat. Mon. on the slopes of
lower Bonita Canyon. Cochise, Santa Cruz, and Pima counties.
Georgia and Florida to Louisiana, New Mexico, and Arizona;
tropics of both hemispheres, introduced in America. Temperate.
Introduced.
Exsiccat: CHIR [Dodd 34, Reeves 1696].

Heteropogon contortus (L.) Beauv. ex Roemer
Andropogon contortus L.

Tanglehead

[1,000] 5,100 - 6,100 ft. [Occasionally Jan] Jun - [Sep]
[Occasionally Apr]. Perennial graminoid, semirosette
hemicyryptophyte. Uncommon in woodlands, alluvium, dry
gravelly and rock slopes, sandy plains and canyons.

Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat.
Historic Site on hill northeast of overlook; Greenhouse Canyon
Trail; Southern Research Station. Also Huachuca Mts.,
Rincon Mts., Pinaleño Mts., Santa Ancha, Santa Catalina Mts.,
Muile Mts., Sierra de los Ajos. Mohave, Yavapai, Pinal,
Hilaria belangeri (Steud.) Nash var. belangeri Antcephora belangeri Steud.

Curly mesquite


Exsicc.: CHIR [Clark 9194, Dodd 38, Mohr 499, Reeves 4077, 4099]. SWRS [SWRS 1959-766].

Hilaria mutica (Buckl.) Bent.

Tobosa grass


Exsicc.: Fort Bowie Nat. Historic Site [MHoy 396].

Hordeum brachyantherum Nevski

Critesion brachyantherum (Nevski) Barkworth and Dewey, Hordeum boreale Scribn. and J.G. Sm., H. jubatum L. var. boreale (Scribn. and J.G. Sm.) Boivin, H. nodosum pro parte L., H. nodosum var. boreale (Scribn. and J.G. Sm.) A.S. Hitchc.


Hordeum murinum L. ssp. leporinum (Link)

Arcang.

Critesion murinum (L.) A. Löve ssp. leporinum (Link) A. Löve, Hordeum leporinum Link

Mouse barley

5,000 - 5,400 ft. Feb - Apr [Jun]. Winter annual grass, scapose or leafy-stemmed therochrypt; microphyll, orthophyll. Common on disturbed ground, roadsides, and washes. Salsola iberica.

Chirichahua Mts.: Fort Bowie Nat. Historic Site at dump; Southwestern Research Station near lab; 5 mi. southwest of Portal Barfoot Park. Also Huachuca Mts., Rincon Mts. Alien species. Coconino and Cochise counties. Massachusetts to Georgia; British Columbia to western Texas, Arizona, and California; introduced from Europe. Temperate, Introduced.

Exsicc.: FOBO [MHoy 101]. SWRS [Elliot s.n.]. Repository unknown [Blumer 1587].

Koeleria macrantha (Ledeb.) J.A. Schultes


Mountain junegrass, prairie junegrass


Chirichahua Mts: Chirichahua Nat. Mon. in East Whittelite Canyon, north of Sugarloaf Mill, mouth of Rhyolite Canyon; Fort Bowie Nat. Historic Site in upper South Canyon, Apache Pass; Rucker Canyon; Wilderness Area; Centella Point; Barfoot Park; Greenhouse Trail; Long Park; Onion Saddle; West Turkey Creek near ranger station; upper Cave Creek. Also Rincon Mts., Finalelo Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Dos Cabezas Mts., Rincon Mts., Baboquivari Mts., Quinlin Mts., Santa Rita Mts., Huachuca Mts., Sierra de los Ajos. Apache County to Mohave and Yavapai counties, south to Cochise and Pima counties. Ontario to British Columbia, south to Delaware, Missouri, Louisiana, Arizona, California, and Mexico. Temperate.


Leptochloa dubia (Kunth) Nees

Diplachne dubia (Kunth) Scribn.

Green spangletop


Exsicc.: CHIR [Dodd 17-20, Reeves 4484]. FOB0 [MHoy 483]. SWRS [Anderson s.n.].

Lolium perenne L. ssp. multiflorum (Lam.) Husnott

Lolium multiflorum Lam., L. multiflorum var. diminutum Matul., L. multiflorum var. multiflorum DC., L. multiflorum var. ramosum Guss. ex Arcang., L. perenne var. multiflorum (Lam.) Parnell


Exsicc.: SWRS [SWRS 1960-280].
Muhlenbergia asperifolia (Nees and Meyen ex Trin.) Parodi

*Sporobolus asperifolia* (Nees and Meyen) Nees

Scratchgrass, alkali muhly


Chiricahua Mts.: Chiricahua Nat. Mon. at mouth of Bonita Canyon, Silver Spur Meadow. Also Animas Mts., Canelo Hills. Apache County to Coconino County, south to Pima County. Wisconsin to British Columbia, south to Mexico, southern South America. Western, Latin American.

Exsic.: CHIR [Reeves 1398].

Muhlenbergia emersleyi Vasey

*Bullgrass*


**Muhlenbergia arenaceae** (Buckl.) A.S. Hitchc.

*Bush muhly, ear muhly*


Chiricahua Mts.: East Turkey Creek; Wilderness Area, Winn Falls. Also Sierra Ancha, Santa Catalina Mts., Pinafore Mts. Cochise and Pima counties. Southwestern.


**Muhlenbergia arenicola** Buckl.

*Sand muhly*


Chiricahua Mts.: Fort Bowie Nat. Historic Site at ruins; Kollmar Ranch. Also Baboquivari Mts. Cochise County, Nogales (Santa Cruz County), and Pima County. Texas to southern Arizona and Sonora. Madrean.


**Muhlenbergia arizonica** Scribn.

*Arizona muhly*


Exsic.: CHIR [Reeves 2274].
Muhlenbergia glauca (Nees) B.D. Jackson
*Muhlenbergia lemnosii* Scribn.


Exsicc.: NMC [Goodding M-321], ARIZ [Keller 867, Moir 424].

Muhlenbergia longiligula A.S. Hitchc.

Longtongue muhly


Chiricahua Ms.: Chiricahua Nat. on Picket Park, Bonita Canyon; Gravehouse Trail; East Turkey Creek, Rustler Park near Onion Saddle; Wilderness Area, Cave Creek. Also Huachuca Ms., Rincon Ms., Pinaleño Ms., Sierra Ancha, Santa Catalina Ms., Animas Ms., Sierra de los Ajos. Apache, Navajo, and Coconino counties to Cochine, Santa Cruz, and Pima counties.

Exsicc.: CHIR [Moir 419, 426, 511, 517, Reeves 1376, 1720, 3753, 4254, 4511], SWRS [Cummins 57-84, Buman s.n.], CHWA [Leihlitzer 315, 642, 733], ASU [Moir 58, 59, 64; Cazier 996; Goodding 304-62].

Muhlenbergia montana (Nutt.) A.S. Hitchc.

Mountian muhly


Exsicc.: SWRS [SWRS 1959-779], CHWA [Leihlitzer 37, 547].

Muhlenbergia pauciflora Buckl.

New Mexican muhly


Chiricahua Ms.: Finery Canyon, 0.5 mi. below campground; Rustler Park; trail between Rustler and Barfoot parks; Onion Saddle. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Dragoon Ms., Whetstone Ms., Pinaleño Ms., Animas Ms. Navajo, Coconino, Yavapai, Graham, Cochise, Santa Cruz, and Pima counties. Western Texas to Colorado, Arizona, and northern Mexico. Madrean.

Exsicc.: ARIZ [W.A. Silvans 3436; Goodding and Goodding 168-47, 471-47, 469-47, 164-47; Darrow, Phillips, Pulz 1245; Vasek and Clarke 660917-62; Hagopian and Bagley FCM 221].

Muhlenbergia polycaulis Scribn.

Cliff muhly


Chiricahua Ms.: Chiricahua Nat. on Rhyolite Canyon; South Fork Cave Creek. Also Santa Catalina Ms., Dragoon Ms., Huachuca Ms., Santa Rita Ms., Baboquivari Ms., Animas Ms. Cochine County, Santa Cruz County, and Pima County. Texas, southern Arizona, and Mexico. Madrean.

Exsicc.: CHIR [Clark 8464, 8511], SWRS [Cummins 57-146].

Muhlenbergia porteri Scribn. ex Beal

Bush muhly


Chiricahua Ms.: Fort Bowie Nat. Historic Site at ruins; Bagwell property. Also Huachuca Ms., Rincon Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Pinaleño Ms. Navajo County to Mohave County, south to Cochise, Pima, and Yuma counties. Colorado and Nevada to western Texas, Arizona, California, and northern Mexico. Madrean.

Has high fidelity for mesquite at Fort Bowie Nat. Historic Site.

Exsicc.: FOBO [MHoy 9]. SWRS [SWRS 1958-384].

Muhlenbergia ramulosa (Kunth) Swallen
*Muhlenbergia wofii* (Vasey) Rydb., *Sporobolus ramulosus* (Kunth) Kunth


Chiricahua Ms.: Barfoot Park; Centella Point; Rustler Park. Also Santa Catalina Ms., Pinaleño Ms., Santa Rita Ms., Rincon Ms., Huachuca Ms., Sierra Madre Occidental. Southern Apache (or northern Greenlee), Coconino, and Pima counties. Colorado, New Mexico, Arizona, and Chihuahua. Madrean.

Exsicc.: SWRS [Cummins 57-200], ARIZ [Blumer 155, 1393, Fishbein 489, Darrow et al. 1237, Reeder 6904].

Muhlenbergia repens (J. Presl) A.S. Hitchc.

Aparejo grass, creeping muhly

5,000. [Apr] Oct - [Sep]. Perennial graminoid, rhizome geophyte; nanophyll, orthophyll. Dry, open, rocky or sandy ground. *Salvia iberica.*

Chiricahua Ms.: Fort Bowie Nat. Historic Site at ruins. Apache, Coconino, Yavapai, Cochise, Santa Cruz, and Pima counties. Texas to Arizona and Mexico. Madrean.

Exsicc.: FOBO [MHoy 36].

Muhlenbergia rigens (Benth.) A.S. Hitchc.


Deer grass

slopes, lower slopes, and forest openings; in forests and along canyon streambeds at lower elevations.


**Muhlenbergia rigida** (Kunth) Trin.

**Purple muhly**


Exsicc.: SWRS [Ordway 152].

**Muhlenbergia sinuosa** Swallen


Exsicc.: CHIR [Moir 418]. SWRS [Elliot s.n.].

**Muhlenbergia tenuifolia** (Kunth) Buckl.

**Muhlenbergia monticola** Buckl.

**Mesa muhly**


Exsicc.: CHIR [Clark 8712, Reeves 1539B]. SWRS [Day s.n., Cummins 208-61, 57-203].

**Muhlenbergia virens** (Kunth) Trin.

**Screwwheat muhly**


Chiricahua Mts.: Chiricahua Nat. Mon. along west boundary half way up Erickson Ridge; southeast slope of Long Canyon; Onion Saddle; Chiricahua Saddle; Wilderness Area; Pole Bridge Canyon. Also Rincon Mts., Pinaleño Mts., Santa Catalina Mts., Animas Mts., Huachuca Mts., Santa Rita Mts., Coconino, Gila, Cochise, and Pima counties. New Mexico and Arizona to central Mexico. Madrean.

Exsicc.: CHIR [Reeves 2600A]. SWRS [SWRS 1960-144, Cummins 57-12, Roth s.n.]. CHWA [Leithliter 9, 27]. NMC [Soreng-Spellenberg 773; Goodding M-314; Moir 658; Nash 122; Darrow s.n.].

**Muhlenbergia wrightii** Vasey ex Coul.

**Spike muhly**


Exsicc.: CHIR [Moir 461].

**Panicum antidotale** Retz.

**Blue panic**


Exsicc.: SWRS [Cummins 57-165].

**Panicum bulbosum** Kunth

**Panicum bulbosum minus** Vasey, *P. plenum* Hitchc and Chase

**Bulb panicum**


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon between Organ Pipe and junction of Natural Bridges Trail; 1/4 mile above Licklog Tank in Horsehoe Canyon; Wilderness Area, Greenhouse Canyon, Barfoot Park; Cave Creek. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Huachuca Mts., Sierra de los Ajos. Apache, Navajo, and Coconino counties to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and Mexico. Madrean.


**Panicum capillare** L.


**Witchgrass, old-witch grass**

[2,000] 5,100 - 6,000 [7,000] ft. Jul - Aug [Oct]. Summer annual grass, scapose or leafy-stemmed therophyte; mesophyll, orthophyll. Uncommon along streambeds, gravelly slopes, swales and lower slopes, moist, open ground.
Panicum hallii Vasey var. hallii
Hall's panicum


Panicum hirticaule J. Presl

Panicum capillare L. var. hirticaule (J. Presl) Gould
Withcgrass


Panicum hirticaule J. Presl

Panicum hallii Vasey var. hallii
Hall's panicum


Panicum distichum L.
Digitaria paspaloides Michx., Paspalum distichum var. indutum Shinners, P. paspaloides (Michx.) Scribn.

5,400 ft. Aug [Jun] - [Sep]. Perennial graminoid, semi or leafy-stemmed hemicyrptophyte; 0/1/0/0, orthophyll. Moist ground along streams and ditches. Chiricahua Mts.: Southwestern Research Station near lab. Also Animas Mts., Sierra de los Ajos. Navajo County to Mohave County, south to Cochise, Santa Cruz, Pima, and Yuma counties. New Jersey to Florida, west to California and northwest to Idaho and Washington; Mexico and the West Indies to Argentina and Chile; seacoasts of the Eastern Hemisphere. Temperate. Exsic.: SWRS [SWRS 1959-678].

Paspalum setaceum Michx.


Phleum pratense L. ssp. pratense
Common Timothy

Apache County to Coconino County, south to Graham and Pima counties. Escaped from cultivation throughout the United States; introduced from the Old World. Temperate.
Exsiccat: CHWA [Leithliter 604].

**Piptochaetium fimbriatum** (Kunth) A.S. Hitchc.

*Piptochaetium fimbriatum* var. *confine* I.M. Johnston, *Stipa fimbriata* Kunth

Pinyon rice grass


Exsiccat: CHIR [Clark 8459, Moir 433, Reeves 1226, 1406, 1588]. SWRS [Cummin 57-29].

**Piptochaetium pringlei** (Beal) Parodi

*Stipa pringlei* Scribn.

Pringle needlegrass


**Poa annua** L.

*Poa annua* var. *aquatica* Aschers., *P. annua* var. *reptans* Haussk. Annual bluegrass

[500] 5,000 [9,800] ft. Apr [Jun] - [Jul]. Winter annual grass, seaplace or leafy-stemmed therophyte; nanophyll, orthophyll. Uncommon on damp soil in seeps and streambeds, open ground, lawns, and waste places.

Chiricahua Mts.: Fort Bowie Nat. Historic Site at Apache Spring. Also Rincon Mts., Pinaleno Mts. Coconino, Yavapai, Graham, Gila, Maricopa, Pinal, Cochise, Fima, and Yuma counties. Newfoundland to Alaska, south to Florida, Arizona, and California; also in tropical America at higher altitudes; introduced from Europe. Temperate, Latin American, Introduced.

Exsiccat: FOBIO [Mfloy 383].

**Poa bigelovii** Vasey and Scribn.

[1,000] 5,400 ft. Winter annual grass, seaplace or leafy-stemmed therophyte. Common on gravelly slopes under shrubs and trees, dry uplands, open ground.


Exsiccat: SWRS [SWRS 1959-21].

**Poa fendleriana** (Steud.) Vasey ssp. *fendleriana*


Muttongrass, fendler bluegrass


Pseudotopotis *menziesii*, *Pinus arizonica*, *P. strobiiformis*, *P. discolor*, *Juniperus deppeana*, *Quercus hypoleucoides*, *Q. arizonica*.

Chiricahua Mts.: Chiricahua Nat. Mon. in Silver Spur Meadow; above Ruster Park; Wilderness Area; Cave Creek; Herb Martyr Dam; Centrelina Point. Also Huachuca Mts., Rincon Mts., Santa Rita Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts., Whetstone Mts., Dragoon Mts., Animas Mts., Patagonia Mts. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. South Dakota to Idaho, south to western Texas, Arizona, and southern California. Western.


**Poa pratensis** L.


Kentucky blue grass


Chiricahua Mts.: Cave Creek near Southwestern Research Station; Ruster Park. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleno Mts., Canelo Hills. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Canada and throughout the United States; introduced Western.
from Europe. Holarctic, Introduced.


**Polygong interruptus Kunth**

*Polygong lutosus auct. non (Poir.) A.S. Hitchc.*

5,400 - [7,500] ft. [May] Aug - [Sep]. Perennial graminoid, scapose or leafy-stemmed hemicryptophyte; microphyll, orthophyll. Along ditches and streams:

Chiricahua Ms.: Southwestern Research Station near lab. Apache, Navajo, Coconino, Santa Cruz, and Pima counties. British Columbia to California, east to Louisiana; Mexico to Argentina. Temperate, Latin American.

Exsicc.: SWRS [SWRS 1959-675].

**Polygong monspeliensis (L.) Desf.**

*Alopecurus monspeliensis* L.

**Rabbitfoot grass**


*Quercus nigra*, *Q. arizonica*, *Pinus engelmannii*, *Cupressus macrocarpa*.

Chiricahua Ms.: Chiricahua Nat. Mon. in Ponita Canyon, East Whetlail Canyon; Herb Martyr Dam. Also Rincon Ms., Pinaleño Ms., Sierra Ancha. Throughout Arizona. New Brunswick to Alaska, south to Arizona, mostly near the coast, and common in the Western states from Washington to Nebraska, south to Texas, Arizona, and California; introduced from Europe. Western, Introduced.

Exsicc.: CHIR [Clark 8338, Reeves 4360]. SWRS [Ordway 149].

**Polygong viridis** (Gouan) Breistr.

*Agrostis semiverticillata* (Forsk.) C. Christens.,

*Agrostis verticillata* Vill., *Polygong semiverticillatus* (Forsk.) Hyl.

**Water bentgrass**


Chiricahua Ms.: Chiricahua Nat. Mon. in Pickett Canyon, Silver Spur Canyon; Fort Bowie Nat. Historic Site in upper South Canyon; Herb Martyr area. Also Rincon Ms., Sierra Ancha, Canelo Hills, Sierra de los Ajos. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Washington, Oregon, California to Colorado, south to Argentina. Introduced into warmer parts of the western hemisphere. Temperate, Introduced.

Exsicc.: CHIR [Clark 8294, Reeves 2860, 3825, 4431, 4554, MHOY 175]. SWRS [SWRS 1959-807].

**Pseudoroegneria spicata** (Pursh) A. Löve ssp. spicata

*Agropyron spicatum* Pursh, *A. spicatum* var. *pubescens* Elmer, *A. vaseyi* Scribn. and J.G. Sm.,


**Blue bunch wheatgrass**

Setaria leucopila (Scribn. and Merr.) K. Schum.

*Chaetochloa leucopila* Scribn. and Merr.


*Setaria macrostachya* Kunth

Plains bristlegrass


*Setaria viridis* (L.) Beauv.

Green bristlegrass

[2,000] 5,000 - 6,000 [8,000] ft. Aug. Perennial graminoid, scapose or leafy-stemmed hemicycophyte; nanophyll, orthophyll. Uncommon on alluvium, disturbed soil, fields and open woods.

Chiricahua Mts.: Chiricahua Nat. Mon. in Whitaeltail Canyon; Southwestern Research Station. Apache, Coconino, Final, Cochise, Pima, and Yuma counties. Temperate regions of both hemispheres; introduced from Europe. Holartic, Latin American, Introduced.

*Setaria obtusata* (Michx.) Scribn.

*Andropogon nutans* L., *Sorghastrum nutans* (Michx.) Nash

Indian grass, rice grass


Chiricahua Mts.: Chiricahua Nat. Mon. in Silver Spur Meadow. Quebec and Maine to Manitoba and North Dakota, south to Florida and Arizona; Mexico. Temperate.

*Silver Spur Meadow.

*Setaria halepense* (L.) Pers.

*Holcus halepensis* L.

Johnson grass


Invasive in disturbed grassland.

*Exsic.:* CHIR [Reeves 1526, 4169, 4461]. SWRS [SWRS 1958-815].

*Sphenopholis intermedia* (Rydb.) Rydb.

*Sphenopholis intermedia var. pilosa* Dore, *S. obtusata* (Michx.) Scribn. var. major (Torr.) K.S. Erdman

Slender wedge grass

5,400 - 6,000 ft. [May] Jun - Aug. Uncommon on moist soil near streams or pools and meadows, mostly in shade.

Chiricahua Mts.: South Fork Cave Creek, East Turkey Creek (6 mi. above Southwestern Research Station). Also Huachuca Mts., Rincon Mts. Apache, Navajo, Coconino, Yavapai, Pinel County, Cochise and Pima counties. Newfoundland and Maine to British Columbia, south to Florida, Arizona, California, and Mexico. Temperate.

*Exsic.:* CHIR [Reeves 2879]. SWRS [Cummins 57-148, SWRS 1959-625].

*Sphenopholis obtusata* (Michx.) Scribn.

*Aira obtusata* Michx., *Sphenopholis obtusata* var. *lobata* (Trin.) Scribn., *S. obtusata* var. *pubescens* (Scribn. and Merr.) Scribn.


*Exsic.:* CHIR [Reeves 2879].

*Sporobolus airoides* (Torr.) Torr.

*Agrostis airoides* Torr.

Alkali sacaton


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Sporobolus contractus A.S. Hitchc.
Sporobolus cryptandrus (Torr.) Gray var. strictus Scribn.
Spike drop-seed

Sporobolus cryptandrus (Torr.) Gray
Agrostis cryptandra Torr., Sporobolus cryptandrus ssp. fusicola (Hook.) E.K. Jones and Fassett, S. cryptandrus var. fusicola (Hook.) Pohl, S. cryptandrus var. occidentalis Jones and Fassett
Sand dropseed
Exsicc.: CHWA [Leithliter 661, 835].

Sporobolus pyramidatus (Lam.) A.S. Hitchc.
Agrostis pyramidata Lam., Sporobolus argutus (Nees) Kunth, S. paiens auct. non Swallen, S. pulvinatus Swallen
Summer annual grass, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Open ground.
Chiricahua Mts.: Southwestern Research Station on hillside across from lab. Willcox, Cochise County. Apachean.
Exsicc.: SWRS [Cummins s.n.].

Stipa eminens Cav.
Exsicc.: SWRS [Cummins 57-38].

Stipa neomexicana (Thurb. ex Coult.) Scribn.
New Mexican feathergrass

Exsicc.: FOBO [MHoy 386].

Trachypogon secundus (J. Presl) Scribn.
Heteropogon secundus J. Presl
Wentworth (1982) lists as T. montiflora (Kunth) Nees KandP and Lehr state that T. montiflora is not a U.S. species.
Exsicc.: SWRS [Cummins 57-155].

Tragus berteronianus J.A. Schultes
Nazia aliena sensu auct. non (Spreng.) Scribn.
[5,500] ft. Sep - Sep [Oct]. Summer annual grass, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Dry, open ground.
Exsicc.: CHIR [Goodding and Goodding 468]. SWRS [Cummins 57-187].

Tridens muticus (Torr.) Nash var. muticus Triodia mutica (Torr.) Scribn.
Slim tridens
Chiricahua Mts.: Fort Bowie Nat. Historic Site at ruins; Silver Creek along Paradise Road. Also Huachuca Mts., Rincon Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts. Navajo, Coconino, and Mohave counties to Cochise, Santa Cruz, Pima and Yuma counties. Southern Colorado and Texas to southeastern California. Southwestern.

Vulpia octoflora (Walt.) Rydb. var. octoflora Festuca octoflora Walt., F. octoflora var. aristulata Torr. ex L.H. Dewey
Six-weeks fescue
Exsicc.: CHIR [Reeves 2567, 2598, 2635]. SWRS [Hoy s.n.].
POLEMONIACEAE—Phlox Family.

A family of annual to perennial herbs, rarely shrubs, small trees, or twining vines. About 13 genera and 265 species in North America, with the majority in the western United States. A few species are important ornamentals.

**Allophyllum giloides** (Benth.) A. and V. Grant
ssp. giloides

*Gilia giloides* (Benth.) Greene


**Eriastrum diffusum** (Gray) Mason

*Eriastrum diffusum ssp. jonesii* Mason


*Chiricahua* Mts.: Fort Bowie Nat. Historic Site south of cemetery. Also Hauchaca Ms., Rincon Ms., San Simon Valley, Sierra Ancha, Santa Catalina Ms., Pinaleño Ms., Animas Ms. Northern Coconino and Mohave counties to Graham, Cochise, Santa Cruz, and Pima counties. Western Texas to southern Utah and Nevada, California, and northern Mexico. Southwestern.

Exsicc.: FOBO [MHoy 169]. SWRS [SWRS s.n., Pough s.n.].

**Gilia mexicana** A. and V. Grant


*Chiricahua* Mts.: Chiricahua Nat. Mon. Also Huachuc Ms., Animas Ms., Santa Rita Ms. Pima, Cochise, and Pinal counties. Arizona, east to New Mexico, and south to Chihuahua, Mexico. Madrean.

Exsicc.: CHIR [Fish 40, Reeves 2505, 2589].

**Gilia opthalmoides** Brand

4,800 - 5,000 ft. Apr. Winter annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. In sandy places in the pinon belt in desert mountains.

*Chiricahua* Mts.: FOBO near parking lot. Also Dragoon Ms., Pinaleño Ms.

Grant, Alva and Verne Grant, 1956, Genetic and taxonomic studies in *Gilia* VIII, the cobwebby Gilias, Aliso 3:203-287.

Exsicc.: FOBO [MHoy 94]. SWRS [Walker s.n.].

**Gilia rigidula** Bentham. ssp. acerosa (Gray)

Wherry

*Gilia acerosa* (Gray) Britt., *G. rigidula* var. acerosa Gray, *Giliastrum rigidula* (Benth.) Rydb. ssp. acerosa (Gray) W. A. Weber


Exsicc.: SWRS [Walker s.n.].

**Gilia sinuata** Doug. ex Benth.

*Gilia inconspicua* (Sm.) Sweet var. *sinuata* (Doug. ex Benth.) Gray


*Chiricahua* Ms.: FOBO; Portal Ranger Station. Also Rincon Ms., Sierra Ancha, Santa Catalina Ms., Animas Ms. Almost throughout the state. Wyoming to eastern Washington, south to western Texas, Arizona, southern California, and northern Mexico. Western.

Exsicc.: SWRS [Roth s.n.].

**Ipomopsis longiflora** (Torr.) V. Grant ssp. longiflora

*Gilia longiflora* (Torr.) G. Don

[1,000] - 5,000 [8,000] ft. Mar - Oct. Summer annual forb. Uncommon on well-drained sandy or gravelly flats, dry plains and mesas, often on limestone soils.

*Chiricahua* Ms.: east of Portal, Fort Bowie Nat. Historic Site near parking lot; Paradise Road. Also Huachuc Ms., Male Ms., Animas Ms., Rincon Ms., Santa Rita Ms. Almost throughout the state. Colorado and western Texas to Arizona and Chihuahua. Southwestern.

Grant (1956).

Exsicc.: SWRS [Cazier s.n.]. FOBO [MHoy 92].

**Ipomopsis macombii** (Torr. ex Gray) V. Grant


[4,000] 5,400 - 8,860 ft. Jul - Oct. Perennial deciduous forb, scapose or leafy-stemmed hemicryptophyte; nanophyll, orthophyll. Locally common in forest or woodland openings, stony slopes and openings in pine forests.

*Chiricahua* Ms.: Chiricahua Nat. Mon.; Bonita Park, Lower Bonita Canyon, Sugarloaf parking lot, Pickett Park, Faraway Ranch, between Rustler Park and Long Park, near junction Onion Saddle Road - Paradise Road; Barfoot Park; Wilderness Area. Also Animas Ms., Sierra de los Ajos. Cochice and Santa Cruz counties. Southern Arizona and northern Mexico. Apachean.

Grant (1956).

Exsicc.: CHIR [Borell 18, Lehto 3325a, Reeves 1005, 4512, 4528]. SWRS [Welch s.n., Whitman 177]. CHWA [Leithibler 314, 505], ARIZ [Blumer 1443].

**Ipomopsis multiflora** (Nutt.) V. Grant

*Gilia multiflora* Nutt.


*Chiricahua* Ms.: Fort Bowie Nat. Historic Site; Pinery Canyon. Also Rincon Ms., Sierra Ancha, Santa Catalina Ms., Pinaleño Ms., Animas Ms., Apache County to Mohave County, south to Cochise and Pima counties. New Mexico to southern Nevada and Arizona. Southwestern.

Medicinal use by Indians reported. Grant (1956).

Exsicc.: SWRS [s.c. s.n.].
Linanthus aureus (Nutt.) Greene

Winter-annual forb, scapose or leafy-stemmed therophyte. Uncommon on well-drained soil, dry uplands, dry plains and mesas.


Western Texas to southern Nevada and southeastern California. southwestern.

Exsicc.: FOBO [MHoy 356].

Phlox austromontana Coville ssp. austromontana

Phlox austromontana ssp. var. lutescens Welsh

Winter-annual forb, scapose or leafy-stemmed therophyte; leptophyll, orthophyll. Rare on limestone derived soil, rocky slopes.

Chiricahua Mts.: Fort Bowie Nat. Historic Site; Paradise. Also Rincon Mts., Pinaleno Mts. Coconino, Yavapai, and Mohave counties. Idaho and Oregon to northwestern New Mexico, Arizona, California, and Mexico. Western.

Exsicc.: Rincon [Bowers Reeves 1001, 1088]. SWRS [Walker s.n.].

Phlox gracilis (Hook.) Greene ssp. gracilis

Gilia gracilis Hook., Microstiris gracilis Hook.

Winter-annual forb, scapose or leafy-stemmed therophyte. Uncommon on damp soil of ephemeral seeps and streambeds and mesic slopes; sunny exposures, dry uplands.

Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleno Mts., Animas Mts. Apache County to Mohave County, south to Santa Cruz and Pima counties. Montana to Alaska, south to New Mexico, Arizona, and Baja California; South America. Western, Latin American.

Exsicc.: CHIR [Reeves 2599, 2639]. SWRS [MHoy s.n.].

Phlox nana Nutt.


Chiricahua Mts.: Rucker Canyon, Tex Canyon, South Fork Cave Creek. Cochise County. Western Texas, New Mexico, southeastern Arizona, and Chihuahua. Madrean.

This plant, described as new to science, was collected by J.C. Lemmon and wife at Rucker Canyon (no. 415) circa 1881.

Exsicc.: SWRS [Walker s.n., SWRS 1559-818A]. ASU [Landrum 6053, Nash 189].

Phlox stansburyi (Torr.) Heller ssp. stansburyi

Phlox longifolia Nutt. var. stansburyi (Torr.) Gray, P. stansburyi ssp. eustansburyi Brand, P. stansburyi var. brevipetala (Gray) E. Nels.

Winter-annual forb, scapose or leafy-stemmed therophyte; leptophyll, orthophyll. Dry soil. Sagebrush.

Chiricahua Mts.: near Paradise cemetery. Navajo County to Mohave County, Cochise County. Utah, Nevada, New Mexico, northern Arizona, and eastern California. southwestern.

Phlox triovulata Thurb. ex Torr.

Phlox nana Nutt. ssp. glabella (Gray) Brand

Winter-annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Uncommon in rich moist soil in mesic drainages of coniferous forests.

Chiricahua Mts.: East Turkey Creek; Wilderness Area, Salsbury Canyon. Also Pinaleno Mts., Huachuca Mts. Apache, Coconino, Graham, Greenlee, and Cochise counties. southwestern New Mexico and eastern Arizona. Aphachean.

Exsicc.: SWRS [Walker s.n.]. CHWA [Leithliter 412].

Polemonium pauciflorum S. Wats. ssp. hinckleyei (Standl.) Wherry

Polemonium hinckleyei (Standl.) Jacobs-ladder

Winter-annual forb, scapose or leafy-stemmed therophyte; leptophyll, orthophyll. Rare in mesic drainages, along brooks. Sere slopes below cliffs.

Chiricahua Mts.: East Turkey Creek; Wilderness Area, Salsbury Canyon, Chapperon Canyon; Rock Creek, Centrela Point; Pine Canyon; along Catalonia Trail. Cochise County. southwestern Arizona and northern Mexico. Madrean.

Exsicc.: SWRS [Walker s.n.]. CHWA [Leithliter 514]. ARIZ [Blumer 1626].

POLYGALACEAE—Milkwort Family

A family of herbs, shrubs, or small trees, sometimes climbing or twining. About 10 genera and 700 species, widely distributed, except in New Zealand and arctic regions of Asia and North America. The family is of little economic value, save for a few species used as ornamentals.

Monnina wrightii Gray

Winter-annual forb, scapose or leafy-stemmed therophyte; nanophyll, orthophyll. Uncommon on gravelly openings and in damp soil of streambeds, sometimes on limestones. Canodaher.

Chiricahua Mts.: Chiricahua Nat. Mon.; Southwestern Research Station; Paradise. Also Rincon Mts., Pinaleno Mts., Santa Catalina Mts. Southern Apache (or Navajo), Yavapai, Greenlee, Cochise, Santa Cruz, and Pima counties. New Mexico, Arizona, and northern Mexico. southwestern.

Exsicc.: CHIR [Clark 8741, Moir 565, Reeves 1482]. SWRS [Todsen s.n.]. ARIZ [Blumer 1659].

176
Polygala alba Nutt.
Polygala alba Nutt. var. suspecta S. Wats.
Milk-wort
Chiricahua Mts.: Chiricahua Nat. Mon. at Cave Creek. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Mule Mts., Canoel Hills. Apache County to Cochonino County, south to Cochise, Santa Cruz, and Pima countines. South Dakota to Washington, south to southern Mexico. Western.
Exsicc.: CHIR [Clark 8386, Reeves 1455, 3749, 4144]. SWRS [Roth s.n.]

Polygala barbeyana Chod.
Polygala longa Blake, P. racemosa Blake, P. reducta Blake
Milk-wort
[3,000] 5,000 - 6,000. May - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemi-cryptophyte; nanophyll, orthophyll. Uncommon on rocky slopes, sometimes of limestone.
Exsicc.: FOBO [MHoy 130, 304]. SWRS [Walker s.n.]

Polygala hemipterocarpa Gray
Milk-wort
Chiricahua Mts.: Chiricahua Nat. Mon. 5.5 mi. northwest of Southwestern Research Station; Paradise Road. Also Mule Mts., Animas Mts. Cochise, Santa Cruz, and Pima counties. Texas to southern Arizona and Mexico. Chiuhauan.
Perhaps intergrades with Polygala scoparioides Chodat.
Exsicc.: CHIR [Clark 8423, 8943, Moir 428, 491, Reeves 1260, 4411]. SWRS [Welch s.n.]

Polygala lindheimeri Gray var. parvifolia
Wheelock
Polygala tweedyi Britt. ex Wheelock

Polygala macradenia Gray
Exsicc.: FOBO [MHoy, s.n.]

Polygala obscura Benth.
Polygala orthotricha Blake
Milk-wort
Arizona's most common and widely distributed species in this genus.
Exsicc.: CHIR [Clark 8334, Moir 513, 548, Reeves 1271, 1482, 1592, 3052, 3268, 3771, 3801, 4154, 4221, 4378, Lehto 2285]. SWRS [Ordway 129]. ARIZ [McCormick 336, Barr 64-415, Kaister 49-130, Moir 513, Blumer 1337].

Polygala scoparioides Chod.
Exsicc.: SWRS [s.c. s.n.]

POLYGONACEAE—Knotweed Family.
A family of herbs, shrubs, or rarely trees, sometimes twining; stems often with swollen nodes. About 32 genera and 800 species, mostly of temperate distribution and primarily of the northern hemisphere. There are 14 genera in the U. S. and they are restricted to the far west. The family is not important economically save for buckwheat (Fagopyrum) and rhubarb (Rheum). The remainder are mostly ornamentals or noxious weeds.

Eriogonum abertianum Torr. var. abertianum
Eriogonum abertianum var. gillespiei Fosberg, E. abertianum var. neomexicanum Gandog., E. abertianum var. villosum Fosberg
Buckwheat
Eriogonum alatum Torr.

Buckwheat, winged eriogonum


Chiricahua Mts.: Chiricahua Nat. Mon. in Upper East Whetstall and Lower Pickett Canyons; Fort Bowie Nat. Historic Site; San Mateo Point, Centrella Point. Also Pinaleño Mts., Sierra Ancha, Animas Mts., Sierra de los Ajos. Navajo and Gila counties to Cochise and Pima counties. Arizona to Baja California.

Exsicc.: CHIR [Reeves 1170]. ARIZ [Blumer 2161].

Eriogonum deflexum Torr. var. deflexum

Reveal

Eriogonum clutei Rydb. E. deflexum var. turbinatum (Small) Reveal, E. turbinatum Small

Skeleton weed


Chiricahua Mts.: Fort Bowie Nat. Historic Site at Siphon Canyon cattle tank. Also Rincon Mts., Santa Catalina Mts., Pinaleño Mts., Animas Mts., Coconino and Mohave counties, south to western Cochise, Pima and Yuma counties. Utah to Arizona and Baja California.

Exsicc.: FOBO [MHoy 229].

Eriogonum jamesii BentH. var. undulatum (Benth.) Stokes ex M.E. Jones

Eriogonum undulatum Bent.

Buckwheat, antelope sage


Roots are used medicinally by Indians.

Exsicc.: CHIR [Clark 8706, Reeves 4075, 4419]. SWRS [Roth s.n.]. CHWA [Leihlter 132, 194, 391, 403, 470, 559, 712, 848]. ARIZ [Blumer 1460].

Eriogonum pharaceoides Torr. var. pharaceoides


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon; West Turkey Creek, El Coronado Ranch. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleño Mts., Dragoon Mts. Apache, Navajo, and Coconino counties, south to Cochise and Pima counties. Utah, New Mexico, and Arizona. Southwestern.

Exsicc.: ARIZ [Blumer 2163]; Van Devender and Eiber s.n.; J.G. Lemmon 3047; O.M. Clark 8501.

Eriogonum polycaladon BentH.

Eriogonum densum Greene, E. vimineum Doug. ex BentH. var. densum (Greene) S. Stokes

Buckwheat, sorrel eriogonum


Exsicc.: CHIR [Reeves 1738]. ASU [Parfitt 4631].

Eriogonum trichopes Torr. var. trichopes

E. trichopes ssp. minus (Benth.) S. Stokes

[3,200] 4,300 ft. Jul - [almost throughout the year]. Summer-annual forb, scapose or leafy-stemmed therophyte. Uncommon on well-drained flats.


Exsicc.: SWRS [SWRS 1958-238, Roth s.n.].

Eriogonum wrightii Torr. ex BentH. var. wrightii

Eriogonum wrightii ssp. glomerulum S. Stokes

Buckwheat


Exsicc.: CHIR [Fish 25, Reeves 1328, 1671, 1900]. FOBO [MHoy 48]. SWRS [Ordway s.n., MHoy s.n.].

Polygonum aviculare L.

Polygonum aviculare var. vegetum Ledeb., P. heterophyllum Lindl., P. monspeliense Pers.

Knotweed, smartweed


Temperate, Introduced.

Exsicc.: CHIR [Reeves 4475]. SWRS [Ordway 130].

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Polygonum convolvulus L.
Black bindweed, corn-bind


Chiricahua Mts.: near Portal; Ruazier Park; Barfoot Park.
Also Sierra Ancha, Pinaleño Mts., Huachuca Mts., Apache, Navajo, and Coconino counties to Cochise and Pima counties. Widely distributed in the United States; naturalized from Eurasia. Temperate, Introduced.

The only climbing plant of this family in Arizona.

Exsicc.: ARIZ [Barr 64-486, Mason et al. 2863, Blumer 1583].

Polygonum douglasii Greene ssp. johnstonii
(Munz) Hickman

Polygonum douglasii var. johnstonii Munz, P. sawatchense Small, P. triandrum Coolidge, P. utahense Brenchle and Cottam


Chiricahua Mts.: Chiricahua Nat. Mon. in East Whetstail Canyon; junction of Onion Saddle Road and Paradise Road. Also Rincon Mts., Sierra Ancha, Pinaleño Mts. Apache to Mohave counties south to Cochise and Pima counties. Saskatchewan to British Columbia, south to New Mexico, Arizona, and California. Western.

Exsicc.: CHIR [Reeves 4424]. SWRS [Walker s.n.].

Polygonum lapathifolium L. var. lapathifolium

Persicaria incarnata (Ell.) Small, P. lapathifolium (L.) S.F. Gray, P. tomentosa (Schrank) Bickn., Polygonum incarnatum Ell., P. lepaphilium var. pallidum (With.) Fries, P. lapathifolium var. nodosum (Pers.) Small, P. lapathifolium var. ovatum A. Braun, P. lapathifolium var. prostratum C.F.H. Wimmer, P. nodosum Pers., P. onetillii Brenchle, P. pennisylvanicum L. ssp. onetillii (Brenchle) Hultén, P. scabrum Moench, P. tomentosum Schrank


Exsicc.: NMC [Blumer 1777].

Rumex aquaticus L. var. fenestratus (Greene) Dorn

Rumex aquaticus ssp. fenestratus (Greene) Hultén, R. aquaticus ssp. occidentalis (S. Wats.) Hultén, R. fenestratus Greene, R. occidentalis S. Wats., R. fenestratus var. fenestratus (Greene) Lepage, R. occidentalis var. labradoricus (Rech. f.) Lepage, R. occidentalis var. procerus (Greene) J.T. Howell

8,200 [10,000] ft. Oct. Deciduous perennial forb, rhizome geophyte; mesophyll, orthophyll. Chiricahua Mts.: Barfoot Park Colorado, North Dakota, Montana. Blumer specimen sterile but lateral leaf veins less strictly angles to mid vein than R. orthoneurus. This specimen is typical of troublesome material that is close to R. orthoneurus.

Exsicc.: NMC [Blumer 1449].

Rumex crispus L.
Curly-leaf dock


The plant is reputed to have medicinal value and is sometimes used as a potherb. Rechinger (1937).

Exsicc.: CHIR [Clark 8260, Reeves 4366]. SWRS [Roth s.n.]. FBO [MHoy 465]. ARIZ [MHoy 1895].

Rumex hymenosepalus Torr.

Rumex hymenosepalus var. euhymenosepalus Rech. f., R. hymenosepalus var. salinus (A. Nels.) Rech. f.

Canaigre, wild-rhubarb


Chiricahua Mts.: Chiricahua Nat. Mon. on grassland west of monument; Fort Bowie Nat. Historic Site, Siphon Canyon; Birt Roberts ranch in San Simon Valley. Also Rincon Mts., Sierra Ancha, Animas Mts., Navajo, Coconino, and Mohave counties, south to Graham, Santa Cruz, and Pima counties. Wyoming to Utah, western Texas, Arizona, northern Mexico, and California. Western.

The high tannin content has aroused interest in the plant but attempts to cultivate it have not been economically successful. The petioles may be used as rhubarb. Indians and Mexican use the leaves for greens. The Hopi and Tolono O’odham use the roots for treating colds and sore throat, and a dye was made from them by the Navajo. Variety intended not specified. Rechinger (1937).

Exsicc.: CHIR [Reeves 1747, 2290, 2579]. SWRS [SWRS 1959-44]. FBO [MHoy 86].
Rumex obtusifolius L.  
Bitter dock  
Holarctic, Introduced.  
Exsicc.: NMC [Blumer 1576].

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Rumex orthoneurus Rech. f.  
Chiricahua Mts.; Rustler Park, Barfoot Park (transplanted by USFS into a number of springs and seeps along the Crest Trail). Also Sierra Ancha, Pinañelo Mts., Sierra de los Ajos. Sonora, Mexico. Apachean.  
Type collected at Rustler Park in the Chiricahua Mts. by J.C. Blumer. Rechinger, Jr. (1937). Tom Deeken (USFS, Sierra Vista District) is working on preservation of this species.  
Exsicc.: SWRS [Wittmann 5B,Ordway s.n.]. ARIZ [Blumer 1449 (type)]. NMC [Gierisch 3832].

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PORTULACACEAE—Purslane Family.  
A family of annual or perennial herbs or suffrutescent shrubs with 19 genera and more than 500 species. The Pacific coast states constitute one center of distribution for the family and the Andes are another. Some species are edible, however the family is of small economic importance overall.

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Calandrinia ciliata (Ruiz and Pavón) DC.  
*Calandrinia ciliata* var. *menziesii* (Hook.) J.F. Macbr.  
Exsicc.: CHIR [Reeves 2292]. SWRS [Moir s.n.].

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Portulaca oleracea L. ssp. oleracea  
Common purslane, pusley  
An common weed in the east but not common in the west.  
Exsicc.: CHIR [Clark 8622, Reeves 1232, 1287, 4385]. SWRS [Roth s.n.]. Fobo [Moir 310].

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Portulaca pilosa L.  
*Portulaca cyanosperma* Engl., *P. munda* I.M. Johnston  
Exsicc.: CHIR [Moir 441, Reeves 3197, 3271, 4017].

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Portulaca suffrutescens Engelm.  
Exsicc.: CHIR [Clark 8427, 8543, Moir 441, Reeves 3197, 4038, 4018]. Fobo [Moir 259].

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Portulaca umbraticola Kunth  
*Portulaca coronata* Small, *P. lanceolata* Engelm.  
non Haw.  
[2,500] - 5,400 [6,000] ft. Aug - [Sep]. Summer-annual forb, scapose or leafy-stemmed therophyte. Common on dry soil, full sunlight or part shade, on dry mesas, benches, and plains.  
Exsicc.: CHIR [Clark 4017, 4018]. SWRS [Moir s.n.].

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Talinum aurantiacum Engelm.  
*Talinum angustissimum* (Gray) Woot. and Standl., *T. aurantiacum var. angustissimum* Gray  

Indians cooked and ate the roots, which often become very large and more or less woody.

Exsicc.: CHIR [Clark 8504, Marble s.n., Reeves 3454, 3513, 4114, Sipes s.n.]. FOBO [MHoy 271]. SWRS [SWRS 1959-763]. ARIZ [McCormick 301, Barr 64-408].

**Talinum paniculatum** (Jacq.) Gaertn.


Chiricahua Mts.: San Simon Valley. Also Rincon Mts., Mule Mts., Canelo Hills. Greenlee County to Cochise, Santa Cruz, and Pima counties. Florida to Arizona, south to tropical America. Latin American.

Exsicc.: SWRS [Walker s.n.].

**Talinum parviflorum** Nutt. ex Torr. and Gray

*Talinum gooddingii* P. Wils., *T. appalachianum* W. Wolf


Exsicc.: CHIR [Clark 8447, Reeves 3492, 4037]. FOBO [MHoy 270].

**PRIMULACEAE—Primrose Family.**

A family of annual or perennial herbs, rarely suffrutescent. About 28 general and nearly 800 species, widely distributed, occurring continents but most abundant in north temperate regions. Economically the family is only important for ornamentals.

**Anagallis arvensis** L.

Scarlet-pimpernel, poorman’s weatherglass


The flowers close quickly at the approach of storms, hence the English name “poorman’s weatherglass.”

Exsicc.: CHIR [Clark 8258, Reeves 2523, 2876, 3277].

**Androsace occidentalis** Pursh

*Androsace arizonica* (Gray) Derganc, *A. occidentalis* var. *arizonica* (Gray) St. John, *A. occidentalis* var. *simplex* (Rydb.) St. John

Rock-jasmine


Exsicc.: CHIR [Reeves 2300, 2372, 2510]. SWRS [MHoy s.n., Roth s.n.].

**Androsace septentrionalis** L. ssp. *puberulenta* (Rydb.) G.T. Robbins

*Androsace puberulenta* Rydb., *A. septentrionalis* var. *puberulenta* (Rydb) R. Kunth

Rock jasmine

[7,000] 8,600 - 9,600 [12,000] ft. [Apr] May - Jul [Sep].

Summer-annual forb, rosette therophyte. Uncommon on gravelly flats and streambeds.

Chiricahua Mts.: Rustler Park, Long Park; Wilderness Area; East Turkey Creek. Also Rincon Mts., Pinaleño Mts., Santa Catalina Mts. Northern Apache County and Coconino County, south to the mountains of Cochise and Pima counties. Widely distributed in the cooler parts of the Northern Hemisphere. Northern.

Exsicc.: SWRS [SWRS 1959-419, Witman 34]. CHWA [L16, 49].

**Primula rusbyi** Greene


Perennial deciduous forb, rhizome geophyte; mesophyll, orthophyll. Uncommon on shaded slopes and damp mossy ledges.

Chiricahua Mts.: Suicide Rocks; Rustler Park; Saulsbury Canyon; Wilderness Area, along Crest Trail on west slope Chiricahua Peak, south slope Snowshed Peak; Crest Trail near Monte Vista Peak. Also Rincon Mts., Pinaleño Mts. Mountains of Graham, Cochise, Santa Cruz, and Pima counties. New Mexico and southeastern Arizona. Apachean.

Exsicc.: SWRS [Walker s.n., Whitman 119]. CHWA [L119, 190].

**Samoilus vagans** Greene


Type collected in the Chiricahua Mts. by J.C. Blumer.

Exsicc.: SWRS [Walker s.n.]. ARIZ [Blumer 1546 (type)].

**PYROLACEAE—Pyra Family.**

A family of perennial evergreen, somewhat woody herbs. Found in north temperate zone, extending south into Mexico and the West Indies (1 species) and Chimaphila.
Chimaphila maculata (L.) Pursh var. dasystemma (Torr.) Kearney and Peebles
Pipsissewa
Chiricahua Mts.: Rucker Canyon, Also Rincon Mts., Sierra Ancha, Santa Catalina Mts. Coconino County, Pima County. Massachusetts and Ontario, south to Georgia, Arizona, and Mexico.
Exsic.: SWRS [Roth s.n.]; CHWA [L771].

Chimaphila umbellata (L.) W. Bart. ssp. acuta (Ryd.) Hultén
Chimaphila umbellata var. acuta (Ryd.) Blake
6,500 - 9,000 ft. Jul. Perennial deciduous forb, rhizome geophyte; microphyll, orthophyll. Uncommon in shade.
This plant is used as an ingredient of root beer.
Exsic.: SWRS [Walker s.n.].

Pyrola chlorantha J.G Sw.
Pyrola chlorantha var. convoluta (W. Bart.) Fern., P. chlorantha var. paucifolia Fern., P. chlorantha var. revoluta Jennings, P. convoluta W. Bart., P. oxypetala Austin ex Gray, P. virens var. convoluta (W. Bart.) Fern., P. virens Scheb., P. virens var. saximontana Fern.
Wintergreen
6,400 - 9,400 [10,000] ft. May - Jul [Sep]. Perennial deciduous forb, rosette hemicyryptophyte; microphyll, orthophyll. On all but south-facing slopes at the highest elevations, lower down on mesic forested slopes and shallow draws. Pinus arizonica, Pseudotsuga menziesii, Populus tremuloides.
Chiricahua Mts.: Wilderness Area, Summit Ridge on Fly Peak Trail, Crest Trail; Rucker Trail; Rucker Peak; Rucker Canyons; Long Park. Also Pinaleño Mts., Huachuca Mts. Apache County, Coconino County, Cochise and Pima County. Canada to the District of Columbia, New Mexico, Arizona, and California; Europe.
Exsic.: SWRS [1958-113]. CHWA [L131]. ARIZ [McCormick 169; Keener s.n.; Blumer 1618; Darrow and Phillips 2502; Barr 64-346; Darrow et al. 1062; Darrow 2598; Loomis et al. 2216].

RANUNCULACEAE—Buttercup Family
A family of annual or perennial herbs, occasionally shrubs or vines, or very rarely trees. A moderately large family, chiefly of the cooler temperate regions of the earth but centered in the temperate and cold regions of the northern and southern hemispheres, chiefly in north temperate regions. About 45 genera and 2,000 species of which about 20 genera and nearly 300 species are indigenous to this country with 4 additional genera that are naturalized or adventive. The family is notable for the large number of ornamentals available (27 genera and 280 species). Roots of the golden seal and monkshood are used in the drug trade.

Aconitum columbianum Nutt.
Monks-hood
Chiricahua Mts.: Wilderness Area. Sierra Ancha, Pasta Catalina Mts., Cochise, Santa Cruz, and Pima counties. British Columbia to Arizona, south to New Mexico, Arizona, and California. Western.
The plant contains strong alkaloids that are exceedingly poisonous.
Exsic.: CHWA [Leithliter 322, 589].

Actaea rubra (Ait.) Willd. ssp. arguta (Nutt.) Hultén
Actaea arguta Nutt., A. arguta var. viridiflora (Greene) Tidestrom, A. rubra var. arguta (Nutt.) Laws.
Maidenberry, bane-berry
7,000 - 9,240 [10,000] ft. [May] - Aug. Perennial deciduous forb, rhizome geophyte; microphyll, orthophyll. Uncommon along streams in wet soil but also found on open north-facing slopes at higher elevations.
Exsic.: CHWA [Leithliter 601]. ARIZ [Barr 65-279].

Anemone tuberosa Rydb.
Desert windflower
Exsic.: FOBO [M Hoy 12]. SWRS [Duke s.n., Walker s.n.].

Aquilegia chrysantha Gray
Columbine
Chiricahua Mts.: Pine Creek; East Turkey Creek; Wilderness Area. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Sierra de los Ajos. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Southern Colorado to New Mexico, Arizona, and northern Mexico. Southwestern. This species apparently crosses with Aquilegia tetraptera. SWRS [Wittmann 314] is an example. The most common and widespread columbine in Arizona.
Aquilegia triternata Payson Columbine
Chiricahua Mts.: Chiricahua Nat. Mon.; Pinery Canyon 1 mi. below campground; Wilderness Area; Bootlegger Trail above Rustler Park. Also Baboquivari Mts., Animas Mts., Pinaleño Mts. White Mountains (Apache County), and mountains of Cochise, Santa Cruz, and Pima counties. Western Colorado, western New Mexico, and eastern Arizona. Madrean.
Type specimen came from Chiricahua Mountains.
Exsic.: CHIR [Clark 8560, Reeves 993, 1383, 4221]. SWRS [Cummins s.n.]. CHWA [Leithliter 134, 354, 720].

Clematis drummondii Torr. and Gray Texas virgin's bowser, barbas de chivato
Chiricahua Mts.: Fort Bowie Nat. Historic Site; Portal to Paradise road; 3 mi. northeast of Portal; San Simon Clenegas. Also Rincon Mts., Pinaleño Mts., Sierra de los Ajos. Southern Yavapai County, Greenlee, Gila, Maricopa, Pinal, Cochise, and Pima counties. Texas to Arizona and northern Mexico. Chihuahuan.
Exsic.: SWRS [Ordway 138]. ARIZ [Blumer 73].

Clematis ligusticifolia Nutt. var. ligusticifolia Clematis neomexicana Woot. and Standl. C. suksdorfii B.L. Robins.
Chiricahua Mts.: Chiricahua Nat. Mon.; Paradise; East Turkey Creek; Wilderness Area, Winn Falls. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts. Apache, Navajo, and Coconino counties south to Cochise, Santa Cruz, and Pima counties. Western Canada and North Dakota to New Mexico, Arizona, and California. Western. Occasionally grown as an ornamental, this plant was used by the Indians as a remedy for sore throats and colds. The crushed roots were placed in the nostrils of tired horses to revive them. Apparently intergrades or hybridizes with C. drummondii.
Exsic.: CHIR [Clark 8567, Reeves 1701, 3712, 4159]. SWRS [Ordway s.n.]. SWRS 1959-832]. CHWA [Leithliter 617]. ARIZ [Blumer 1510].

Delphinium andescicolor Ewan. ssp. andesicolor
Browsed by deer. Type was collected in the Chiricahua Ms. at Barfoot Park by J.C. Blumer.
Exsic.: SWRS [Ordway s.n.]. CHWA [Leithliter 209]. ARIZ [Blumer 136].

Delphinium scopulorum Gray
Exsic.: Repository unknown [Blumer 1373].

Delphinium wootonii Rydb.
Delphinium geyeri Greene var. wootonii (Rydb.) K.C. Davis. D. virensens Nutt. ssp. wootonii (Rydb.) Shinners
Plains larkspur
Exsic.: CHIR [Reeves 2933]. FOBO [MHoy 380]. SWRS [Walker s.n.].

Myosurus aristatus Benth.
Myosurus minimus L. var. aristatus (Benth.) Boivin
Chiricahua Mts.: East Turkey Creek near Galeyville. Also Animas Mts., Santa Rita Mts., Santa Catalina Mts. (Cochise and Coconino Counties. Nebraska to British Columbia, south to New Mexico, Arizona, and California; South America. Western, Latin American.
Exsic.: SWRS [Walker s.n.].

Myosurus cupulatus S. Wats.
Mouse-tail
Exsic.: CHIR [Reeves 2590, 2631]. SWRS [SWRS 1959-313].

Ranunculus arizonicus J.G. Lemmon ex Gray
Ranunculus arizonicus var. typicus L. Benson
Chiricahua Mts.: West Turkey Creek near El Coronado Ranch; along road 2 mi. east of Rucker Lake. Also Huachuca Mts., Rincon Mts., Patagonia Mts., Canelo Hills. Greenlee County to Cochise County and Santa Cruz County. Southwestern New Mexico and southeastern Arizona; northwestern Mexico. Madrean.
This plant, described as new to science was collected by J.C. Lemmon and wife near Rucker Canyon (no. 585) circa 1881. This species is remarkably xerophytic considering the usual habitats for the genus.
Exsic.: SWRS [Wittmann 78, McNay s.n.].
Ranunculus hydrocharoides Gray var. hydrocharoides

Ranunculus hydrocharoides var. typicus L. Benson


Chiricahua Mts.: below Barfoot Park. Also Huachuca Mts., Sierra Ancha, Animas Mts., San Francisco Peaks. White Mt., Canelo Hills. Coconino County, Apache County, Cochise County. Southwestern New Mexico; Arizona; above Owens Lake, California; Mexico. Madrean.

Exsicc.: SWRS [Pough 1962-9].

Ranunculus inamoenus Greene


Chiricahua Mts.: Wilderness Area, Round Park. Sierra Ancha, Lukachukai Mountains (Apache County), Kaibab Plateau, San Francisco Peaks and vicinity, and Potato Lake (Coconino County), Gila County. Rocky Mountains, from Alberta to New Mexico and Arizona. Rocky Mountain.

Exsicc.: CHWA [Leithliter 462].

Thalictrum fendleri Engelm. ex Gray var. wrightii (Gray) Trel.

Meadow-rue


Pseudotsuga menziesii, Pinus discolor, P. virginiana, P. ponderosa, Quercus hypoleucoides, Quercus arizonica, Muhlenbergia longiligula.


Exsicc.: CHIR [Clark 3911, Reeves 1431, 3766, 3986].

SWRS [Roth s.n., Wittmann 481]. CHWA [Leithliter 96, 311]. Repository unknown [Blumer 1339].

RHAMNACEAE—Buckthorn Family.

A family of trees or shrubs, erect or climbing (by hooks, tendrils, or twining stems), rarely herbs, sometimes suffrutescent. The family is of almost cosmopolitan distribution, composed of about 45 genera and 550 species which are of little economic importance.

Ceanothus fendleri Gray

Ceanothus fendleri Gray var. venosus Trel., C. fendleri var. viridis Gray, C. subsericeus Rydb.

Buck-brush, deer-brace


Chiricahua Mts.: Chiricahua Nat. Mon. in upper Hunt and Sarah Deming canyons; Hands Pass; Cave Creek south of Sunny Flat; Barfoot Park; Wilderness Area. Also Huachuca Mts., Rincon Mts., Pinaleiio Mts., Santa Catalina Mts., Sierra Ancha, Mule Mts., Animas Mts., Sierra de los Ajos. Throughout the state except in the driest desert portions. Colorado and Utah to western Texas, New Mexico, Arizona, and northern Mexico; South Dakota and Wyoming. Deer and livestock browse. Tends to form thickets.

Exsicc.: CHIR [Clark 8152, Fish 50, Reeves 2450, 2526, 2844, 2848, 3635, 3700]. SWRS [SWRS 1959-24, Ordway s.n.]. CHWA [Leithliter 45, 166, 493, 698, 832, 843]. ARIZ [Garton 16988, Blumer 1283].

Ceanothus greggii Gray ssp. vestitus (Greene) C. Schmidt

Ceanothus greggii var. vestitus Greene


Exsicc.: CHIR [Clark 8284, Doyle 22, Reeves 3058, 3180].

FOBO [MHoy 14]. SWRS [SWRS 1959-119].

Ceanothus integerrimus Hook. and Arn.

Ceanothus andersonii Parry, C. californicas Kellogg, C. integerrimus var. californicas (Kellogg)

G.T. Benson, C. integerrimus var. macrothyrsus (Torr.) G.T. Benson, C. integerrimus puberulus (Greene) Abrams

Deer brush


Chiricahua Mts.: Greenhouse Trail; below Onion Saddle along road; Finch Canyons; junction East Turkey Creek and Onion Saddle roads. Also Huachuca Mts., Rincon Mts., Sierra Ancha. Southern Coconino County to Cochise and Pima counties. New Mexico and Arizona to Washington, Oregon, California. Western.

Exsicc.: SWRS [Barr 63-623].

Condalia spatulata Gray

Squaw-bush


Chiricahua Mts.: Fort Bowie Nat. Historic Site around fort ruins; 2 mi. north of Portal; Paradise. Mule Mt. Southwestern Gila County and eastern Pinal County to Cochise and Pima counties. Western Texas to southern Arizona.

Exsicc.: FOBO [MHoy 332]. SWRS [Lindsey 1960-310, Bottimer s.n.].
Frangula betulifolia (Greene) V. Grub. ssp. betulifolia
Rhamnus betulifolia Greene

Birch-leaf buck-thorn


Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon; Cave Creek, Herb Martyr Dam; Greenhouse Canyon; Wilderness Area. Also Pinaleno Mts., Animas Mts., Sierra de los Ajos. Southern Apache and southern Coconino counties to Cochise and Pima counties. New Mexico, eastern Arizona, and northern Mexico. Madrean.


Frangula californica (Eschsch.) Gray ssp. ursina (Greene) Kartesz and Gandhi
Rhamnus californica ssp. ursina (Greene) C.B. Wolf,

R. californica var. ursina (Greene) McMinn

California buck-thorn, coffee-berry, pigeon-berry

[3,500] 4,900 - 6,000 (8,300) ft. May - Aug. Broadleaf evergreen shrub, microphanerophyte; microphyll, sclerophyll. Uncommon on dry well-drained slopes in oak-pine woodland, cool moist slopes; also along drainages at lower elevations.


Type collected from the Chiricahua Mts. by J.C. Blumer.


Rhamnus serrata Humb. and Bonpl. ex J.A. Schultes
Rhamnus fasciculata Greene, R. smithii Greene ssp. fasciculata (Greene) C. B. Wolf

Buck-thorn

6,100 ft. Jul. Broadleaf evergreen shrub, nanophanerophyte; microphyll, orthophyll. Local in shaded, mesic canyon with *Cupressus arizonica, Caryya wrightii.*


Exsicc.: CHIR [Reeves 3253, 3569].

Zizyphus obtusifolia (Hook. ex T. and G.) Gray var. canescens (Gray) M.C. Johnston
Condalia lycoideis (Gray) Webber. var. canescens (Gray) Trel., Condalia lycoideis var. canescens (Gray) Suess.

Gray-thorn, gray-leaved abrojo


Birds relish the fruits. Pima Indians treated sore eyes with a decoction of the roots, which have also been used as a substitute for soap.

Exsicc.: FBO [MHoy 323].

ROSACEAE—Rose Family.

A large family of trees, shrubs, or herbs, often thorny, sometimes climbing. There are about 115 genera and 3,200 species, distributed over most of the earth and abundant in eastern Asia, North America, and Europe. About 50 genera have species indigenous to this country; 38 genera occur in the Pacific states, and one-half are restricted to that area or extend only southeasterly in to Mexico, and 30 general are restricted to the northeastern section of the country. The family is of considerable economic importance for apples (*Malus*), pears (*Pyrus*), quince (*Cydonia*), cherry, plum, prune, peach, nectarine, apricot, almond, sloeberry (ssp. of *Prunus*); blackberry, raspberry, loganberry (ssp. *Rubus*), and strawberry (*Fragaria*). Spirea, cotoneteaster, pyracantha, hawthorn, photinia, rose and cinqufoils (*Potentilla*) are important ornamentals.

Agrimonia striata Michx.

Agrimony


Exsicc.: ARIZ [Blumer 1324, 1598].

Cercocarpus montanus Raf. var. argenteus (Rydbl.) F.L. Martin
Cercocarpus argentaeus Rydbl.

Hairy mountain mahogany


Cercocarpus montanus Raf. var. glaber (S. Wats.) F.L. Martin
Cercocarpus betuloides Nutt. ex Torr. and Gray, C. betuloides var. multiflorus Jepson

Birch-leveat leaf mahogany

185

**Strawberry**

7,000 - 9,300 [11,000] ft. [May] - Aug. [Oct]. Perennial deciduous forb, rosette hemicyryptophyte. Common beneath conifers. At upper altitudinal limits *F. virginiana* occurs on all but south-facing slopes in partial sun on moist to saturated soils; at lower elevations it is found in deep shade beneath conifers, particularly on north-facing slopes; at the lower limits it is found in deep canyons on wet soil. *Pseudotsuga menziesii,* *Picea engelmannii.*

**Chiricahua Mts.:** near Rustler Park along road to Long Park; Wilderness Area, Round Park, upper reaches of Pine Canyon; Centella Point. Also Pinaleiio Mts., Sierra Ancha, Santa Catalina Mts. Apache, Navajo, and Coconino counties, south to Cochise and Pima counties. Wyoming to New Mexico and Arizona. Rocky Mountain.

Edible and palatable.

Exis.: SWRS [Walker s.n.]. CHWA [Leithliter 214].

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**Rock-spiraea, shrubby cream bush**


**Chiricahua Mts.:** Chiricahua Nat. Mon. on Sugarloaf Mountain; above Barfoot Park; along Onion Creek; Wilderness Area; Fly Peak trail; Centella Point. Also Huachuca Mts., Rincon Mts., Pinaleiio Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts., Santa Rita Mts., Sierra de los Ajos. Apache to Cochise County, south to Cochise, Santa Cruz, and Pima counties. Wyoming to Utah, south to western Texas, New Mexico, Arizona, and northern Mexico. Western.

Fruit eaten by the Tewa Indians.


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**Physocarpus monosyenus** (Torr.) Coult.


**Chiricahua Mts.:** Wilderness Area; Crest Trail, Chiricahua Peak. Also Pinaleiio Mts., White Mts. Apache, Graham, and Cochise counties. South Dakota to Texas and eastern Arizona. Rocky Mountain.

Exis.: SWRS [Roth s.n.]. CHWA [Leithliter 88, 113].

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**Potentilla crinita** Gray var. *crinita*

**Potentilla vollicola** Greene


**Chiricahua Mts.:** Crest Trail. Also Huachuca Mts. Apache to Coconino County, Cochise County. Colorado, Utah, New Mexico, and Arizona. Rocky Mountain.

Exis.: SWRS [Roth s.n.].

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**Fragaria vesca** L. ssp. *bracteata* (Heller) Staudt

**Fragaria bracteata** Heller, *F. helleri* Holz., *F. vesca* var. *bracteata* (Heller) R.J. Davis

**Strawberry**

6,500 - 9,790 ft. May - Sep. Perennial deciduous forb, rhizome geophyte; microphyll, orthophyll. Uncommon on shaded, cool moist slopes, along streams.

**Chiricahua Mts.:** South Fork Cave Creek; Wilderness Area. Also Huachuca Mts., Pinaleiio Mts., Rincon Mts., Sierra Ancha, White Mts. Apache, Graham, and Cochise Counties. Montana to British Columbia, south to New Mexico, Arizona, and California. Western.


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**Fragaria virginiana** Duchesne ssp. *virginiana*
Potentilla hippiana Lehmann.

Cinquefoil, five finger


Exsicc.: SWRS [Roth s.n.]. CHWA [Leithliter 90, 186].

Potentilla subviscosa Greene var. ramulosa

(Ryd.) Kearney and Peebles


Exsicc.: ARIZ [Fishbein 440].

Potentilla thurberi Gray var. atrorubens

(Ryd.) Kearney and Peebles

Cinquefoil


Exsicc.: SWRS [Walker s.n.].

Potentilla thurberi Gray var. thurberi


Chiricahua Mts.: South Fork Cave Creek; Morse Canyon Trail at West Turkey Creek; upper Finery Canyon; Rutsler Park; Finery Canyon Camp; East Turkey Creek; Onion Saddle. Also Huachuca Mts., Sierra Ancha, Pinaleño Mts., Animas Mts., Santa Catalina Mts., Santa Rita Mts. Apache, Navajo, and Coconino counties, south to Cochise and Pima counties. New Mexico, Arizona, northern Mexico. Madrean.

Employed as an astringent in folk medicine.

Exsicc.: CHIR [Clark 8704].

Potentilla wheeleri S. Wats.

Potentilla viscidula Rydham.


Exsicc.: CHWA [Leithliter 7, 52].

Prunus emarginata (Dougl. ex Hook.) Walp.

var. emarginata

Prunus emarginata var. crenulata (Greene) Kearney and Peebles

Bitter cherry


Exsicc.: SWRS [Walker s.n.].

Prunus serotina Ehrh. var. rufula (Woot. and Standl.) McVaugh

Prunus virens (Woot. and Standl.) Shreve var. rufula (Woot. and Standl.) Sarg.

Southwestern chokecherry


Chiricahua Mts.: Chiricahua Nat. Mon.; West Turkey Creek; Price Canyon; Barfoot Park; Pine Canyon; Cave Creek. Also Huachuca Mts., Rincon Mts., Santa Catalina Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Sierra de los Ajos. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Western Texas to Arizona and northern Mexico. Temperate.

Exsicc.: CHIR [Clark 8087, Reeves 2866, 3143]. SWRS [SWRS 1958-201, 1959-18].

Purshia mexicana (D. Don) Hendrickson

Covania mexicana D. Don, Covania mexicana var. dubia Brandeg.

Cliff rose, quinine-bush


Chiricahua Mts.: Top Canyon road, near summit, Silver Creek Canyon 2 mi. from Paradise, Bucker Canyon. Also Huachuca Mts., Pinaleño Mts., Sierra Ancha, Animas Mts., Candel Hills. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties. Southern Colorado to southeastern California, south to central Mexico. Madrean.

Important winter browse plant for cattle, sheep, and deer, despite the bitter taste of the foliage. Stips of the inner bark were braided together by the aborigines of Utah and Nevada and used for clothing, sandals, rope, and mats. The plant is used by the Hopi Indians as an emetic and as a wash for wounds, and the wood formerly for making arrow shafts. The flowers are fragrant.

Exsicc.: SWRS [SWRS 1959-x, 1959-73].

Pyracantha coccinea M. Roemer

Cotoneaster pyracantha (L.) Spach

5,400 ft. Persisting about hearths.

Chiricahua Mts.: Chiricahua Nat. Mon. in Silver Spur Meadow. Cultivar from Eurasia

Exsicc.: CHIR [Reeves 1520, 2870].
Pyrus communis L.

Pears


Exsicc.: CHIR [Reeves 2509, 3410].

Rosa woodsii Lindl. var. ultramontana (S. Wats.) Jepson


Chiricahua Mts.: Buckner Canyon; Pine Canyon; Faraway Ranch; Cave Creek. Also Huachuca Mts., Pinaleno Mts., Sierra Ancha, Animas Mts. Apache, Navajo, and Coconino counties, south to Cochise and Pima counties. New Mexico and Arizona.

Southwestern.

Exsicc.: SWRS [SWRS 1958-76]. ARIZ [Blumer 1310, 2292; Loomis and Ppees 596, 5870].

Rosa woodsii Lindl. var. woodsii


Chiricahua Mts.: Chiricahua Nat. Mon., Bonita Canyon; Cave Creek; upper Cave Creek near Onion Saddle. Also Huachuca Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts., Rincon Mts. Apache, Coconino, Cochise, and Yavapai counties. Western Texas through New Mexico to Arizona and northward to North Dakota, Minnesota, and British Columbia. Western.

Exsicc.: CHIR [Clark 8116, Reeves 2796]. SWRS [Roth s.n.]. ARIZ [Tourney s.n.; Toolin 813].

Rubus discolor Weihe and Nees

Rubus procerus P.J. Muell.

5,400 - [6,000] Broadleaf deciduous shrub, microphanerophyte; mesophyll, orthophyll. Uncommon on swales and lower slopes.


Exsicc.: SWRS [SWRS 1959-130].

Rubus idaeus L. ssp. strigosus (Michx.) Focke

Rubus carolinianus Rydb., R. idaeus ssp. melanolasius (Dieck) Focke, R. idaeus var. sachalinensis (Levl.) Focke, R. idaeus var. aculeatissimus Regel and Tiling, R. idaeus var. canadensis Richards., R. idaeus var. gracilipes M.E. Jones, R. idaeus var. melanolasius (Dieck) R.J. Davis, R. idaeus var. melanotrichys (Focke) Fern., R. idaeus var. strigosus (Michx.) Maxim, R. melanolasius Dieck, R. neglectus M.E. Peck, R. strigosus Michx., R. strigosus var. acabypea (Greene) V. Bailey, R. strigosus Michx. var. arizonicus (Greene) Kearney and Peebles, R. strigosus var. canadensis (Richards.) House


Chiricahua Mts.: Rustler Park; Wilderness Area, Price Canyon Trail; Centella Point. Also Pinalesio Mts., Sierra Ancha, Huachuca Mts. Apache County to Mohave County, south to Cochise and Pima counties. Widely distributed in the cooler parts of North America. Temperate.

This is the progenitor of some of the cultivated raspberries.

Exsicc.: SWRS [Morse s.n.]. CHWA [Leithliter 347].

Rubus neomexicanus Gray

Rubus exrubicundus Bailey

Thimbleberry


Chiricahua Mts.: Chiricahua Nat. Mon.; between Rustler Park and Long Park; Wilderness Area; Cave Creek; Portal to Onion Saddle road; along crest south of Rustler Park. Also Rincon Mts., Pinalesio Mts., Sierra Ancha, Santa Catalina Mts. Coconino County to Graham, Cochise, Santa Cruz, and Pima counties. New Mexico, Arizona, and northern Mexico.

Apachian.


Rubus parviflorus Nutt. var. parviflorus (Gray) Fern.

Rubus bifaurius Nutt. Fern., R. parviflorus var. grandiflorus Farw., R. parviflorus var. heteradenus Fern., R. parviflorus var. hypomalous Fern., R. parviflorus var. parviflorus (Gray) Fern.

Thimbleberry


Sorbus dumosa Greene
Mountain-ash


RUBIACEAE—Madder Family.
A family of trees or shrubs, sometimes lianous, infrequently herbs. The Rubiaceae are a large pantropical and subtropical family of nearly 400 genera (of which nearly half are monotypic) and 4,800 to 5,000 species. The family is especially abundant in northern South America. About 50 genera are indigenous to Mexico and 14 in the United States. The Rubiaceae are of economic importance primarily for several tropical crops, notably coffee (Coffea), quinine (Chinchona), and ipecac (Cephaelis). Gardenia (Gardenia) and madder (Rubia) are well known ornamentals.

Bouvardia ternifolia (Cav.) Schlecht.
Bouvardia glaberrima Engelm.

Smooth bouvardia


Cultivated as an ornamental shrub.

Exsicc.: CHIR [Clark 8531, Moir 518, Reeves 1344, 1522, 3850, 4203]. FOBO [MHoy 267]. SWRS [Ordway 139].

Crusea diversifolia (Kunth) W.A. Anderson
Crusea subulata (Pavon) Gray, C. wrightii Gray


Exsicc.: CHIR [Reeves 1532]. SWRS [Walker s.n.]

Diodia teres Walt. var. angustata Gray
Button-weed


Exsicc.: CHIR [Clark 8573, Moir 527, 570, Reeves 1691]. FOBO [MHoy 311].

Galium fendleri Gray
Bedstraw


Hiland and Howell 1925.


Galium mexicanum Kunth ssp. asperrimum (Gray) Demps.
Galium asperrimum Gray, G. mexicanum var. asperrimum (Gray) Higgins and Welsh

Bedstraw


Hiland and Howell (1935).

Exsicc.: CHIR [Reeves 1446, 4152, 4552]. SWRS [Ordway s.n., Wittmann 31]. CHWA [Leithliter 124, 374, 386, 497, 562].

Galium microphyllum Gray
Rebunium microphyllum (Gray) Hemsl.

Bedstraw

5,400 - 7,000 ft. May - Sep. Perennial deciduous forb, scapose or leafy-stemmed hemicyrtophyte. Common in dry woodlands, also in canyons and streambeds at lower elevations. Quercus emoryi, Q. arizonica.


Exsicc.: CHIR [Clark 8267, Dole 104, Reeves 1413, 1460, 3108, 4369]. SWRS [Ordway 144].

Galium proliferum Gray
Galium proliferum Gray var. subnudum Greenm., G. virgatum Nutt. var. diffusum Gray

Bedstraw

[2,000] 5,000 - 5,100 ft. Mar - [May]. Winter-annual forb, scapose or leaf-stemmed therophyte. Found in canyons and rocky slopes, often on limestone. Ericamaria laricifolia, Nolina microcarpa, Dasylirion wheeleri, Aloysia wrightii, Fouquieria splendens, Opuntia phaeacantha, Cennothrix greggii, Rhus microphylla, Bouteloua curtipendula, Bouteloua hispida.
Bouteloua eriopoda, Muhlenbergia emersleyi, Leptochloa dubia, Hilaria belangeri, Heteropogon contortus, Eragrostis intermedia, Tridens muticus, Aristida fendleriana, Lycurus pheoides.


Hilend and Howell (1935).

Exsic.: FOB0 [MHoy 334]. SWRS [MHoy s.n.].

**Galium wrightii** Gray

*Galium frankliniense* Correll, *G. rothrockii* Gray, *G. wrightii* var. *rothrockii* (Gray) Ehrend. ex Ferris Bedstraw


Perennial deciduous forb, scapose or leafy-stemmed proto-chaemeophyte. Common on woodland slopes and rocky warm streambeds. *Fraxinus pennsylvania*, *Juglans major*, *Celtis reticulata*, *Vitis arizonica*, *Chilopsis linearis*, *Populus fremontii*, *Rhus microphylla*, *Zizyphus obtusifolia*.


Hilend and Howell (1935).

Exsic.: CHIR [Reeves 1359, 1459, 1717, 1795, 1860, 3817, 4368]. FOB0 [MHoy 443, 319].

**Hedyotis greenei** W.H. Lewis

*Houstonia greenei* (Gray) Terrell, *Oldlandia greenei* Gray


Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita-Pickett saddle; just south of Southwestern Research Station, West Turkey Creek near ranger station. Southern New Mexico and Arizona, northern Mexico. Madrean.

Exsic.: CHIR [Clark 8688]. SWRS [Elliot s.n.].

**Hedyotis wrightii** Gray

*Hedyotis cervantesii* Kunth, *H. pygmea* Roemer and J.A. Schultes, *H. wrightii* (Gray) Fosberg


Chiricahua Mts.: Chiricahua Nat. Mon.; Cave Creek along Herb Martray Dam; above Southwestern Research Station on mesa; near bottom of Morse Canyon Trail. Also Rincon Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Sonora, Mexico. Madrean.


**Houstonia rubra** Cav.

*Hedyotis rubra* (Cav.) Gray, *Oldlandia rubra* (Cav.) Grey


Exsic.: FOB0 [MHoy 487].

**RUTACEAE—Rue Family.**

A family of herbs, shrubs, and trees. There are about 140 genera and 1,300 species, widely distributed in the temperate and tropical regions of the northern and southern hemispheres, but most numerous in South Africa and Australia. The family contains many members of economic importance. Notable among them are the citrus fruits (*Citrus*) and Kumquat (*Fortunella*). A few species are ornamentals.

**Ptelea trifoliata** L. ssp. *angustifolia* (Benth.) V. Bailey var. *angustifolia* (Benth.) M.E. Jones

*Ptelea angustifolia* Benth.

Hop-tree


**Thamnosma texana** (Gray) Torr.


Exsic.: SWRS [Barnes s.n.]. FOB0 [MHoy 16].

**SALICACEAE—Willow Family.**

A family of woody trees or shrubs (a few arctic species are suffrutescent). The family is composed of 2 genera (*Populus* with 30-40 species, *Salix* with about 300 species) of almost world wide distribution (absent in Australasia and the Malay Archipelago and only 1 species in the Philippine Islands). The center of distribution is in the north temperate and subarctic regions. The family is of little economic importance.

P. fremontii var. tourneyi Sarg., P. macdougallii Rose
Fremont cottonwood
Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita and East Whitetail canyons; Fort Bowie Nat. Historic Site in Siphon Canyon; Tex Canyon; Cave Creek; San Simon Cienega. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Mule Mts., Animas Mts., Sierra de los Ajos. Throughout Arizona. Western Texas to Nevada, Arizona, California, and northern Mexico. Southwestern.
Exsicc.: CHIR [Clark 8103, Reeves 2967, 3437, 4354]. SWRS [SWRS 1959-199].

Populus tremuloides Michx.
Quaking aspen, alamo temblon
Exsicc.: SWRS [Ordway s.n.] . CHWA [Leithliter 668].

Salix bonplandiana Kunth
*Salix bonplandiana* var. *tourneyi* (Britt. and Shafer) Schneid., *S. tourneyi* Britt. and Shafer
Bonpland willow
Exsicc.: SWRS [Kurzius/Kingsley s.n., Roth s.n.] .

Salix exigua Nutt.
Coyote willow
Chiricahua Mts.: Fort Bowie Nat. Historic Site in lower Cut Off Canyon; Southwestern Research Station; West Turkey Creek. Also Rincon Mts., Santa Catalina Mts., Pinaleño Mts., Animas Mts. Western.
Exsicc.: FOBO [MHoy 99].

Salix gooddingii Ball
*Salix gooddingii* Ball *var. variabilis* Ball, *S. nigra* Marsh. *var. vallicola* Duddl., *S. vallicola* (Duddl.) Brit. and Shafer
Southwestern black willow, Goodding willow
Exsicc.: CHIR [Clark 8104, Reeves 2954, 3439, 3815]. SWRS [Kurzius/Kingsley s.n., Roth s.n.].

Salix irrorata Anderss.
Silver-leaf willow
Exsicc.: CHIR [Clark 8105, Reeves 2460, 2462, 2503, 2518, 2955].

Jepson, *S. sandbergii* Rydb., *S. suksdorfii* Gandog.,
*S. tracyi* Ball
Arroyo willow

deciduous shrub, microphanerophyte. Uncommon along streams.
Chiricahua Mts.: Chiricahua Nat. Mon. in Bonita Canyon
and Shake Springs; Southwestern Research Station; Wilderness
Area; West Turkey Creek. Also Sierra Ancha, Santa Catalina
Mts., Animas Mts., Cano Hills. Apache, Navajo and Coconino
counties, south to the mountains of Cochise and Pima counties.
Idaho and Washington to Arizona, California, and northern
Mexico. Western.

Exsicc.: CHIR [Reeves 1448, 3438, 4164]. SWRS
[Ordway 63, Kurzius/Kingsley s.n.]. CHWA [Leithliter 436,
618].

**Salix scouleriana** Barratt ex Hook.
*Salix brachystachys* Benth., *S. brachystachys* var.
scouleriana (Hook.) Anderss., *S. capreoides*
Anderss., *S. flavescens* Nutt., *S. flavescens* var.
capreoides (Anderss.) Bebb, *S. flavescens* var.
scouleriana (Barratt ex Hook.) Bebb, *S. nutallii*
Sarg., *S. nuttallii* var. capreoides (Anderss.) Sarg.,
*Salix scouleriana* var. brachystachys (Benth.) M.E.
Jones, *S. scouleriana* var. coetanea Ball, *S.
scouleriana* var. crassijulis (Anderss.) Schneid., *S.
scouleriana* var. flavescens (Nutt.) J.K. Henry, *S.
scouleriana* var. poikila Schneid., *S. scouleriana*
var. thompsonii Ball, *S. stagnalis* Nutt.
Scouler willow, fire willow

[8,100] 8,530 - 9,790 ft. Jun - Sep. Broadleaf deciduous
tree, microphanerophyte. Uncommon. Riparian except at highest
elevations; lower down on shaded slopes; cool microhabitats
below north-facing cliffs, etc.
Chiricahua Mts.: Rustler Park, near spring; Wilderness
Area; Centella Point; Tub Springs. Also Rincon Mts., Sierra
Ancha, Santa Catalina Mts., Finaleño Mts. Western.
Exsicc.: SWRS [SWRS 1960-104]. CHWA [Leithliter 425,
473, 598].

**Salix taxifolia** Kunth
*S. microphylla* Schlecht. and Cham., *S. taxifolia* var.
leiocarpa Anderss., *S. taxifolia* var. limitanea I.M.
Johnston, *S. taxifolia microphylla* (Schlecht. and
Cham.) Schneid., *S. taxifolia* var. seriocarpa
Anderss.

Yew-leaf willow

[3,500] 4,900 - 6,000 ft. Apr - Jul. Broadleaf deciduous
tree, microphanerophyte. Local along streams and arroyos in
grassland.
Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Bonita
Canyon and west of monument; Cave Creek: Ranch; Cave
Creek. Also Rincon Mts., Animas Mts., Huachuca Mts.
Cochise, Santa Cruz, and Pima counties. Western Texas to
Arizona, south to Guatemala. Latin American.

Excellent browse for livestock. Slow growing.
Exsicc.: CHIR [Clark 8249, Reeves 3148]. SWRS [SWRS
1959-518, Walker s.n.].

**SAPIDINACEAE**—Soapberry Family.
A family of trees or shrubs, or sometimes tendril-producing
vines, rarely herbs. There are 130 genera and about 1,100
species, primarily pantropical in distribution and abundant in
Asia and America. The family is economically important for the
lychee (*Litchi chinensis*), a much prized fruit.

**Sapindus saponaria** L. var. drummondii
(Hook. and Arn.) L. Benson
*Sapindus drummondii* Hook. and Arn.
Soapberry, western soapberry, jaboncillo
4,900 - 5,800 ft. May - Jul [Aug]. Broadleaf deciduous
tree, microphanerophyte. Uncommon on arroyos and alluvium in
grassland, grassland/scrub or south-facing slopes, dry uplands.
Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat.
Historic Site in Siphon Canyon; Whetwater Draw; Tex Canyon.
Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha,
Exsicc.: CHIR [Clark 8237, Reeves 3147, 3182, 3564,
4068]. FOBO [MHey 179]. SWRS [SWRS 1959-267].

**SAPOTACEAE**—Sapote Family.
A family of shrubs or trees, often with spines and milky juice.
Distribution is mainly in the tropics of the Eastern and Western
hemispheres with about 40 genera and 800 species. The family is
of no economic value.

**Sideroxylon lanuginosum** Michx. ssp. rigidum
(Gray) T.D. Pennington
*Bumelia lanuginosa* ssp. rigid (Gray) Cronq.,
*B. lanuginosa* var. rigid Gray, *B. lanuginosa* var.
texana (Buckl.) Cronq., *B. monticola* Buckl., *B.
rigida* (Gray) Small, *B. texana* Buckl.
Gum bumelia, sapote, ironwood
distributed throughout temperate and tropical regions. The
number of species recognized by various taxonomists varies
from 250 to 600. The economic importance of the family is
nearly limited to the aromatic and sweet-scented sandalwood
(*Santalum album*) which is prized for use in perfumery and
cabinet-making.
Anemopsis californica (Nutt.) Hook. and Arn.  
Anemopsis californica var. subglabra L. Kelso  
Yerba mansa  
Chiricahua Mts.: Southern Research Station. Also Canelo Hills, Coconino County, Yavapai County, and Cochise to Yuma counties. Western Texas to Utah, Arizona, and California, southward into Mexico. Southwestern.

Exsiccat.:
SWRS [Pough 1962-75, Todsen s.n.]

SAURURACEAE—Lizard’s Tail Family.  
A small family of perennial herbs, usually of moist situations. There are 5 genera and 7 species. From the Himalayas to Japan, Taiwan and the Philippines, Indochina, North America and Mexico. The family is of little economic value.

Anemopsis californica (Nutt.) Hook. and Arn.  
Anemopsis californica var. subglabra L. Kelso  
Yerba mansa  
Chiricahua Mts.: Southern Research Station. Also Canelo Hills, Coconino County, Yavapai County, and Cochise to Yuma counties. Western Texas to Utah, Arizona, and California, southward into Mexico. Southwestern.

Exsiccat.:
SWRS [Pough 1962-75, Todsen s.n.]

SAXIFRAGACEAE—Saxifrage Family.  
A family of herbs, shrubs, or small trees. There are about 80 genera and 1,200 species. The family is represented by 30 genera in this country, 6 in South America, 4 in Mexico, 9 in Australia and New Zealand, 6 in South Africa, and 6 in Oceania. The family is primarily important for its ornamentals with the sale of current and gooseberries of minor importance.

Heuchera glomerulata Rosendahl, Butters and Lakela  
Alumroot  

Exsiccat.:
CHWA [Leithliter 93]
SWRS [Walker s.n.]. ARIZ [Hessel-Berg 65-286, Moir 657].

SCROPHULARIACEAE—Figwort Family.  
A large family mostly of herbs or small shrubs, sometimes lianous, a few are parasites lacking chlorophyll and some others are parasites or saprophytes containing chlorophyll. About 210 genera and nearly 3,000 species, of cosmopolitan distribution and represented on all continents. The family is not particularly important except for the drug plant Digitalis and numerous garden ornamentals.

Heuchera rubescens Torr. var. versicolor  
(Greene) M.G. Stewart  
Heuchera leptomeria Greene, H. leptomeria var. peninsularis Rosendahl, Butters and Lakela, H. versicolor Greene, H. versicolor var. leptomeria (Greene) Kearney and Peebles  
Alum root  

Heuchera sanguinea Engelm.  
Coral-bells  

Exsiccat.:
CHIR [Clark 8652, 8700, Moir 516, Reeves 979, 1382, 4083]. FOBO [M Hoy 234]. SWRS [s.c. s.n.]. CHWA [Leithliter 393, 674, 716].

Saxifraga eriophora S. Wats.  

Exsiccat.:
SWRS [Walker s.n.]. ARIZ [Hessel-Berg 65-286, Moir 657].

Brachystigma wrightii (Gray) Pennell  

Exsiccat.:
CHIR [Clark 8658, Lehto 3327, Moir 493, Reeves 1239, 1602]. SWRS [s.c. s.n.].


Type was collected in the Rincon Mts. by J.C. Blumer. The elevational disparity of these collections should be verified.

Exsic.: FOBO [MHoy 463]. ARIZ [Blumer 3411].

Castilleja integra Gray var. gloriosa (Britt.) Cockerell Castilleja gloriosa Brit. Indian paintbrush


Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site north of Overlook; Southwestern Research Station; between West Turkey Creek and Rock Creek in vicinity of Sanders Ranch. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Pinaleño Mts., Animas Mts. Apache County to Mohave County, south to Cochise, Santa Cruz, and Pima counties.

Colorado, western Texas, New Mexico, Arizona and northern Mexico. Rocky Mountain.

Exsic.: CHIR [Clark 8621, 9238, Moir 544, Reeves 1525, 1677, 2440, 4180]. FOBO [MHoy 137]. SWRS [Ordway 123].

Castilleja lanata Gray Indian paintbrush, paintedcup


Exsic.: CHIR [Reeves 2652, 2985, 4059]. FOBO [MHoy 120]. SWRS [SWRS 1958-127].


Exsic.: SWRS [Ordway s.n.].

Castilleja minor (Gray) Gray

[3,000] - 5,700 [7,500] ft. Apr - Aug. Summer annual forb, scapose or leafy-stemmed hemi-ryptophyte. Rare on moist soil near streams and springs, also cool moist slopes.


Blumer [1810] was collected on the Stephens ranch on October 24, 1907, by the daughter of the family. The Stephens ranch was situated in Pinery Canyon, just inside the Coronado National Forest boundary.

Exsic.: ARIZ [Blumer N162, 1810, Loomis and Peebles 5424].

Castilleja nervata Eastw. Castilleja crenata Standl. Indian paintbrush


Chiricahua Mts.: between West Turkey Creek and Rock Creek in the vicinity of Sanders Ranch, Pineño Mts. Mexico, Apachean.

Type was collected in the Chiricahua Mts. by J.C. Blumer.

Exsic.: ARIZ [Blumer 2133, Egger 529].

Castilleja patriotica Fern. Castilleja patriotica var. blumeri (Standl.) Kearney and Peebles


Chiricahua Mts.: head of Pine Canyon; Wilderness Area; foot of Barfoot Peak; Centella Point. Also Huachuca Mts., Animas Mts., Sierra de los Ajos. Cochise County. Southeastern Arizona and northern Mexico. Madrean.

J.C. Blumer’s 1906 collection at Barfoot notes that the area was recently lumbered. Type was collected in the Chiricahua Mts. by Blumer.

Exsic.: SWRS [Ordway s.n.]. CHWA [Leithliter 823]. ARIZ [Blumer 143, 1380]. NMC [Blumer 1379; Ward and Peterson 83-040; Carter s.n.].

Castilleja sessiliiflora Pursh Downy paintedcup

[4,000] - 5,100 ft. Apr - Jun. Perennial deciduous forb, scapose or leafy-stemmed hemi-ryptophyte. Rare on rocky slopes and dry plains, sometimes on limestone. Dasylirion and Agave.


Corolla color varies from ochroleucous to pale purple within the same stand. Arizona specimens approach Castilleja mexicana (Hems.) Gray.

Exsic.: FOBO [MHoy 121]. SWRS [Roth s.n.].
Linaria dalmatica (L.) P. Mill.
Linaria dalmatica ssp. dalmatica, L. dalmatica var. macedonica Fanzl., L. macedonica (Griseb.) D.A. Sutton
5,000 ft. Aug.
Chiricahua Mts.: Fort Bowie Nat. Historic Site along Cut Off Canyon and trail. Introduced from Europe.
Exsicc.: FOBO [MHoy 486].

Maurandella antirrhiniflora (Humb. and Bonpl. ex Willd.) Rothm.
Antirrhinum maurandioides Gray, Asarina antirrhiniflora (Humb. and Bonpl. ex Willd.) Penn., Maurandella antirrhiniflora Humb. and Bonpl. ex Willd.
Blue maurandy
Chiricahua Mts.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site at Apache Spring; Portal to Paradise road; Southwestern Research Station. Also Huachuca Mts., Rincon Mts., Grand Canyon, Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Male Mts. Southeastern corner Coconino County and Mohave County to Cochise, Santa Cruz, Pima, and Yuma counties. Western Texas to southeastern California and southward. Southwestern.
Exsicc.: CHIR [Clark 8425, Reeves 1521, 4008, 4290]. FOBO [MHoy 173]. SWRS [Ordway 122].

Mimulus guttatus DC.
Monkey-flower
Chiricahua Mts.: Chiricahua Nat. Mon.: Residential Area; Fort Bowie Nat. Historic Site in Siphon Canyon tank; near Suney Flat Campground; Wilderness Area, Southwestern Research Station near stream; Bootlegger Trail. Also Huachuca Mts., Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts., Santa Rita Mts., Sierra de los Ajos. Apache

Mimulus rubellus Gray
*Mimulus gratoioides* Rydb.
Monkey-flower


Exsicc.: CHIR [Reeves 2633]. SWRS [Elliott s.n.]. NMC [Anderson-Keen 950; Thorner 378].

Mimulus verbenaceus Greene
*Mimulus cardinalis* Doug. ex Benth. var. *verbenaceus* (Greene) Kearney and Peebles

Crimson monkey-flower


Exsicc.: CHIR [Reeves 2633]. SWRS [Elliott s.n.]. NMC [Anderson-Keen 950; Thorner 378].

Penstemon barbatus (Cav.) Roth ssp. torreyi (Benth.) Keck
*Penstemon barbatus* var. *torreyi* (Benth.) Gray, *P. torreyi* Benth.

Beardtongue


Exsicc.: CHIR [Clark 8113, Reeves 1634, 3239, 3689]. FOBO [MHoy 4322]. SWRS [Roth s.n.]. CHWA [Leithlitter 135, 320, 494, 584]. NMC [Carter s.n. Blumer 1376, 1575].

Penstemon dasypusilus Gray


Exsicc.: SWRS [Hainsworth s.n.]. NMC [Carter s.n.].
Penstemon parryi (Gray) Gray
  Exsicc.: SWRS [Walker s.n.]

Penstemon pinifolius Greene Beardtongue
  Chiricahua Mts.: Chiricahua Nat. Mon.; along Ridge Trail 2.3 mi. from Rustler Park; Wilderness Area; Barfoot Peak; Centella Point. Also Animas Mts. Greenlee County and Cochise County. Southwestern New Mexico, southeastern Arizona, and adjacent Mexican Madrean.
  Exsicc.: CHIR [Clark 8174, Reeves 3240, 3596, 3959]. SWRS [Cummins 57-73]. CHWA [Leithliter 136, 467, 529]. NMC [Blumer 1541]. UNM [Reed 220].

Penstemon pseudospectabilis M.E. Jones ssp. connatifolius (A. Nels) Keck Beardtongue
  Chiricahua Mts.: Chiricahua Nat. Mon.; Cave Creek at Stewart Campground; head of Wood Canyon. Also Rincon Mts., Dos Cabezas Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Dragoon Mts. Apache, southern Coconino and Mohave counties, south and east to Graham, Cochise, Pima, and Yuma counties. Southwestern New Mexico to eastern California. Southwestern.
  Exsicc.: CHIR [Clark 8114, Reeves 2793, 3864, Reed 250]. SWRS [SWRS 1958-126, Roth s.n.]. NMC [Blumer 1536; Carter s.n.; Anderson, et al. 1151].

Penstemon ramosus Crosswhite
Penstemon lanceolatus auct non Benth., Penstemon pauciflorus auct. non Greene
  Exsicc.: FOBO [M Hoy 158]. SWRS [SWRS 1958-469, Walker s.n.].

Penstemon stenophyllus (Gray) J.T. Howell
  Exsicc.: NMC [Blumer 1604].

Schistophragma intermedia (Gray) Pennell
  Exsicc.: CHIR [Clark 8606, Lehto 3321, Moir 484, 550, Reeves 1238, 1269, 1628]. SWRS [Todsen s.n.]. ARIZ [Van Devender 89-332, Blumer 1735, Moir 550, Harris et al. 6167].

Scrophularia parviflora Woot. and Standl. S. davidsonii Pennell, S. glabrata A. Davids. Figwort
  Chiricahua Mts.: Chiricahua Nat. Mon. in Upper Rhyolite and Totem Canyons; Silver Peak. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Santa Catalina Mts., Huachuca Mts. Southern Coconino County and Mohave County, to Greenlee, Graham, Cochise, and Pima counties. Western New Mexico and Arizona. Southwestern.
  Exsicc.: CHIR [Clark 8422, Reeves 4233]. SWRS [Morse s.n.].

Seymeria bipinnatisecta Seem. Seymeria harwardii (Pennell) Standl. 6,750 ft. Oct. Summer annual forb, scapose or leafy-stemmed hemi-cryptophyte; microphyll, orthophyll. Rare.
  Chiricahua Mts.: Cave Creek. Rio de Bavispe, Sierra Madre, Mexico. Madrean.
  McLaughlin and Mason (1977)
  Exsicc.: ARIZ [Harlan, s.n.].

Verbascum thapsus L. Moth-mullein
  Chiricahua Mts.: Chiricahua Nat. Mon. in Rhyolite Canyon; Rustler Park; Barfoot Park; Pine Canyon; along Crest Trail; Pinery Canyon. Also Pinaleño Mts., Sierra Ancha. Widespread in the U.S. and introduced from the Middle East. Here and there in Coconino, Yavapai, Gila and Cochise counties. Naturalized from Europe. Temperate, Introduced.
  Exsicc.: CHIR [Clark 8222, Reeves 3096, 3098]. SWRS [Ordway s.n.]. CHWA [Leithliter 166, 188, 329]; ARIZ [Blumer 1611].
Verbasurn virgatum Stokes
Mullein
5,100 - [7,000] 7,800 ft. Jul - Sep [Fall]. Summer annual forb, scapose or leafy-stemmed hemicyptophyte; mesophyllum, orthophyll. Common on disturbed soil and alluvium.

Chiricahua Mts.: Chiricahua Nat. Mon. in Lower Bonita Canyon; Sunny Flat Campground; Centella Point; Pine Canyon. Animas Mts. Coconino County, Cochise County. Here and there in North America; adventive from Europe. Introduced.

Exsicc.: CHIR [Clark 8465, Reeves 1631, 2872, 3414]. SWRS [SWRS 1959-848]. ARIZ [Blumer 1481].

Veronica peregrina L. ssp. xalapensis (Kunth) Pennell
Veronica peregrina var. xalapensis (Kunth) Pennell, V. sherwoodii M.E. Peck, V. xalapensis Kunth

Speedwell, necklace weed

Chiricahua Mts.: USFS Ranger Station, Cave Creek; Fort Bowie Nat. Historic Site, upper South Canyon. Also Rincon Mts., Pinaleño Mts., Sierra Ancha, Animas Mts. Found throughout the state. Widely distributed in North America; South America. Temperate, Latin American.

Exsicc.: SWRS [Mouat s.n.]. FOBO [MHoy 160].

SOLANACEAE—Nightshade Family.
A large family of herbs, shrubs, and trees; often lianous or creeping. About 85 genera and in excess of 2,200 species, distributed primarily in tropical America and South America (where there are 38 endemic genera). The Solanaceae are a family of considerable economic importance, and are the source of food plants such as the potato and eggplant family of considerable economic importance, and are the source of many crops. The members of this family are commonly encountered.

Chamaesarachia coronopus (Dunal) Gray


Exsicc.: CHIR [Reeves 1251, 3109, 3509]. SWRS [SWRS 1958-537].

Chamaesarachia sordida (Dunal) Gray.
Groundcher


Exsicc.: FOBO [MHoy 118]. SWRS [Pough 1961-114, Barnes s.n.].

Datura ferox L.
Datura quercifolia Kunth


Exsicc.: ARIZ [Blumer 2667].

Datura wrightii Regel
Datura metel L. var. quinquenervia Torr., D. meteloides auct non Dunal
Sacred datura, indian-apple, tolguacha


Southwestern, Latin America.

All parts of the plant contain a powerful alkaloid, daturine, which has properties similar to atropine. Livestock and humans have been poisoned by this plant. Some Indians eat the roots and other plant parts to induce visions, a dangerous practice. Three persons were fatally poisoned at Grand Canyon in 1968 as a result of this practice.


Jaltomata procumbens (Cav.) J.L. Gentry
Saracha procumbens (Cav.) Ruiz and Pavón


Southern Arizona to South America. Southwestern, Latin America.

Type collected in the Chiricahua Mts. by J.C. Blumer.

Exsicc.: SWRS [Leutcke s.n.]. ARIZ [Blumer 1637].

Lycium fremontii Gray

Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Sierra Ancha, Santa Catalina Mts. Western and southern Arizona.

Arizona, southeastern California and northwestern Mexico. Sonoran.

Exsicc.: FOBO [MHoy s.n.].

Lycium pallidum Miers
Wolf-berry, desert-thorn

Margaranthis solanaceus Schlecht.
*Margaranthus lemmontii* Gray, *M. purpurascens* Rydb.


Nicotiana attenuata Torr. ex S. Wats.

[1,000] - 6,000 [7,000] ft. [May] - [Oct]. Summer annual forb, scapose or leafy-stemmed hemicyryptophyte, microphyll, orthophyll. Uncommon in arroyos and on rocky slopes.


Nicotiana trigonophylla Dunal var. trigonophylla

Tobacco


Physalis acutifolia (Miers) Sandw.

*Physalis wrightii* Gray


Physalis hederifolia var. fendleri (Gray) Cronq.

*Physalis fendleri* Gray, *P. fendleri* Gray var. *cordifolia* (Gray) Cronq., *P. hederifolia* var. *cordifolia* (Gray) Waterfall

Groundcherry, husk-tomato


Exsicc.: CHIR [MHoy 305]. SWRS [Reeves 4209]. FOBO [MHoy 305].

Physalis longifolia Nutt. var. longifolia


Longleaf groundcherry

[5,000] - [8,500] ft. [Aug] - [Sep]. Perennial deciduous forb, scapose or leafy-stemmed hemicyryptophyte; microphyll, orthophyll. Found on alluvial slopes, may prefer limestone.

Quercus oblongifolia, *Q. emoryi*, *Bouteloua curtipendula*.

Chiricahua Mts.: Fort Bowie Nat. Historic Site. Also Huachuca Mts. Southeastern corner Apache and Greenlee County; Cochise, Santa Cruz, and Pima counties. Illinois to South Dakota, Arkansas, and eastern Arizona. Plains. Exsicc.: FOBO [MHoy s.n.].

Physalis pubescens L.

Groundcherry, husk-tomato


Solanum americanum P. Mill.


Solanum douglasii Dunal

*Solanum nigrum* L. var. *douglasii* (Dunal) Gray


Exsicc.: ARIZ [Blumer 1512, 1768, 1797; R.J. Barr 60-282, 62-488; Darrow et al. 1273; O.M. Clark 8335].

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Solanum elaeagnifolium Cav.

Silverleaf nightshade, horse-nettle, trompillo, white (or silver) horse-nettle, bull-nettle.


Exsicc.: CHIR [Clark 8210, Reeves 999, 1686, 3097].

FOBO [MHoy 151]. SWRS [SWRS 1959-814, Ordway s.n.].

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Solanum fendleri Gray ex Torr.

Wild potato


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Solanum heterodoxum Dunal var. novomexicanum Bartlett

Nightshade


Chiricahua Mts.: Chiricahua Nat. Mon. in Campground and Residential Areas; Greenhouse Trail; mouth of Price Canyon; Straight Line Road at Willow Tank. Also Animas Mts. Yavapai County, Cochise County. Western Texas to Arizona and Mexico. Chihuahuan.

Exsicc.: CHIR [Borell 5, Reeves 1683, 4450, 4495]. SWRS [Roth s.n.].

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Solanum jamesii Torr.

Wild potato

5,100 - [8,500] 7,600 ft. [Jul] Aug - [Sep]. Summer annual forb, scapose or leafy-stemmed therophyte; microphyll, orthophyll. Found mostly in coniferous forests.

Chiricahua Mts.: Cave Creek Canyon 4.5 mi. west of Portal. Apache County to Coconino County, south to Cochise and Yavapai counties. Colorado and Utah to Texas and Arizona. Southwestern.

Exsicc.: SWRS [Pough 1962-85].

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Solanum rostratum Dunal

*Androcra rostrata* (Dunal) Rydb., *Solanum cornutum* auct. non Lam., Nightshade, buffalo bur, mala mujer


Chiricahua Mts.: Chiricahua Nat. Mon. at edge of parking lot, Headquarters Area and Lower Bonita Canyon; Tex Canyon. Also Huachuca Mts., Animas Mts., Canelo Hills, Sierra de los Ajos. Apache County to Coconino County, south to Cochise and Pima counties. North Dakota and Wyoming to Arizona and Mexico. Rocky Mountain.

Exsicc.: CHIR [Clark 8240, Reeves 3508]. SWRS [SWRS 1959-s.n.].

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Solanum tuberosum L.

Potato, patata

8,200 ft. Jul - [Sep]. Deciduous perennial forb, tuber geophyte; microphyll, orthophyll. Shaded slopes.

Chiricahua Mts.: Barfoot Park. This is not specifically distinct from the cultivated potato of Latin America. C.S. Fly maintained a cabin near Fly Peak where he cultivated potatoes, but the source of Blumer's collection is problematical since the potato is not naturalized in our area.

Exsicc.: NMC [Blumer 1566, 1579].

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TAMARICACEAE—Tamarisk Family.

A family of small, heathlike trees or shrubs with slender flexuous branches, halophytic or xerophytic, leaves scalelike. There are 4 genera and about 100 species, mostly of the Mediterranean region and central Asia. None is indigenous to the United States, though several are naturalized from South Carolina across the south to California. The family has no economic value.

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Tamarix ramosissima Ledeb.

Salt cedar


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TYPHACEAE—Cattail Family.

A family of perennial herbs of open marshes with creeping rhizomatous rootstocks. A single genus *Typha* contains about 15 species. The genus is of more or less cosmopolitan throughout riparian and estuarine marshes of temperate and tropical regions of northern and southern hemispheres.
Typha domingensis Pers.
Typha angustata Bory and Chuabard

Cattail
Chiricahua Ms.: Chiricahua Nat. Mon.: Picket Canyon; West Turkey Creek, Alisa Tank. Also Rincon Ms., Sierra Ancha, Animas Ms., Santa Catalina Ms., Navajo, Coconino, Gila, Maricopa, and Cochise counties. Southern United States to southern South America. Temperate, Latin American.
Exsic.: CHIR [Clark 8298].

Typha latifolia L.
[3,000] - [7,000] 8,200 ft. Aquatic and hydropirarian.
Chiricahua Ms.: Barfoot Park; Canelo Hills. Various parts of the plant are used as food by Indians. Listed by Russell (1982) as collected by J.C. Blumer in Barfoot Park.

ULMACEAE—Elm Family
A family of trees or shrubs. About 15 genera and more than 150 species. Distributed throughout much of the northern hemisphere and more, particularly in the tropics and subtropics. The family is principally valued as ornamental trees and, to a minor degree, for lumber.

Celtis laevigata Wild. var. reticulata (Torr.) L. Benson.
Celtis douglasi Planch., Celtis occidentalis L. var. reticulata (Torr.) Sarg., C. reticulata Torr., C. reticulata var. vestita Sarg.
Netleaf hackberry, palo-blanco, sugar-berry
Chiricahua Ms.: Chiricahua Nat. Mon. in East Whetstail Canyon, Bonita Canyon Road, Lower Pickett and Bonita canyons; Fort Bowie Nat. Historic Site; Whitewater Draw; stock tanks on flats between West Turkey Creek and Rucker Canyon; Portal to Paradise road; Southwestern Research Station. Also Huachuca Ms., Rincon Ms., Santa Catalina Ms., Mule Ms., Peloncillo Ms., Pinaleiio Ms., Sierra Ancha, Animas Ms., Sierra de los Ajos. Oklahoma and Colorado, Arizona. Southwestern. Widspread. Southwestern.
Morphology variable.
Exsic.: CHIR [Clark 8254, Reeves 3955, 4085]. SWRS [Roth s.n., Walker s.n.].

Celtis pallida Torr.
Celtis spinosa Spreng. var. pallida (Torr.) M.C. Johnston, C. tala Gillies var. pallida (Torr.) Planch., Momisilia pallida (Torr.) Planch.
Granjeno, desert hackberry
Chiricahua Ms.: San Simon Cienega. Also Rincon Ms., Santa Catalina Ms. Greenlee, Gila, Pinal, Maricopa, Cochise, and Pima counties. Western Texas to Arizona and northern Mexico. Southwestern.

VERBENACEAE—Verbena Family
A family of herbs, shrubs, or trees, with stems and twigs often quadrangular. Primarily of tropic or subtropical distribution, although Verbena extends into the temperate regions of the Old and New World. The family is economically most important for teak lumber (Fectiones grandis) of east India.

Aloysia wrightii Heller ex Abrams
Lippia wrightii Gray ex Torr.
Wright lippa, oreganoillo
Chiricahua Ms.: Chiricahua Nat. Mon.; Fort Bowie Nat. Historic Site along South Canyon and trail; 1.5 mi. north of Portal. Also Huachuca Ms., Rincon Ms., Pinaleiio Ms., Sierra Ancha, Santa Catalina Ms., Mule Ms., Animas Ms. Coconino County and northern Mohave County to Greenlee, Cochise, Pima, and Yuma counties. Western Texas to southern Nevada, southeastern California, and northern Mexico. Southwestern.
Exsic.: CHIR [Reeves 1244, 3554]. FOBO [MHoy 328]. SWRS [Cazier 42].

VALERIENACEAE—Valerian Family
A family of annual or perennial herbs, rarely subshrubs. There are 10 genera and about 370 species, mostly of north temperate distribution except for occurrences in the Andes of South America. Valeriana is the largest genus (about 210 species). The family is of minor economic importance.

Valeriana arizonica Gray
Valeriana acutiloba Rydb. var. ovata (Rydb.) A. Nels., V. ovata Rydb.

Tobacco root
Chiricahua Ms.: Rustler Park; Centella Point. Also Pinaleiio Ms., Sierra Ancha, Rincon Ms., Santa Catalina Ms., Sierra de los Ajos. Apache, Navajo, and Coconino counties to Cochise, Santa Cruz, and Pima counties. Wyoming to New Mexico, southern Arizona, and Sonora, Mexico. Rocky Mountain.
Exsic.: SWRS [Roth s.n.]. CHWA [Leithliter 66, 334, 343].
Glandularia bipinnatifida (Nutt.) Nutt. var. bipinnatifida
Verbena ambrosiifolia Rydb. ex Small, V. bipinnatifida Nutt., V. bipinnatifida var. latiloba Perry, V. ciúata Benthi., V. ciúata var. longidentata Perry, V. ciúata var. pubera (Greene) Perry, V. demareei Moldenke, V. pubera Greene

Vervain


Exsicc.: CHIR [Reeves 2966]. FOBO [MHoy 43]. Repository unknown [Blumer 1345].

Tetraclea couleri Gray
Tetraclea couleri Gray var. angustifolia (Woot. and Standl.) A. Nels. and J.F. Macbr.

Verbena bracteata Lag. and Rodr.
Verbena bracteosa Michx., V. imbricata Woot. and Standl.

Vervain

Exsicc.: CHIR [Clark 8187]. SWRS [Pough 1961-65].

Verbena carolina L.


Exsicc.: SWRS [Roeth s.n., Moldenke 137].

Verbena gracilis Desf.

Vervain


Verbena macdougallii Heller

Vervain

Exsicc.: CHIR [MHoy 231].
also from Greenlee, Yavapai, and Pima counties). Southern Wyoming to western Texas, New Mexico, and Arizona. Rocky Mountain.

Exsiccat.: CHIR [Fish 6, Reeves 1511, 4543].

**Verbena neomexicana (Gray) Small**

*Vervain*


Exsiccat.: CHIR [Clark 9102, Reeves 3828, 3865, 4004].

**Verbena plicata Greene**


Exsiccat.: ASU [Marrs-Smith 851; Tate 672; Cazier 918].

**VIOLACEAE—Violet Family.**

A family of shrubs or herbs (usually perennial), rarely climbing. There are about 16 genera and 850 species, of wide distribution and occurring on all continents. The family is of economic value as ornamentals and in the florist trade.

**Hybanthus verticillatus (Ortega) Baill. var. verticillatus**

*Calceolaria verticillata* (Ortega) Kunz, *Hybanthus lineart* (Tort.) Shinners


Exsiccat.: SWS [Roth s.n.]. CHIR [Reeves 2749, 4122]. ARIZ [Blumer 194, 1720].

**Viola canadensis L.**

*Violet*


Chiricahua Mts.: Chiricahua Nat. Mon. in Totem Canyon; West Turkey Creek; Pint Canyon; Greenhouse Canyon; roadcut below Barfoot Park; Wilderness Area, west of Tub Spring. Also Rincon Mts., Pinaleno Mts., Sierra Ancha, Santa Catalina Mts. Apache County to Cochise County, south to Cochise and Pima counties, New Brunswick to British Columbia, south to South Carolina, Alabama, New Mexico, and Arizona. Temperate.


**Viola nephrophylla Greene var. arizonica**

*Greene Kearney and Peebles*


Exsiccat.: SWS [SWS 1959-427]. CHWA [Leithliter 50].

**VISCACEAE—Mistletoe Family.**

A family of herbs or shrubs parasitic on tree branches, attached to the host by modified roots. Primarily a tropical family, of about 30 genera and 1,100 or more species, but one that extends into temperate zones of both hemispheres.

**Arceuthobium apachecum Hawksworth and Wiens**

*Apache dwarf mistletoe*


**Arceuthobium blumeri A. Nels.**

*(A. campylopodum Engel. forma blumeri* (Engelm.) Gill)*


Chiricahua Mts.: Wilderness Area. *A. campylopodum* found throughout most of Arizona in various forms. *Forma blumeri* occurs in mountains of Graham, Cochise, and Pima counties, parasitic on *Pinus strobiiformis*. The type of *A. blumeri* was collected by Blumer in the Chiricahua Mts. Madrean.

Type collected in the Chiricahua Mts. by J.C. Blumer. Exsiccat.: CHWA [Leithliter 2]. ARIZ [Blumer s.n.].

**Arceuthobium douglasii Engelm. ex L.C. Wheeler**


Chiricahua Mts.: Onion Saddle. Also Sierra Ancha, Animas Mts. Apache, Navajo, and Coconino counties, south to Greenlee, Graham, and Pima counties. Western Canada to New Mexico, Arizona, California, and Mexico. Western. Host: *Pseudotsuga menziesii*.

Exsiccat.: SWS [Mathiasen s.n.].

**Arceuthobium gillii Hawksworth and Weins**

*Mistletoe*

Arceuthobium vaginatum (Willd.) J. Presl ssp. cryptopodium (Engelm.) Hawksworth and Wiens

Paraphrased pages from the document: 

**Phoradendron bolleanum (Seem.) Eichler ssp. pauciflorum (Torr.) Wiens**

*Phoradendron bolleanum var. pauciflorum (Torr.) Fosberg, P. pauciflorum Torr.*

Juniper mistletoe


**Phoradendron californicum Nutt.**

*Phoradendron californicum var. distans Trel., P. californicum var. leucocarpum (Trel.) Jepson*

3,500 - 5,000 ft. Feb - Mar [Apr]. Parasite geophyte. Parasite on evergreen oaks and (rarely) barberry.

**Phoradendron capitellatum Torr. ex Trel.**

*Phoradendron bolleanum (Seem.) Eichl. var. capitellatum (Torr. ex Trel.) Kearney and Peebles*  

11 genera and about 118 species, widely distributed in the tropics and subtropics with ranges extending into the north and south temperate regions. Economically the family is of most importance for the wine grape (*Vitis vinifera*) and Virginia creeper (*Parthenocissus quinquefolia*) are cultivated as ornamental vines.

**VITACEAE—Grape Family.**

A family mostly of climbing shrubs with tendrils, seldom erect shrubs or small trees. There are 11 genera and about 600 species, widely distributed in the tropics and subtropics with ranges extending into the north and south temperate regions. Economically the family is of most importance for the wine grape (*Vitis vinifera*) and other species grown extensively for their edible fruit from which are obtained wine and raisins.

**Phoradendron juniperinum Engelm.**

Mistletoe


**Phoradendron tomentosum (DC.) Engelm. ex Gray**

*Phoradendron flavescens Nutt. ex Engelm. var. pubescens Engelm. ex Gray*, *P. serotinum (Ref.) M.C. Johnston var. pubescens (Engelm. ex Gray)*

**Phoradendron villosum (Nutt.) Nutt. ssp. coryae (Trel.) Wiens.**

*Phoradendron coryae Trel.*, *P. havardianum Trel.*

**Parthenocissus quinquefolia (L.) Planch. var. quinquefolia**

*Ampelopsis quinquefolia (L.) Michx.*, *Hedera quinquefolia*, *Parthenocissus hirsuta* (Pursh) Graebn., *P. inserita* (Kerner) Fritsch, *P. quinquefolia*
Kallstroemia grandiflora Torr. ex Gray
Arizona-poppy, Mexican-poppy, summer-poppy
4,700 - 5,200 ft. Jul - Aug [Sep]. Summer-annual forb, spreading therophyte. Uncommon on gravelly flats and drainages, also occurring on dry uplands.
Chiricahua Mts.: Chiricahua Nat. Mon. west of monument; Fort Bowie Nat. Historic Site at summit of Apache Pass, below Paradise. Also Rincon Mts., Sierra Ancha, Santa Catalina Mts., Animas Mts., Sierra de los Ajos. Greenlee County to Yavapai County, south to Cochise, Santa Cruz, Pima, and Yuma counties. Texas to Arizona and Mexico. Southwestern.
Exsicc.: CHIR [Reeves 4092, 4100]. FOBO [MHoy 258]. SWRS [Cummins s.n.].

Kallstroemia hirsutissima Vail ex Small
Carpetweed
Exsicc.: ASU [Lehto 3954].

Kallstroemia parviflora J.B.S. Norton
Kallstroemia intermedia Rydb.
Platania racemosa, Quercus arizonica, Arbutus arizonica, Vitis arizonica, Juglas major, Fraxinus pennsylvanica.
Exsicc.: CHIR [Reeves 1664, 4113, 4176]. FOBO [MHoy 286]. SWRS [s.n.].

Larrea tridentata (Sessé and Moc. ex DC.) Coville var. tridentata
Covillea tridentata (Sessé and Moc. ex DC.) Vail, Larrea divericata auct. non Cav., Larrea glutinosa Engelm.
Creosote bush, greasewood, hediondilla, gouvernadora
[4,000] - 4,900 (5,000) ft. May - Sep [flowers throughout the year but profusely in the spring]. Broadleaf evergreen shrub, nanophanerophyte; leptophyll, sclerophyll. Common on lower bajadas and flats with silty soil. Prosopis, Yucca.
Exsicc.: FOBO [MHoy 213]. SWRS [Wittmann 147, Bichler 191, SWRS 1956-97].

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Tribulus terrestris L.
Caltrop, puncture-vine, bull-head, bur-nut, cadillo, abrojo de flor
Summer-annual forb, spreading therophyte. Rare on grassland and lower canyons on disturbed and beaten ground, also on dry uplands.


This species bears fruits armed with stout spines capable of piercing bicycle tires.

Exsic.: CHIR [Clark 8213, Reeves 1252, 1647, 4165]. SWRS [SWRS 1958-492]. FOBO [MHoy 481].
Literature Cited


Appendix 1

Forrest Shreve's List of 524 Blumer Collections Made in the Chiricahua Mountains, 1906 and 1907.

Chronological arrangement of this list gives insight into Blumer's travels and collection methods. His first recorded collection was made 8 August 1906 near Paradise in the eastern foothills of the range where he headquartered. Several weeks were then spent in the high country, apparently on horseback, with occasional trips to the Wilgus Ranch, "Miss Rhoda Rigg's Ranch", and Stephans' Ranch, perhaps for supplies. He seems to have spent the entire summer in the field since the greatest hiatus in collecting dates is 4 days until 27 November 1906 when there was a 10 day break in collecting activity. He made his last 1906 collection at the Wilgus Ranch on Christmas day. Blumer returned to the mountains in June 1907 and remained until late October.

Blumer's preferred routes of travel were Pinery Canyon, and Pine Canyon when crossing the range. He made little use of West Turkey Creek, Tex Canyon, Rucker Canyon, Hands Pass/Whitetail Canyon for this purpose. He moved north and south along the what is now known as the Crest Trail south of Rustler Park. He seems to have spent little time in the high country to the north. Although the bulk of his collections were made at high elevations, Blumer also collected in the foothills, particularly on the east side of the range.

The list that follows gives Shreve's name for the plants. In the several instances where the Blumer collections were the sole record found by us, Shreve's name is preceded by an asterisk (*). The Shreve name is followed by the current name, so far as we could discover it through annotations and Kartesz (1994) list. A question mark is placed where we were unable to assign a modern name to Shreve's taxa. Blumer's collection date, locality, field number follow as exsiccatae.

*Acalypha lindheimeri* Muell.-Arg. Exsicc.: 10/31/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1498.
*Acalypha neomexicana* Meull.-Arg. Exsicc.: 09/13/07 Paradise 1661; 09/21/07 Cedar Gulch, Paradise 1710.
*Achillea lanulosa* Nutt. = *A. millefolium* Nutt. var. *occidentalis* DC. Exsicc.: 08/24/06 Barfoot Park 1340.
*Adenostegia wrightii* (Gray) Greene = ? Exsicc.: 09/30/07 Cedar Gulch, Paradise 1744.
*Agastache paludiflora* (Heller) Rydb. Exsicc.: 09/21/06 Barfoot Park 1407.
*Agrostis verticillata* Vill. = *Polypogon viridus* (Gouan) Breistr. Exsicc.: 10/22/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1490.
*Allionia melanotricha* Standl. sp. nov.? = *A. pratensis* Standl.? Exsicc.: 09/17/06 Barfoot Park 1384; 09/17/06 Barfoot Park 1385.
Agrostis verticillata Vill. ~ Polypogon viridis (Gouan) Breistr. Exsicc.: 10/22/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1490.

Allionia gracilisima Standl. ~ Mirabilis cocconeus (Torr.) Benth. and Hook. Exsicc.: 10/05/07 Paradise 1769.

Allionia melanotricha Standl. sp. nov.? ~ A. pratensis Standl.? Exsicc.: 09/17/06 Barfoot Park 1384; 09/17/06 Barfoot Park 1385.

Allium recurvatum Rydb. ~ A. cernuum var. obtusum Cockerell ex J.F. Macbr. Exsicc.: 10/01/06 Barfoot Park 1440.

Alsine longipes (Goldie) Coville ~ Selloaria longipes ssp. longipes Exsicc.: 07/07/07 Fly Park 1602.

Amaranthus sp. Exsicc.: 09/18/07 Paradise 1667.

Amaranthus blitoides S. Wats. Exsicc.: 08/22/07 Barfoot Park 1595.

Amaranthus blitum L. Exsicc.: 08/23/07 Barfoot Park 1596 ARIZ.

Amaranthus palmeri S. Wats. Exsicc.: 08/22/07 Barfoot Park 1594.

Amaranthus retroflexus L. Exsicc.: 09/20/06 Barfoot Park 1404.

Ambrosia psilostachya DC. Exsicc.: 10/10/07 Wilgus Ranch 1799.


Andropogon torreyanus Steud. ~ ? Exsicc.: 10/31/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1500.

Androsace diffusa Small ~ Androsace septentrionalis L. ssp. subulifera (Gray) G.T. Robbins Exsicc.: 07/02/07 Barfoot Park 1554 ARIZ.

Anemopsis californica B. and H. ~ Anemopsis californica (Nutt.) Hook. and Arn. Exsicc.: 06/28/07 Reed Ranch (SWRS) 1548

A. thurberi Gray Exsicc.: 09/19/07 Paradise 1670 ARIZ; 09/28/07 Paradise 1730 ARIZ.

*Anthemis cotula L. Exsicc.: 07/30/07 Barfoot Park 1573.

Anthericum torreyi Baker pro parte ~ Echeandia flavescens (J.A. and J.H. Schultes) Cruden Exsicc.: 09/05/06 Barfoot Park 1355 ARIZ.

Apocynum scopulorum Greene ex Rydb. ~ A. androsaemifolium L. var incanum A. DC. Exsicc.: 06/26/07 Pine Canyon 1543.

Aquilegia arizonica Heller ~ ? Exsicc.: 09/30/06 Between Barfoot Peak and Ida Peak 1475; 10/01/06 Barfoot Park 1441.

Aquilegia chrysantha Gray Exsicc.: 09/27/06 Monument Peak 1454; 07/01/07 Chaperon Canyon 1545.

Aquilegia pubescens Coville Exsicc.: 07/03/07 Chaparone Canyon. Annotated to Aquilegia chrysantha Gray

Aragallus /ambertii (Rush) Greene ~ ? Exsicc.: 08/20/07 Jhu's Pass 1620.

Arenaria confusa Rydb. ~ A. lanuginosa (Michx.) Rohrb. ssp. saxosa (Gray) Maguire Exsicc.: 09/22/06 Barfoot Park 1410.

Arenaria fendleri Gray Exsicc.: 10/02/06 Summit Monument 1459.

Arenaria saxosa cinerascens B.L. Robins. ~ A. lanuginosa (Michx.) Rohrb. ssp. saxosa (Gray) Maguire Exsicc.: 09/21/06 Barfoot Park 1408.

Argemone hispida Gray Exsicc.: 07/19/07 Stephens' Ranch (Pinery Canyon) 1814.

Aristida americana bromoides (Kunth) Scribn. and Merr.? ~ Bouteloua radicosa (Fourn.) Griffiths? Exsicc.: 09/19/07 Paradise 1717.

Aristida schiedeana auct. non Thin. and Ruhr. ~ A. orcuttiana Vase Exsicc.: 08/30/07 Between. W. Turkey Creek and Cottonwood Creek 1633.

Artemisia dracunculoides Pursh. ~ A. dracunculus L. ssp. dracunculus Exsicc.: 09/13/06 Barfoot Park 1372.

Artemisia gnaphalioides Nutt. ~ A. ludoviciana Nutt. ssp. ludoviciana Exsicc.: 10/17/07 Paradise 1798 ARIZ.

Artemisia ludoviciana Nutt. Exsicc.: 09/17/06 Barfoot Park 1389.

Artemisia wrightii Gray ~ A. carruthii Wood ex Carruth. Exsicc.: 10/17/07 Chirichahua Mine 1794

Asclepias tuberosa L. Exsicc.: 07/18/07 Fine Canyon 1607.


Aster hebecladus DC. ~ ? Exsicc.: 10/08/07 Wilgus Ranch 1773.

Aster hesperius Gray ~ A. lanceolatus Willd. ssp. hesperius (Gray) Semple and Chmielewski Exsicc.: 10/08/07 Wilgus Ranch 1774.

Athyrium cyclosorum Ruhr. ~ A. filix-femina (L.) Roth var. cyclosorum (Ruhr.) C. Christens. Exsicc.: 09/06/07 Cold Spring 1650.

*Avena fatua L. Exsicc.: 07/31/07 Barfoot Park 1574.

Baccharis thesioides Kunth Exsicc. 10/28/06 Barfoot Park 1451.
Baileya multiradiata Harvey and Gray ex Gray Exsicc.: 10/20/07 Silver Creek 1801.
*Barbarea barbara (L.) McMil. → B. orthoceras Ledeb. Exsicc.: 07/01/07 Choperon Canyon 1550.
Bidens sp. Exsicc.: 09/21/07 Cedar Gulch, Paradise 1711.
Bidens bipinnata L. Exsicc.: 09/21/07 Cedar Gulch, Paradise 1712; 10/22/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1486.
Bidens pilosa L. Exsicc.: 08/25/07 Chaperon Canyon 1625 09/03/07 Shelter Cove, N. Wilgus Ranch 1647.
Bidens tenuisecta Gray Exsicc.: 09/17/06 Barfoot Park 1386; 08/22/07 Barfoot Park 1593.
Biepharoneuron tricholepis (Torr.) Nash Exsicc.: 09/14/06 Barfoot Park 1375.
Boerhaavia purpurascens Gray Exsicc.: 09/20/07 Paradise 1672.
Boerhaavia thomberi M.E. Jones → B. erecta L. Exsicc.: 10/05/07 Paradise 1765.
Bouteloua aristidoides (Kunth) Griseb. Exsicc.: 09/20/07 Paradise 1705.
Bouteloua curtipendula (Michx.) Torr. Exsicc.: 09/19/07 Paradise 1671.
Bouteloua oligostachya (Nutt.) Torr. → B. gracilis (Wild. ex Kunth) Lag. ex Griffiths var. gracilis Exsicc.: 09/18/07 Paradise 1704.
Bouteloua polysacchara (Benth.) Torr. → B. rothrockii Vase Exsicc.: 09/20/07 Paradise 1706.
Bouvardia triphylla Salisb. → ? Exsicc.: 06/29/07 Gooseneck, Paradise 1549; 07/20/07 Gooseneck, Paradise 1606
*Brassica nigra (L.) W.D.J. Koch Exsicc.: 08/19/07 Barfoot Park 1592.
Bromus maximus auct. non Desf. var. gussonii Parl. → B. diandrus Roth Exsicc.: 08/17/07 Barfoot Park 1585.
*Bromus polyanthus Scribn. var. paniculatus Shear → B. polyanthus Scribn. Exsicc.: 09/12/06 Head of Chaparone Canyon 1818; 8/17/07 Barfoot Park 1367; 10/12/07 Wilgus Ranch 1780.
Bromus richardsonii Link. → B. ciliatus L. Exsicc.: 09/13/06 Barfoot Park 1368.
Cacalia decomposita Gray → Psalidium decompositum (Gray) H.E. Robins. and Brett. Exsicc.: 09/15/06 Barfoot Park 1378.
Calceolaria verticillata (Ortega) Kunze → Hybanthus verticillata (Ortega) Baill. var. verticillata Exsicc.: 09/24/07 Paradise 1720.
Calliandra humilis Benth. Exsicc.: 09/19/07 Paradise 1677.
*Camelina sativa (L.) Krantz Exsicc.: 07/30/07 Barfoot Park 1572.
Carduus floccosus Rydb. → ? Exsicc.: 09/18/06 Barfoot Park 1395.
Carduus ochrocentrus (Gray) Greene → Cirsium undulatum (Nutt.) Spreng Exsicc.: 07/19/07 Stephens' Ranch (Pinery Canyon) 1815.
Carex sp. → ? Exsicc.: 09/20/06 Barfoot Park 1401; 09/25/06 Barfoot Park 1423.
Carminatia tenuiflora DC. Exsicc.: 09/18/07 Paradise 1668.
Cassia leptocarpa Benth. glaberrima M.E. Jones → Senna hirsuta (L.) Irwin and Barneby var. glaberrima (M.E. Jones) Irwin and Barneby Exsicc.: 09/03/06 Miss Rhoda Riggs’ Ranch (Pinery Canyon) 1453; 09/01/07 Joe Smith’s Ranch (Cottonwood Creek) 1642.
Cassia lindeheimeriana Scheele → Senna lindeheimeriana (Scheele) Irwin and Barneby Exsicc.: 10/03/07 Maxon’s Peak 1758.
Castilleja blumeri Standl. → C. patriarcha Fern. Exsicc.: 09/15/06 Barfoot Park 1380.
Castilleja minor Gray → C. minor (Gray) Gray Exsicc.: 06/24/07 Stephens Ranch 1810.
Castilleja patriarcha Fern. Exsicc.: 09/15/06 Barfoot Park 1379.
Ceanothus fendleri Gray Exsicc.: 08/21/07 Rustler Park 1283.
Centaurea rothrockii Greenm. Exsicc.: 10/17/06 Pine Canyon 1480
Centaurium arizonicum (Gray) Heller → C. calycosum (Buckl.) Fern. Exsicc.: 10/11/07 Joe Smith’s Ranch (Cottonwood Creek) 1792.
Cerastium sericeum S. Was. → C. nutans var. objectum Kearney and Peebles Exsicc.: 08/24/06 Barfoot Park 1338.
Cerastium texanum Britt. Exsicc.: 09/26/06 Barfoot Park 1428.
Cevallia sinuata Lag. Exsicc.: 11/05/06 Fort Bowie 1508.
Chaetochoa grisebachii (Fourn.) Scribn. Setaria grisebachii Fourn. Exsicc.: 09/13/07 Paradise 1660; 09/24/07 Paradise 1724.
Chaetochoa viridis (L.) Scribn. → Setaria viridis (L.) Beauv. var. viridis Exsicc.: 08/18/07 Barfoot Park 1588.
Chamaesara rach conoides (Moric. ex Dunal) Britt. → C. sordida (Dunal) Gray Exsicc.: 10/02/07 Maxon’s Peak 1752.
Chapeltale alsophila Greene → Leimnizia seemannii (Schultz-Bip.) Nesom Exsicc.: 10/06/06 Rustler Peak Spring 1464.
Cheilanthes eatoni Baker Exsicc.: 11/16/06 Pedestal Rock 1513; 12/20/06 Hands Trail 1529.

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Cheilanthes feei Moore Exsicc.: 08/10/06 Paradise Falls 1332.
Cheilanthes fendleri Hook. Exsicc.: 11/06/06 Big Emigrant Canyon 1505.
Cheilanthes lindeheimeri Hook. Exsicc.: 11/05/06 Fort Bowie 1504; 11/23/06 Morse Canyon 1519.
Chenopodium cornutum (Torr.) B. and H. - C. graveolens Wildl. Exsicc.: 09/15/06 Barfoot Park 1381.
Chenopodium fremontii S. Wats. - C. neomexicanum Standl. Exsicc.: 09/21/06 Barfoot Park 1409.
Chenopodium muralche L. Exsicc.: 07/29/07 Barfoot Park 1567.
Chrysothamnus nauseosus albicaulis (Nutt.) Rydb. - C. nauseosus (Pallas ex Pursh) ssp. albicaulis (Nutt.) Hall and
Clements Exsicc.: 11/22/06 Joe Smith's Ranch (Cottonwood Creek.) 1518.
Cladonia pyxidata (L.) Hoffmann - ? Exsicc.: 10/02/06 Monument Peak Exsicc.: 1456.
Clematis igusticifolia Nutt. Exsicc.: 11/10/06 Knowles' Camp 1510.
Coleosanthus betonicæfolius (Gray) Kuntze - Brickellia betonicæfolius Gray Exsicc.: 10/17/07 Chiricahua Mine 1795.
Coleosanthus floribundus (Gray) Kuntze - Brickellia floribunda Gray Exsicc.: 10/05/07 Paradise 1766.
Coleosanthus pringlei Gray - Brickellia pringlei Gray 10/02/07 Maxon's Peak 1750.
Cologania lemmontii Gray Exsicc.: 08/25/07 Road above Chaperon Canyon 1627.
Cologania longifolia Gray - C. angustifolia Kunth Exsicc.: 09/20/07 Paradise 1679; 09/01/06 Barfoot Park 1349.
Commelina diandthifolia Delile Exsicc.: 09/05/06 Barfoot Park 1534.
Conioselïnum scopulorum (Gray) Coul. and Rose Exsicc.: 09/21/06 Barfoot Park 1406.
Conobea intermedia Gray - C. intermedia (Gray) Pennell Exsicc.: 09/28/07 Paradise 1735.
Convolvulus inanus auct. non Vahl. - C. arvensis L. Exsicc.: 09/18/07 Paradise 1684.
Conyza couteri Gray Exsicc.: 09/29/06 Barfoot Park 1435.
Cosmos parviflorus (Jacq.) Kunth Exsicc.: 09/24/06 Barfoot Park 1419; 08/23/07 Goldenrod Park 1624.
Cowania mexicana D. Don Purshia mexicana (D. Don) Hendrickson Exsicc.: 12/07/06 Rucker Canyon 1820.
Crassina grandiflora (Nutt.) Kuntze - Zinnia grandiflora Nutt. Exsicc.: 09/27/07 Paradise 1733; 10/22/06 Miss
Rhoda Riggs' Ranch (Pinery Canyon) 1485.
Crotalaria sp. - ? Exsicc.: 10/05/07 Paradise 1767.
Crotalaria collina Heller - C. saginalis L. Exsicc.: 10/07/07 Shelter Cove, Wilgus Ranch 1772.
Croton corymbulosus Engel. - C. pottsii (Klotzsch) Muell.-Arg. Exsicc.: 09/18/07 Paradise 1685.
Crosia subulata (Pavon) Gray Exsicc.: 08/30/07 Sanders' Pasture (W. Turkey Creek) 1631.
Cucurbita foetidissima Kuntz Exsicc.: 07/19/07 Stephens' Ranch (Pinery Canyon) 1813.
Cyperus sp. - ? Exsicc.: 09/03/07 Shelter Cove, N. Wilgus Ranch 1644; 09/02/07 Shelter Cove, N. Wilgus Ranch 1636
Cyperus diandrus capitatus Britt. - C. niger Ruiz and Pavôn Exsicc.: 10/31/06 Miss Rhoda Riggs' Ranch (Pinery
Canyon) 1502.
Cyperus fendleri Boeckl. Exsicc.: 08/31/06 Barfoot Park 1343.
Cyperus rushyi Britt. - C. sphaerolepis Boeckl. Exsicc.: 08/30/07 Between W. Turkey Creek and Cottonwood Creek 1632.
*Delphinium scopulorum stachydeum Gray - D. stachydeum (Gray) Tidestrom Exsicc.: 09/14/06 Barfoot Park 1373.
Dicranum longifolium - ? Exsicc.: 09/14/06 Monument Peak 1457.
Draba chrysantha S. Wats. - D. standleyi J.F. Macbr. and Payson Exsicc.: 06/25/07 Barfoot Peak 1538
Draba spectabilis Greene - D. helleriana Greene var. bifurcata C.L. Hitchc. 07/30/07 Monument Peak 1608.
Draba streptocarpa Gray Exsicc.: 10/06/06 Ruster Peak Spring 1465.
Drymaria sparguloides Gray - D. molluginea (Lag.) Didr. Exsicc.: 09/29/06 Barfoot Park 1433.
Drymaria tenella Gray - D. leptophylla (Cham. and Schlecht.) Fenzl ex Rohrb. Exsicc.: 09/02/07 Shelter Cove, N.
Wilgus Ranch 1639; 09/22/06 Barfoot Park 1411.
Dugaldia hoopesii (Gray) Rydb. Exsicc.: 07/27/07 Barfoot Park 1565; 10/12/06 Barfoot Park 1447.
Echinocloa colonata var. (L.) Link Exsicc.: 10/04/07 Paradise 1764.

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*Echinochloa crusgalli* (L.) Beauv. - *E. crus-galli* (L.) Beauv. var. *crus-galli* Exsicc.: 10/12/07 Wilgus Ranch (W. Turkey Creek) 1782.

*Elyonurus barbicalvus* Hack. Exsicc.: 10/08/07 Shelter Cove, Wilgus Ranch 1787

*Epipactis rigens* Benth. - *Muhlenbergia rigens* (Benth.) A.S. Hitchc. Exsicc.: 10/22/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1491.

*Epipactis ligulata* Scribn. - ? Exsicc.: 09/26/06 Barfoot Park 1424.


*Equisetum sp.* - ? Exsicc.: 10/27/06 Stephens' Ranch (Pinery Canyon) 1496.

*Eragrostis sp.* - ? Exsicc.: 09/21/07 Cedar Gulch, Paradise 1714; 08/18/07 Barfoot Park 1589.


*Erigeron macranthus* Nutt. - *E. speciosus* (Lindl.) Cronq. Exsicc.: 10/01/06 Barfoot Park 1439.

*Erigeron neo-mexicanus* Gray - *E. neomexicanus* Gray Exsicc.: 10/04/07 Paradise 1759; 09/17/07 Paradise 1703 NMU; 09/05/06 Barfoot Park 1352 NMU.

*Eriogonum jamesii* Benth. Exsicc.: 10/02/06 Summit Monument Peak 1460.

*Eriogonum pinetorum* Greene - *Eriogonum aberitanum* Torr. Exsicc.: 08/18/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1334.


*Erodium cicutarium* (L.) L'Her Exsicc.: 07/05/07 Pine Canyon 1613.

*Eryngium lemmoni* Coul. and Rose Exsicc.: 10/05/06 Pine Canyon 1463.

*Erysimum asperatum* (Green) Rydb. - *E. capitatum* (Dougl. ex Hook.) Greene var. *argillosum* (Greene) R.J. Davis Exsicc.: 07/02/07 Barefoot Park 1599.

*Eupatorium ageratiforme* DC. - ? Exsicc.: 10/04/07 Gooseneck, Paradise 1763.


*Euphorbia bilobata* Engelm. Exsicc.: 10/01/07 Paradise 1747; 09/07/07 Paradise 1657.

*Euphorbia crenulata* Engelm. Exsicc.: 09/29/06 Barfoot Park 1437.

*Euphorbia dentata* Michx. Exsicc.: 09/19/07 Paradise 1678; 08/19/07 Barfoot Park 1591.

*Euphorbia extispulata* Engelm. Exsicc.: 09/07/07 Paradise 1658.


*Evernia purpurea* (L.) Mann. - *Krascheninnikovia lanata* (Pursh.) Guldenstaedt Exsicc.: 09/26/06 Barfoot Park 1429 ARIZ; 09/24/07 Paradise 1727 ARIZ.

*Fendlerella utahensis* (S. Wats.) Heller Exsicc.: 09/24/07 Paradise 1725.


*Galaxis wrightii* Gray Exsicc.: 10/17/07 Paradise 1799.

*Galinsoga parviflora* Cav. Exsicc.: 09/18/07 Paradise 1664; Grand View 1653; 09/21/07 Cedar Gulch, Paradise 1713.

*Galium asperatum* Gray - *G. mexicanum* Kunth ssp. *asperatum* (Gray) Dempster Exsicc.: 09/13/06 Barfoot Park 1369.

*Galium wrightii* Gray Exsicc.: 09/24/06 Barfoot Park 1417.

*Galinsoga hartwegii* (Benth) Britt. - *Calylophus hartwegii* (Benth.) Raven ssp. *hartwegii* (Gray) Towner and Raven Exsicc.: 07/05/07 Pine Canyon 1610.


*Gaura suffulta* Engelm. Exsicc.: 07/05/07 Pine Canyon 1601.
Gentiana wislizenii Engelm. – Gentianella wislizenii (Engelm.) J. Gillett Exsscc.: 09/22/06 Barfoot Park 1414.
Geranium sp. – Geranium richardsonii Fisch. and Trautv. – Exsscc.: 09/13/06 Barfoot Park 1370.
Gerardia wrightii Gray – Brachystigma wrightii (Gray) Pennell Exsscc.: 08/21/06 Gooseneck, Paradise 1621.
Gläa pringlei auct. non Gray – Ipomopsis macombei (Torr. ex Gray) V. Grant Exsscc.: 10/03/06 Barfoot Park 1443.
Gnaphalium decurrens Ives non L. – G. viscosum Kunth Exsscc.: 09/14/06 Barfoot Park 1377.
Gomphocarpus hypoleucus Gray – Asclepias hypoleuca (Gray) Woods. Exsscc.: 07/05/07 Barfoot Park 1558.
Gompheira nitida Rothrock Exsscc.: 09/21/07 Paradise 1716.
Grimmia pulvinata (L.) Sm. – ? Exsscc.: 11/05/06 Fort Bowie 1503.
Guilleminia densa (Humb. and Bonpl. ex Willd.) Moq. Exsscc.: 09/26/07 Paradise 1693.
Gutierrezia californica Torr. and Gray – G. serotina Greene Exsscc.: 10/20/07 head of Silver Creek 1802.
Gymnoloma annua (M.E. Jones) Robins. and Greeen. – ? Heliantheris longifolia var. annua (M.E. Jones) Yates Exsscc.: 10/02/07 Bernoudy's Mine, Maxons's Peak 1755.
Gymnosperma corymbosa DC. – G. glutinosum (Spreng.) Less. Exsscc.: 09/30/07 Cedar Gulch, Paradise 1743 (?); 10/30/06 Stephens' Ranch (Pinery Canyon) 1497.
Hedeoma dentata Torr. Exsscc.: 09/16/07 Paradise 1700.
Hedeoma drummondii Benth. Exsscc.: 09/16/07 Paradise 1701.
Hedeoma hyssopifolia Gray Exsscc.: 09/22/06 Barfoot Park 1413.
Helianthemella quinquenervis arizonica Gray – H. quinquenervis (Hook.) Gray Exsscc.: 10/03/06 Barfoot Park 1442.
Helianthus petiolaris Nutt. Exsscc.: 10/22/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1488.
Helophis parviflora Gray Exsscc.: 09/29/06 Barfoot Park 1436.
Heteropogon contortus (L.) Beauv. ex Roemer and J.A. Schultes Exsscc.: 10/02/07 Maxon's Peak 1753.
Heterosperma pinnatum Cav. Exsscc.: 09/18/07 Paradise 1666.
Heuchera rubescens Torr. Exsscc.: 10/02/06 Monument Peak 1458.
Heuchera sanguinea Engelm. Exsscc.: 09/24/07 Paradise 1723.
*Hieracium fendleri* Schultz-Bip. var. discolor Gray Exsscc.: 08/24/07 Barfoot Park 1597.
Hieracium lemmonei Gray Exsscc.: 09/29/06 Barfoot Park 1434.
Hordeum murinum L. Exsscc.: 08/17/07 Barfoot Park 1587.
Houstonia wrightii Gray Exsscc.: 07/18/07 Riggins Canyon 1603.
Hydastylus longipes Bickn. – Sisyrrhichium longipes (Bickn.) Kearney and Peebles Exsscc.: 09/20/06 Barfoot Park 1402.
*Hymenopappus mexicanus* Gray Exsscc.: 11/05/06 Fort Bowie 1506 ARIZ; 10/06/07 Rock Creek Canyon 2215 ARIZ.
Hymenothrix wrightii Gray Exsscc.: 09/30/07 Cedar Gulch, Paradise 1742.
Hypericum formosum Kunth H. scouleri Hook. Exsscc.: 09/26/06 Barfoot Park 1426.
Hypopygium suffruticosum Heller? – Monotropa sp.? Exsscc.: 08/13/07 Rustler Peak Spring 1617.
Ionoxalis metcalfei Small – Oxalis alpina (Rose) Rose ex R. Kunth Exsscc.: 08/14/07 Barfoot Park 1584.
Ipomoea arcuata Roemer and Schultes – I. capillacea (Kunth) G. Don Exsscc.: 09/03/07 Shelter Cove, N. Wilgus Ranch 1643.
Ipomoea costellata Torr. Exsscc.: 09/18/07 Paradise 1663.
Iris missouriensis Nutt. Exsscc.: 09/20/06 Barfoot Park 1403; 07/04/07 Barefoot Park 1556.
Iva ambrosiifolia Gray – I. ambrosiifolia (Gray) Gray Exsscc.: 09/16/07 Paradise 1702.
Juncus tenuis Wild. Exsscc.: 09/19/06 Barfoot Park 1397.
Juncus xiphioideus E. Mey. Exsscc.: 09/19/06 Barfoot Park 1398.
Koeleria cristata (L.) Pers. – K. macrantha (Ledeb.) J.A. Schultes Exsscc.: 08/31/06 Barfoot Park 1342.
Lactuca serriola L. Exsscc.: 08/18/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1335.
Lathyrus graminifolius (S. Wats.) White Exsscc.: 09/25/06 Barfoot Park 1421.
Leptilon canadense (L.) Britt. Conyza canadensis (L.) Cronq. var. canadensis Exsscc.: 10/04/06 Pine Canyon 1461.
**Desmodium arizonicum**

**Lythrum calijomicum**

**Lycurus phleoides**

**Lobelia splendens**

**Lithospernum linearijolium**

**Lithospermum cobrense**

**Linum neomexicanum**

**Linum**

**Limnorchis**

**Mimulus cardinalis**

**Milla**

**Microspora sp.**

**Mentzelia aspera**

**Melilotus albus**

**Meibomia neo-mexicana**

**Meibomia grahamii**

**Meibomia exigua**

**Meibomia bigelovii**

**Medicago sativa**

**Marilaunidium angustijolium**

**Margaranthus solanaceus**

**Machaeranthera tanacetijolia**

**Muhlenbergia monticola**

**Muhlenbergia affinis**

**Mannina wrightii**

**Monardll**

**Mimulus guttatus**

**Mentzelia**

**Melampodium longicome**

***Machaeranthera bigelovii***

***Lupinus blumeri***

**Lotus comiculatus**

**Muhlenbergia vaseyana**

**Muhlenbergia schaffneri**

**Muhlenbergia tenuifolia**

**Nazia aliina auct. non** (Spreng.)

**Tragus berteronianus**

**Nicotiana attenuata**

**Nicotiana trigonophylla**

**Limnorchis sparsiflora** (S. Wats.) Rydb. **Platanthera sparsiflora** (S. Wats.) Rydb. Exsicc.: 09/06/07 Cold Spring 1651.

**Linum lewisii** Pursh. Exsicc.: 07/19/07 Stephens’ Ranch (Pinery Canyon) 1812; 09/13/07 Paradise 1673.

**Linum neomexicanum** Greene Exsicc.: 09/08/06 Barfoot Park 1360

**Lithospermum sp.** ex ? Exsicc.: 10/17/07 Chiricahua Mine 1796.

**Lithospermum cobrense** Greene Exsicc.: 06/25/07 Barfoot Park 1542

**Lithospermum linearifolium** Goldie – *L. incisum* Lehm. Exsicc.: 09/30/07 Paradise 1740; 06/25/07 Barfoot Peak 1540.


*Lupinus blomeri* Greene *L. neomexicanus* Greene Exsicc.: 09/06/06 Barfoot Park 1357 NMC.

**Lycinus phleoides** Kunth Exsicc.: 09/14/07 Paradise 1682.

**Lythrum salicaria** Torr. and Gray Exsicc.: 10/09/07 Joe Smith’s Ranch 1799.

*Machaeranthera bigelovii* (Gray) Greene Exsicc.: 10/01/07 Paradise 1748.

*Machaeranthera tanacetijolia* (Kunth) Nees Exsicc.: 10/03/06 Barfoot Park 1444; 10/17/06 Pine Canyon 1482.

**Malva parviflora** L. Exsicc.: 07/29/07 Barfoot Park 1569.

**Margaranthus solanaceus** Schlecht. Exsicc.: 09/07/07 Paradise 1655

**Marilaunidium angustijolium** (Gray) Kunzle ex ? 09/24/07 Paradise 1722.

**Marrubium vulgare** L. Exsicc.: 09/15/06 Barfoot Park 1383.

**Maurandya antirrhiniflora** (Por.) Willd. – *M. antirrhiniflora* (Humb. and Bonpl. ex Willd.) Rothm. Exsicc.: 10/21/07 Chiricahua Mine 1805.

**Medicago sativa** L. Exsicc.: 07/26/07 Barfoot Park 1563.

**Meibomia arizonica** (S. Wats.) Vail – *Desmodium arizonicum* S. Wats. Exsicc.: 08/31/06 Barfoot Park 1346.

**Meibomia bigelovii** (Gray) Kunzle – *Desmodium neomexicanum* Gray Exsicc.: 09/02/07 Shelter Cove, N. Wilgus Ranch 1641; 09/17/07 Paradise 1675.


**Meibomia grahamii** (Gray) Kunzle – *Desmodium grahamii* Gray Exsicc.: 09/26/07 Barfoot Park 1425.

**Meibomia neo-mexicana** (Gray) Kunzle – *Desmodium neomexicanum* Gray Exsicc.: 09/17/07 Paradise 1674.

**Melampodium longicorne** Gray Exsicc.: 09/18/07 Paradise 1665.

**Melica parviflora** (Porter) Scribn. – *M. porteri* Scribn. Exsicc.: 10/24/06 Chaparon Canyon 1494.

**Melilotus albus** Desv. – *M. officinalis* (L.) Lam. Exsicc.: 10/22/06 Miss Rhoda Riggs’ Ranch (Pinery Canyon) 1493.

**Mentzelia aspera** L. Exsicc.: 09/19/07 Paradise 1669.

**Mentzelia multiflora** (Nutt.) Gray Exsicc.: 11/10/06 Ridge W. of Chiricahua Mine 1509.

**Mentzelia wrightii** Gray ex ? Exsicc.: 07/30/07 Gooseneck, Paradise 1609.

**Microsorpa sp.** ex ? Exsicc.: 08/07/07 Barfoot Park 1577.

**Milla biflora** Cav. Exsicc.: 08/26/07 Shaw’s Ranch 1628.

**Mimulus cardinalis** Doug. ex Benth. Exsicc.: 07/01/07 Chaperon Canyon 1551.

**Mimus guttatus** DC. Exsicc.: 09/19/06 Barfoot Park 1399.

**Monarda cirriodora** Cerv. ex Lag. – *M. cirriodora* Cerv. ex Lag. ssp. *austromontana* (Epling) Scora Exsicc.: 08/10/07 Barfoot Park 1582; 08/10/07 Barfoot Park 1581; 09/15/06 Barfoot Park 1382.

**Monarda scabra** Beck. – *M. fistulosa* var. *mollis* (L.) Benth. Exsicc.: 06/26/07 Pine Canyon 1544.

**Monnina wrightii** Gray Exsicc.: 10/03/13 Paradise 1659.

**Muhlenbergia affinis** Thin. – *M. rigidia* (Kunth) Thin. Exsicc.: 10/08/07 Shelter Cove, Wilgus Ranch 1785.

**Muhlenbergia gracilis** Thin. – *M. montana* (Nutt.) A.S. Hitchc. Exsicc.: 10/06/06 Rustler Peak Spring 1468.

**Muhlenbergia mexicana** (L.) Thin. Exsicc.: 10/12/07 Wilgus Ranch (W. Turkey Cr.) 1784.

**Muhlenbergia monticola** Buckl. – *M. tenuifolia* (Kunth) Thin. Exsicc.: 09/12/07 Paradise 1687.

**Muhlenbergia schaffneri** Fourn. – *M. depauperata* Scribn. Exsicc.: 09/24/07 Paradise 1721.

**Muhlenbergia vاسيyana** Scribn. – *Muhlenbergia emersleyi* Vase Exsicc.: 09/16/07 Paradise 1698.

**Nazia aliena** auct. non (Spreng.) Scribn. – *Tragus berteronianus* J.A. Schultes Exsicc.: 09/20/07 Paradise 1707.

**Nicotiana attenuata** Torr. ex S. Wats. Exsicc.: 07/19/07 Paradise 1605.

**Nicotiana trigonophylla** Dunal Exsicc.: 09/30/07 Paradise 1745.

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*Notholaena sinuata* (Lag. ex Sw.) Kaulfuss – *Astrolepis sinuata* (Lag. ex J.G Sw.) Benham and Windham ssp. *sinuata* Exsicc.: 12/20/06 Hands Trail 1530; 12/20/06; Hands Trail 1527; 12/12/06 Between Walnut and Silver creeks 1522.


*Oenothera mexicana* Spach. Exsicc.: 07/05/07 Barfoot Park 1559.

*Onosmodium thurberi* Gray – *Macrocerma viridiflora* DC. Exsicc.: 07/03/07 Chaperon Canyon 1817.

*Oxalis wrightii* Gray – *O. albicans* Kunth ssp. *albicans* Exsicc.: 06/28/07 Reed Ranch (SWRS) 1547.

*Panicum bulbosum* Kunth Exsicc.: 08/31/06 Barfoot Park 1341.

*Panicum hallii* Vase Exsicc.: 09/14/07 Paradise 1683.

*Panicum obtusum* Kunth Exsicc.: 09/27/07 Paradise 1734.

*Pappophorum wrightii* S. Wats. – *Enneapogon desvauxii* Beauv. Exsicc.: 09/28/07 Paradise 1737.

*Parnelia conspersa* – ? Exsicc.: 10/08/06 Barfoot Peak 1469.

*Parosela albiflora* (Gray) Vail – *Dalea albiflora* Gray 10/15/06 Road, Paradise to sawmill 1476.

*Parosela dalea* (L.) Britt. – ? Exsicc.: 09/18/06 Barfoot Park 1394; 10/08/07 Wilgus Ranch 1775.

*Parosela filiformis* (Gray) Heller – *Dalea filiformis* Gray Exsicc.: 09/02/07 Shelter Cove, N. Wilgus Ranch 1638.

*Parosela pagonathera* Gray – *Dalea pagonathera* Gray Exsicc.: 10/02/07 Bernoudy’s Mine, Maxon’s Peak 1757.

*Parosela polygonoides* (Gray) Vail – *Dalea polygonoides* Gray Exsicc.: 09/10/07 Grand View 1652.


*Parosela wilizeni* (Gray) Vail – *Dalea versicolor* Zucc. Exsicc.: 10/15/06 Road, Paradise to sawmill 1477.

*Parthenium incanum* Kunth Exsicc.: 09/12/07 Mt. Desert 1819.

*Pectis filipes* Harvey and Gray Exsicc.: 09/21/07 Cedar Gulch, Paradise 1708.

*Pedicularis grayi* A. Nels. *P. procer* Gray Exsicc.: 07/05/07 Barfoot Park 1561.

*Pellaea intermedia* Mett. ex Kuhn Exsicc.: 12/20/06 Hands Trail 1528.

*Peltigera canina* (L.) Hoffmann – ? Exsicc.: 10/02/06 Monument Peak 1455.

*Penstemon pinifolius* Greene Exsicc.: 06/25/07 Barfoot Peak 1541.

*Penstemon spectabilis* Thurber Exsicc.: 11/15/06 Head of Wood Canyon 1536.

*Penstemon stenophyllus* Gray Exsicc.: 07/19/07 Paradise 1604.

*Penstemon torreyi* Benth. – *P. barbatus* (Cav.) Roth ssp. *torreyi* (Benth.) Keck Exsicc.: 08/02/07 Barfoot Park 1575; Barfoot Park 09/14/06 1376.

*Perezia thurberi* Gray – *Acourtia thurberi* (Gray) Reveal and King Exsicc.: 10/07/07 Shelter Cove, Wilgus Ranch 1711.

*Pericome caudata* Gray Exsicc.: 10/08/06 Barfoot Peak 1470.

*Percisaria sp. – Polygonum lapathifolium* L. Exsicc.: 10/10/07 Wilgus Ranch 1778.

*Phacelia heterophylla* Pursh. Exsicc.: 10/13/06 Pine Canyon 1474; 10/08/06 Barfoot Peak 1471

*Phaseolus acutifolius* – *P. acutifolius* var. *tenuifolius* Gray Exsicc.: 09/17/07 Paradise 1676

*Phaseolus parvulus* Greene Exsicc.: 09/04/06 Barfoot Park 1351.

*Phaseolus sp. – ? Exsicc.: 09/06/06 Barfoot Park 1356.

*Phaseolus wrightii* Gray – *P. filiformis* Benth. Exsicc.: 09/01/06 Barfoot Park 1347.

*Philibertia hartwegii* heterophylla (Engel.) Vail? – *Sarcostemma cyanoides* ssp. *hartwegii* (Vail) R. Holm Exsicc.: 10/31/06 Miss Rhoda Riggs’ Ranch 1499.

*Phoradendron bolleanum* Eichler – *P. bolleanum* (Seem.) Eichler ssp. *pauciflorum* (Torr.) Wiens Exsicc.: 12/18/06 Paradise 1524.

*Phoradendron flavescens* Nutt. ex Engel. – *P. leucarpum* (Raf.) Reveal and M.C. Johnston Exsicc.: 12/22/06 Miss Rhoda Riggs’ Ranch (Pinery Canyon) 1523; 11/26/06 Miss Rhoda Riggs’ Ranch (Pinery Canyon) 1520; 11/22/06 Joe Smith’s Ranch 1517; 12/25/06 Wilgus Ranch 1535; 12/25/06 Wilgus Ranch 1534; 12/23/06 Amalong Ranch 1533.

*Phoradendron flavescens* Nutt. ex Engel. var. *orbiculatum* (Engel.) Engelm. – *P. leucarpum* (Raf.) Reveal Exsicc.: 11/16/06 Pedestal Rock 1514.
Phoradendron flavescens Nutt. ex Engelm. var. villosum (Nutt.) Engelm. – *P. villosum* (Nutt.) Nutt. ssp. villosum
Exsicc.: 12/14/06 foothills between Tex Canyon and Price Canyon 1521; 11/01/06 Erickson's Ranch (W. Turkey Creek) 1516; 12/22/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1531.

*Phoradendron juniperinum* Engelm. Exsicc: 12/18/06 Paradise 1525; 12/22/06 Miss Rhoda Riggs' Ranch (Pinery Canyon) 1532.

*Pinaropappus foliosus* Heller – *P. roseus* (Less.) Less. var. *foliosus* (Heller) Shiners Exsicc.: 10/13/06 Barfoot Park 1448; 07/30/07 Barfoot Park 1571.

*Pinaropappus* sp. nov. – *Pinaropappus roseus* (Less.) Less. var. *foliosus* (Heller) Shiners

Plantsago major L. Exsicc.: 10/12/07 Wilgus Ranch (W. Turkey Cr.) 1781.

Polhia elongata Hedw. – ? Exsicc.: 09/24/06 Barfoot Park 1418.

*Polanisia uniglandulosa* DC. – *Polanisia uniglandulosa* (Cav.) DC. Exsicc.: 09/12/07 Paradise 1688; 10/02/07 Bernoudy's Mine, Maxon's Peak 1756.

Polemonium filifolium Greene – *Polemonium foliosissimum* Gray var. *flavum* (Greene) Anway 10/13/06 Pine Canyon 1472; 07/12/07 Head of Chaparone Canyon 1614.

*Polemonium pauciflorum* S. Wats. – *P. pauciflorum* S. Wats. ssp. hinckleyi (Standl.) Wherry Exsicc.: 08/25/07 Chaparone Canyon 1626.

Polygonus aviculare L. Exsicc.: 09/22/06 Barfoot Park 1415.

*Polygonum* convolvulus L. Exsicc.: 08/14/07 Barfoot Park 1583.

*Polygonum douglasii* Greene Exsicc.: 08/21/07 Grandview, above Rustler Park 1622.

*Polygonum lapathifolium* L. Exsicc.: 10/22/06 Miss Rhoda Riggs' Ranch 1489.


*Polygonum* utorale Link – *P. buxiforme* Small Exsicc.: 07/26/07 Barfoot Park 1562.

*Polygynon monspeliensis* (L.) Desf. Exsicc.: 08/10/07 Barfoot Park 1580.

Potentilla thurberi Gray Exsicc.: 09/13/06 Barfoot Park 1371.

Primula rusbyi Greene Exsicc.: 06/25/07 Barfoot Peak 1539.

Pseudocymopteris montanus (Gray) Coult. and Rose var. *purpureus* Coult. and Rose –

Pseudocymopteris montanus (Gray) Coult. and Rose Exsicc.: 09/12/06 Barfoot Park 1365.

Pseudocymopteris montanus (Gray) Coult. and Rose var. *tenuefolius* (S. Wats.) Coult. and Rose – *Pseudocymopteris montanus* (Gray) Coult. and Rose Exsicc.: 09/12/06 Barfoot Park 1366.

Psilostrophe tagetina DC. – *P. tagetina* (Nutt.) Greene Exsicc.: 09/21/07 Cedar Gulch, Paradise 1709.

*Pteridium aquilinum* (L.) Kuhn. var. *pubescens* Underw. Exsicc.: 10/19/06 Barfoot Park 1450.

Pyrola rotundifolia (?) – *P. chlorantha* J.O. Sw. Exsicc.: 08/13/07 Rustler Peak Spring 1618.

Quamoclit cocinea (L.) Moench. – Ipomoea hederijolia L. Exsicc.: 10/24/07 Walker's Garden, Paradise 1808.

Ranunculus hydrocharoides Gray Exsicc.: 07/02/07 Barefoot Park 1555.

Razoumojskya robusta (Engelm.) Kuntze. – *Arceuthobium gillii* Hawksworth and Weins Exsicc.: 10/30/06 Barfoot Park 1452 ARIZ; 07/05/07 Pine Canyon 1557 ARIZ.

Razoumojskya vaginata (Eichler) Kuntze – *Arceuthobium vaginatum* (Willd.) K. Presl. Exsicc.: 11/16/06 Pedestal Pass 1515

Rhynchosetegium rusciforme (Neck.) Sch. and Br. – ? Exsicc.: 08/10/06 Paradise Falls 1331.

Rorippa nasturtium-aquaticum (L.) Rusby – *R. nasturtium-aquaticum* (L.) Hayek Exsicc.: 10/22/06 Miss Rhoda Riggs' Ranch 1492.

*Rumex obtusifolius* L. Exsicc.: 08/02/07 Barfoot Park 1576.

*Rumex occidentalis* S. Wats. – *R. aquaticus* L. var. *fenesistratus* (Greene) Dorn Exsicc.: 10/19/06 Barfoot Park 1449.

Salvia blumetti Greene – ? Exsicc.: 09/24/07 Paradise 1726.

Salvia columbariae Benth. Exsicc.: 07/05/07 Barfoot Park 1560.

Salvia lemmonii Gray Exsicc.: 10/04/07 Gooseneck, Paradise 1762.

Salvia subincisa Benth. Exsicc.: 09/30/07 Paradise 1741.

Samolus decumbens Greene sp. n. – *S. vagans* Greene Exsicc.: 06/28/07 Reed Ranch (SWRS) 1546

Saracha sessilis Greene – *Jatomata procumbens* (Cav.) J.L. Gentry Exsicc.: 09/02/07 Shelter Cove, N. Wilgus Ranch 1637; 09/23/07 Paradise 1718.

Schkuhria sp. Exsicc.: 08/31/07 Between Rock Creek and W. Turkey Creek 1634.
Sclakoria hopkirkia Gray ~ S. wisilienii Gray Exsicc.: 08/31/07 Between Rock Creek and W. Turkey Creek 1635.
Scirpus atrovirens Willd. var. paliidus Britt. ~ S. pallidus (Britt.) Fern. Exsicc.: 07/01/07 Chaperon Canyon 1552.
Sedum griffithii Rose ~ S. cockerelli Britt. Exsicc.: 10/06/06 Rustler Peak Spring 1466.
Senecio blumeri Greene sp. n. ~ S. neomexicanus Gray Exsicc.: 07/01/07 Barfoot Park 1553.
Senecio douglasii DC. Exsicc.: 11/09/06 Paradise 1511.
Senecio eremophilus Richards. Exsicc.: 10/24/06 Chaperon Canyon 1484
Senecio eremophilus Richards. ~ S. eremophilus Richards. var. macdougalii (Heller) Cronq. 09/18/06 Barfoot Park 1390.
Senecio rushi Greene ~ ? Exsicc.: 09/18/06 Barfoot Park 1391.
Senecio wootonii Greene Exsicc.: 09/17/06 Barfoot Park 1388.
Sicyos angulatus L. Exsicc.: 09/23/07 Paradise 1719.
Sida lepidota Gray ~ Malvella lepidota (Gray) Fryxell Exsicc.: 09/10/07 Paradise 1689
Silene laciniata ssp. greggii (Gray) S. Wats. ~ Silene laciniata Cav. ssp. greggii (Gray) C.L. Hitchc. and Maguire
Exsicc.: 09/11/06 Barfoot Park 1362.
Sitanion brevifolium J. G. Smith ~ ? Exsicc.: 10/31/06 Miss Rhoda Riggs' Ranch (Pinery Canyon 1501.
Solanum douglasii Dunal Exsicc.: 10/17/07 Paradise 1797; 10/05/07 Paradise 1768; 11/14/06 Cardwell's Cabin, Wood Canyon 1512.
Solanum elaegnifolium Cav. Exsicc.: 09/27/07 Paradise 1732.
Solanum triflorum Nutt. Exsicc.: 09/27/07 Paradise 1656.
*Solanum tuberosum L. Exsicc.: 08/10/07 Barfoot Park 1579; 07/29/07 Barfoot Park 1566; 09/27/06 Barfoot Park 1432.
Solidago bigelovii Gray var. wrightii (Gray) Gray ~ S. wrightii Gray var. wrightii Exsicc.: 09/24/06 Barfoot Park 1416.
Solidago californica Nutt. Exsicc.: 10/15/06 Road, Rustler Park 1479
Sonchus asper (L.) Hill Exsicc.: 08/10/07 Barfoot Park 1578; 07/30/07 Barfoot Park 1570.
Sphaeralcea pedata Torr. ~ S. wrightii Gray Exsicc.: 10/21/07 Between Chiricahua Mine and Reed Ranch 1806.
Spiropyra sp. ~ ? Exsicc.: 10/03/06 Barfoot Park 1445.
Sporobolus confusus auct. non (Fourn.) Vase ~ Muhlenbergia minutissima (Steud.) Swallen Exsicc.: 09/18/06 Barfoot Park 1392; 09/18/06; Barfoot Park 1393.
Stenophyllum ciliatfolius (Ell.) C. Mohr ~ Bulbostylis ciliatifolia (Ell.) Fern. var. ciliatifolia Exsicc.: 09/03/07 Shelter Cove, N. Wilgus Ranch 1649.
Stenophyllum diphyllus Pers. ~ ? Exsicc.: 09/03/07 Shelter Cove, N. Wilgus Ranch 1646.
Stevia plummerae Gray Exsicc.: 08/31/06 Barfoot Park 1344.
Stevia serrata Cav. Exsicc.: 10/15/06 Road, Rustler Park 1478.
Stipa pringlei (Beal) Scribn. ~ Piptochaetium pringlei (Beal) Parodi Exsicc.: 09/20/06 Barfoot Park 1405.
Tagetes micrantha Cav. Exsicc.: 09/02/07 Shelter Cove, N. Wilgus Ranch 1640.
Tetragonanthus rothrockii (Gray) Heller ~ Helenium recurva (J.E. Smith) Allen Exsicc.: 09/08/06 Barfoot Park 1359.
Thalesia fasciculata (Nutt.) Britt. ~ Orobanche fasciculata Nutt. Exsicc.: 07/07/07 Barfoot Park 1564.
Thalictrum fendleri Engel ex Gray var. wrightii (Gray) Trel. Exsicc.: 08/24/06 Barfoot Park 1393.
Thelesperma longipes Gray Exsicc.: 09/18/07 Paradise 1686.
Thehypodium linearifolium (Gray) S. Wats. ~ ? Exsicc.: 09/12/06 Barfoot Park 1363; 07/19/07 Stephens' Ranch (Pinery Canyon) 1811.
Thehypodium longifolium (Benth.) S. Wats. ~ Pennellia micrantha (Gray) Nieuwl. Exsicc.: 09/12/06 Barfoot Park 1364.
Trachypogon secundus (J. Presl.) Scribn. Exsicc.: 10/07/07 Shelter Cove, Wilgus Ranch 1770.
Trogia ramosa Torr. Exsicc.: 09/30/07 Paradise 1746.
Trichostema arizonicum Gray Exsicc.: 08/20/06 Whittetail/Jhus Saddle 1336.
Trifolium pinetorum Greene Exsicc.: 09/19/06 Barfoot Park 1396.
Triodia mutica (Torr.) Scribn. – Tridens muticus (Torr.) Nash var. muticus Exsicc.: 09/14/07 Paradise 1680.
Triodia pilosa Buckl. – Erioneuron pilosum (Buckl.) Nash Exsicc.: 09/14/07 Paradise 1681
Triodia pulchella Kunth – Erioneuron pulchellum (Kunth) Tateoka Exsicc.: 09/25/07 Paradise 1729.
Trixis angustifolia latiuscula Gray – ? Exsicc.: 11/05/06 Fort Bowie 1507.
Unidentified collection. – Abies concolor (Gord. and Glend.) Hoopes Exsicc.: 10/20/06 Barfoot Park 1288.
Unidentified collection. – Anisacanthus thurberi (Torr.) Gray Exsicc.: 10/27/06 Miss Rhoda Riggs’ Ranch (Pinery Canyon) 1304 ARIZ.
Unidentified collection. Anthemis cotula L. Exsicc.: 10/18/06 Barfoot Park 1870 ARIZ.
Unidentified collection. Cupressus arizonica Greene Exsicc.: 11/02/06 Bonita Canyon 1231
Unidentified collection. Echeandia flavescens (J.A. and J.H. Schultes) Cruden Exsicc.: 08/31/07 West Turkey Creek 2120
Unidentified collection. Pinus discolor D.K Bailey Exsicc.: 11/26/06 Jhus Canyon 1822 ARIZ; 12/18/06 Paradise 2002
Unidentified collection. Pinus edulis Engelm. Exsicc.: 11/05/06 Fort Bowie 1251
Unidentified collection. Quercus chrysolepis Liebm. Exsicc.: 12/14/06 Bonita Canyon 2310
Unidentified collection. Quercus rugosa Nee Exsicc.: 11/01/06 Bonita Canyon 1309; 09/11/06 Pine Canyon 1294; 12/13/06 Shake Gulch 1960; 11/14/06 Wood Canyon Park 1921.
Unidentified collection. Quercus touseyai Sarg. Exsicc.: 11/27/06 Bonita Canyon 1924
Unidentified collection. Rhamnus californica Eschsch. Exsicc.: 08/28/06 Paradise 1290 ARIZ.
Unidentified collection. Sonchus oleraceus L. Exsicc.: 09/30/07 Paradise U.184 ARIZ.
Unidentified collection. ? Exsicc.: 10/10/06 Fly Peak 1260.
Unidentified collection. ? Exsicc.: 11/05/06 Fort Bowie 2298.
Unidentified collection. ? Exsicc.: 10/22/06 Miss Rhoda Riggs’ Ranch (Pinery Canyon) 2292
Unidentified collection. ? Exsicc.: 12/21/06 Miss Rhoda Riggs’ Ranch (Pinery Canyon) 1314.
Unidentified collection. ? Exsicc.: 10/11/06 Monument Peak 1278.
Unidentified collection. ? Exsicc.: 06/24/07 Monument Peak 1265.
Unidentified collection. ? Exsicc.: 10/15/06 Paradise 1287
Unidentified collection. ? Exsicc.: 12/18/06 Paradise 1256.
Unidentified collection. ? Exsicc.: 09/18/07 Paradise 1884.
Unidentified collection. ? Exsicc.: 10/22/07 Paradise 2267.
Unidentified collection. ? Exsicc.: 11/16/06 Pedestal Rock 1280.
Unidentified collection. ? Exsicc.: 10/05/06 Pine Canyon 1310.
Unidentified collection. ? Exsicc.: 06/26/07 Pine Canyon 1264.
Unidentified collection. Rumex crispus L. Exsicc.: 10/22/06 Miss Rhoda Riggs’ Ranch (Pinery Canyon) 1895.
Unidentified collection. Solidago parryi (Gray) Greene Exsicc.: 09/26/06 Barfoot Park 1427.
Urtica gracilenta Greene – Exsicc.: 07/12/07 Head of Chaparone Canyon 1615.
Urtica gracilis Ait. – Urtica dioica L. ssp. gracilis (Ait.) Seland. – Exsicc.: 07/12/07 Head of Chaparone Canyon 1616.
Usnea barbata Fr. – ? Exsicc.: 09/27/06 Barfoot Park 1430.
Vagnera racemosa (L.) Moronq. – Smilacina racemosa (L.) Desf. Exsicc.: 06/24/07 Monument Peak 1537.
Valeriana edulis Nutt. ex Torr. and Gray Exsicc.: 09/05/06 Barfoot Park 1353.
Verbascum blattaria L. – Verbascum virginatum Stokes Exsicc.: 10/17/06 Pine Canyon 1481.
Verbascum thapsus L. Exsicc.: 07/05/07 Pine Canyon 1611.
Verbena canescens var. neo-mexicana Gray – Verbena neomexicana (Gray) Small Exsicc.: 10/21/07 Chiricahua Mine 1804
Verbena remotia Benth. – ? Exsicc.: 07/05/07 Pine Canyon 1612.
Verbena urticifolia L. Exsicc.: 10/12/07 Wilgus Ranch (W. Turkey Cr.) 1783.
Verbena wrightii Gray – *Glandularia wrightii* (Gray) Umber Exsicc.: 08/31/06 Barfoot Park 1345.
Verbesina longifolia (Gray) Gray Exsicc.: 09/17/06 Barfoot Park 1387.
Vicia americana Muhl. ex Willd. Exsicc.: 09/01/06 Barfoot Park 1348.
Vicia leucophaea Greene Exsicc.: 09/06/06 Barfoot Park 1358.
Vicia pulchella Kunth Exsicc.: 09/01/06 Barfoot Park 1350.
Viguiera cordifolia Gray Exsicc.: 09/22/06 Barfoot Park 1412.
Viguiera helianthoides Kunth – ? Exsicc.: 09/16/07 Paradise 1662.
*Wedelia glabra* (Choisy) Standl. – *Allionia choisyi* Standl. Exsicc.: 10/02/07 Paradise 1695.
*Wedelia incarnata* (L.) Kuntze var. villosa Standl. – ? Exsicc.: 10/01/07 Paradise 1696.
Xanthium canadense P. Mill. – *Xanthium strumarium* var. canadense (P. Mill) Torr. and Gray Exsicc.: 10/22/06
Miss Rhoda Riggs’ Ranch (Pinery Canyon) 1487.
Zauschneria californica K. Presl. – *Epilobium canum* (Greene) Raven ssp. angustifolium (Keck) Raven Exsicc.: 09/29/07 Paradise 1736; 10/04/07 Paradise Falls 1760; 10/15/07 Sawmill Setting, Pine Canyon 1803.
*Zornia diphylla* Pers. Exsicc.: 09/03/07 Shelter Cove, N. Wilgus Ranch 1648.
The cover photograph was taken October 4, 1935, in Saguaro National Monument by the first National Park Service photographer, George Alexander Grant (1891-1964).

As the nation's principal conservation agency, the U.S. Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting fish, wildlife and plants, preserving the environmental and cultural values of national parks and historic places, and providing for enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.