

Discoïd Flowers



A **discoïd flower** head is the simplest arrangement in the sunflower family, composed only of disk florets (no ray florets present) that have regular, tubular corollas tipped with 4 to 5 apical (at the apex; the highest point) "teeth." Typically, such flowers are perfect (bisexual; containing both stamen and pistil) and fertile, though some may be infertile.

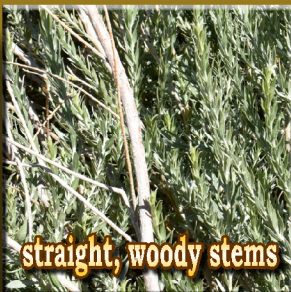
Family ASTERACEAE (Stinkworts)

Arrow Weed

(*Pluchea sericea*)



Hoover Dam; LM NRA



Corn Creek; Desert NWR, NV



Hoover Dam; Lake Mead NRA



Davis Dam; Laughlin, NV



Davis Dam; Laughlin, NV

Flowers:	discoid, corymbose; .25"	Marginal flowers:	female, perfect (bisexual); pink to lt. purple
		Central flowers:	few, perfect, most sterile; pink to lt. purple
Stems:	grooved, hairy (non-glandular); branch towards tips; woody, long, straight branches; green; 96"		
Leaves:	lanceolate to linear; entire; alternate; hairy (non-glandular), sessile; green; 1-2"		
Blooms:	March to June		
Range:	southwestern US east to TX and south to northern MEX		
Habitat:	sandy to gravelly substrates; desert riparian; Lower to Upper Sonoran Life Zones		

Notes:

common; perennial; woody, rhizomatous (underground stem) evergreen shrub native to lower Colorado River valley, creosote bush, and desert scrub habitats in sw US from CA/NV/AZ east to TX, south into n MEX at elevations up to ~2,000'; grows to ~15', though usually shorter; tiny, grooved **achene** with bristly **pappus**; used by indigenous people as food (edible root), an anti-diarrheal, eyewash, for thatching, and especially for making arrows from is long, straight stems

Notes:

Arrow weed is a very common component of wetland plant communities. I have never seen it far from a reliable water source. It is easily recognized--even when not in bloom--by its long, relatively straight stems that were once used to make shafts for arrows.

As D2

Family ASTERACEAE (Thistles)

Mojave Thistle (*Cirsium mohavense*)



Ash Meadow NWR; NV



Red Spring; RRNCA; NV



Red Spring; Red Rock Canyon NCA; Nevada



Red Spring; RRNCA; NV



Red Spring; RRNCA; NV

- Flowers:** discoid; inflorescence of 1 to many; ~1" disk florets: white, pink, lavender
- Stems:** erect; one to numerous; densely wooly; branched near top; green; 12-96"
- Leaves:** elliptic to oblanceolate; toothed to lobed; basal rosette to alternate; woolly, spiny; green; to 24"
- Blooms:** June to October
- Range:** southwestern US (Mojave Desert, southern Great Basin, adjacent areas)
- Habitat:** moist areas in dry regions (springs, streams, meadows); Lower Sonoran to Transition Life Zones

Notes:

common; biennial/perennial; native to sw US, mainly the Mojave Desert, growing up to 8' in moist areas at elevations of ~800-9,000'; spiny, glabrate phyllaries; .1" achene with ~.5" pappus; aka Virgin Thistle; somewhat salt tolerant; important host to insect pollinators (bees, butterflies, etc.), a food source for small mammals, various birds (particularly goldfinches), bats, insects, etc., and source for nesting material; indigenous people ate parts of this plant after careful preparation; distinguished from New Mexico Thistle by bushier appearance (more branched stems)

Mojave presence: native

Comments:

Thistles can be very difficult to identify by species. Upon close inspection they are distinguished by differences in such things as their leaves, phyllaries, and branching. Sometimes range is often helpful, but even that is not necessarily conclusive, as ranges often overlap.

As D3

Family ASTERACEAE (Thistles)

New Mexico Thistle (*Cirsium neomexicanum*)



single long stem

Red Spring; RRCNCA, LV, NV



scenic home

Ash Spring; RRCNCA, LV, NV



June

Red Spring; Red Rock Canyon NCA; Nevada



spiny stems, leaves, phyllaries

Red Spring; RRCNCA, LV, NV



billowy pappi

Red Spring; RRCNCA, LV, NV

- Flowers:** discoid; on cyme-like panicles; 2.5" disk florets: white, pink, lavender
- Stems:** spiny; usually single, often some branching above base; cobwebby hairs (arachnoid); green; 84"
- Leaves:** lanceolate to elliptic; lobed; alternate and basal rosette; densely hairy, spiny; green; 10-14"
- Blooms:** April to May
- Range:** desert southwestern US from CA east to CO/NM; into northwestern Mexico
- Habitat:** arid canyons, washes, meadows, rocky slopes, etc.; Lower to Upper Sonoran Life Zones

Notes:

common; biennial or short-lived perennial; grows to 7' tall in desert scrub to pinyon-juniper woodlands in sw US at elevations ranging from 1,000-6,500'; fruit is an achene with bristly pappus; aka Desert Thistle, Utah Thistle, etc.; important host plant for various pollinators (bumblebees, beetles, butterflies, moths, etc.) and birds; used by indigenous people as a remedy for varicose veins

Mojave presence: native; year-round

Comments:

This thistle has a much wider range than the Mojave Thistle (previous page), making identification easier where their ranges do not overlap, otherwise, positive identification can be very difficult.

As D4

Family ASTERACEAE (Rabbitbrushes)

Mojave Rabbitbrush (*Ericameria paniculata*)



fall bloomer

Visitors Center; RRNCA



October

Red Rock Canyon NCA; Nevada



raceme-like inflorescence

Red Rock Cyn NCA; LV, NV



cylindrical leaves

Red Rock Cyn NCA; LV, NV



pappi in November

Dolan Springs, Arizona

- Flowers:** discoid; dense inflorescence; ~ .5" disk florets: **yellow**; 5-8
- Stems:** erect; woody at base; loosely branched; glabrous, resinous; **green**; ~24"
- Leaves:** cylindrical* with pointed tip; alternate; glabrous, resinous; **green**; ~.5-1.5"
- Blooms:** June to December
- Range:** southwestern US, mainly the Mojave Desert and adjacent areas
- Habitat:** dry areas with sub-surface water, washes, roadsides, etc.; Lower to Upper Sonoran Life Zones

Notes:

common; woody perennial; grows to ~2 - 6' tall throughout the Mojave Desert and neighboring areas in creosote bush scrub to pinyon-juniper woodlands at elevations between ~1,200 - 5,000'; 4 - 5 rows of .25" **phyllaries**, tiny **achene** with bristly, tan **pappus**; aka **Black-Banded Rabbitbrush**; often recognized by black, gummy bands of fungal infection; produces good-quality latex that was once considered for exploitation, but too small an amount to be economical

(*distinguished from **Rubber Rabbitbrush**)

Mojave presence: native; year-round

Comments:

Rabbitbrushes in general are reliable late bloomers easily recognizable by their thick foliage and dense, yellow inflorescences of discoid flower heads that bloom in the fall, then puff into cottony masses of pappi reminiscent of the various species of baccharis. They are especially

conspicuous along highways and roads.

As D5

Family ASTERACEAE (Rabbitbrushes)

Rubber Rabbitbrush (*Ericameria nauseosa*)



full October bloom
at lower elevations

Red Rock Cyn NCA; NV



pappi ready to disperse

Lee Canyon; Spring Mtns; NV



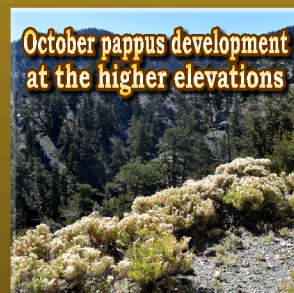
August

South Rim; Grand Canyon NP



narrow, linear leaves

South Rim; Grand Canyon NP



October pappus development
at the higher elevations

Lee Canyon; Spring Mtns; NV

- Flowers:** discoid; inflorescence; ~.5" disk florets: yellow; 4-6
- Stems:** erect/spreading; woody (lower), but flexible; densely hairy (tomentose); green to whitish; ~24"
- Leaves:** linear/filiform*; entire; alternate (when present); glandular, densely hairy; green; .5-1"
- Blooms:** July to November
- Range:** western NA from Canada south to northern Mexico, eastward from Pacific coast to Great Plains
- Habitat:** desert/semi-desert, alluvial, forests, roadsides, etc.; Lower Sonoran to Transition Life Zones

Notes:

very common; perennial shrub; grows to 8' in dry, well-drained, gravelly habitats in sagebrush and creosote bush scrub to pine forests throughout western NA from the Pacific coast east to the Great Plains, and CAN south to n MEX at elevations from ~2,000-8,000'; quite variable in appearance, it is easily recognised by its full, bright yellow bloom well into late fall, and often pungent aroma; erect, glabrous phyllaries; small achene with thin, bristly pappus; aka Goldenbush, Turpentine Bush, Rabbitbush, Chamisa; 2 subspecies; important food source for browsers (rabbits, etc.), seed eaters (birds, small mammals), and pollinators (bees, butterflies, and other insects); produces good-quality latex; indigenous people made tea from the leaves/roots for relief of colds, stomachache

(*distinguished from Mojave (Black-Banded) Rabbitbrush)

Mojave presence: native; year-round

As D6

Family ASTERACEAE (Pincushions)

Mojave Pincushion (*Chaenactis xantiana*)



Lake Mead NRA; AZ



low-growing groups

Lake Mead NRA; AZ



March

US Highway 93; Lake Mead NRA; AZ



fleshy leaves

Lake Mead NRA; AZ



purplish stems

Lake Mead NRA; AZ

- Flowers:** discoid; inflorescence (1-5); .25" marginal flowers: enlarged, 5 lobed; white
central flowers: smaller, curled anthers; white
- Stems:** erect, thin; one to several, lightly branched; glabrous; green to purplish ; 4-16"
- Leaves:** thin, tubular; pinnately lobed; basal rosette (young), cauline; alternate/spiral; fleshy; green; 3"
- Blooms:** March to July
- Range:** interior western US
- Habitat:** sandy to gravelly; desert scrublands, chaparral, open flats, etc.; Lower Sonoran Life Zone

Notes:

common; annual; grows to ~1.5' in arid to semi-arid environments in the western US mainly in the Mojave Desert north to se OR, south through s CA, and east to nw AZ (though reported as far east as TX) at elevations from 1,000 to 3,500'; short, overlapping, brown-tipped green phyllaries; cypsela fruit; aka **Fleshcolor Pincushion**, **Xantus Pincushion**, etc.; named derived from slightly pinkish color of buds; valuable food source for various wildlife

Mojave presence: native

Comments:

This pincussion is easily confused with others in the region, especially the **Esteve's Pincussion**, *Chaenactis stevioides*, which overlaps most of its range.

As D7

Family ASTERACEAE (Pincushions)

Fremont Pincushion (*Chaenactis fremontii*)



typical single stalk

Goodsprings Valley; NV



low-growing groups

Bare Mountain; Beatty, NV



enlarged marginal flowers

April

Goodsprings Valley; Goodsprings, NV



blunt-tipped phyllaries

Goodsprings Valley; NV



purple older stems

Bare Mountain; Beatty, NV

- Flowers:** discoid; inflorescence (1+); .25-.5" marginal flowers: enlarged, 5 lobed; white
central flowers: smaller, radial symetry; cream white
- Stems:** erect; usually single*, branched; glabrous*; green (young) to purple (old); 4-12"
- Leaves:** linear; pinnately lobed; alternate cauline (sparse*), basal rosettes; fleshy; green; 1-2"
- Blooms:** March to May
- Range:** southwestern US south to Baja, MEX
- Habitat:** sandy to gravelly; desert scrublands, open flats, etc.; Lower to Upper Sonoran Life Zones

Notes:

very common; annual; grows to ~1' as single plants or groups throughout the Mojave Desert and into the Sonoran Desert of nw MEX at elevations up to ~5,000'; one row of phyllaries with flattened tips; cypsel fruit with pappus that consists of up to 5 membranous scales; aka Desert Pincushion, but this name is applied to several other species in the same range

(*distinguished from *C. stevioides*; *distiinguished from *C. carphoclinia*)

Mojave presence: native

Family ASTERACEAE (Pincushions)

Pebble Pincushion (*Chaenactis carphoclinia*)



1 head per branch

Dolan Springs; AZ



bracts and paleae

Dolan Springs; AZ



tubular disk florets

April

Pierce Ferry Road; Dolan Springs, AZ



thick, divided leaves

Dolan Springs; AZ



purple, branched stems

Dolan Springs; AZ

- Flowers:** discoid; long, tubular, 5-lobed, apical, 1/branch; ~.25 x 1" disk florets: white; up to ~20
- Stems:** erect; single; branched; finely hairy (pubescent); purplish; 12"
- Leaves:** linear; pinnately lobed; alternate; cauline and basal; succulent, whitish pubescence; green; to 4"
- Blooms:** January to June
- Range:** desert southwest US; Baja and northwestern Mexico
- Habitat:** sandy to rocky; desert scrubland, slopes, etc.; Lower to Upper Sonoran Life Zones

Notes:

uncommon; annual; grows to ~1' throughout the Mojave Desert (CA, NV, UT, AZ) south into the nw MEX at elevations up to ~6,000'; flat, sharp, purplish **phyllaries**; **achene** fruit with scaly **pappus**; aka **Strawbed Pincushion**; 2 subspecies; food source for various wildlife (birds, rodents, tortoises, insects)

Mojave presence: native

Comments:

The pebble is a rather rare plant, and certainly the least common of several pincussion species found in the desert southwest. Its discoid head is usually dominated entirely by long, blossomy, tubular florets, whereas other species present small, knobby central florets surrounded by short marginal florets. Compare to the **Fremont Pincussion** on the previous page.

As D9

Family **ASTERACEAE** (Turtlebacks)

Velvet-Rosette Turtleback (*Psathyrotes ramosissima*)



turtle shaped

Avawatz Mountains; CA



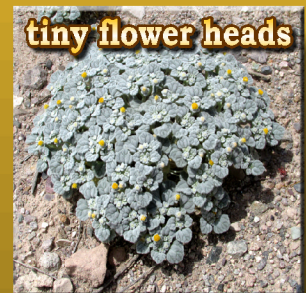
dry, gravelly substrate

Avawatz Mountains; CA



May

Avawatz Mountains, San Bernardino Co., CA



tiny flower heads

China Ranch; Tecopa, CA



fleshy, velvety leaves

China Ranch; Tecopa, CA

- Flowers:** discoid; tubular; ~.5" disk florets: **yellow** to brownish purple; 16-32
- Stems:** prostrate to erect; densely branched; brittle, hairy (young) to glabrous (older); gray green; 2-6"
- Leaves:** oval; toothed near tip; branched; alternate; velvety, notched, prominent veins; gray green; .75"
- Blooms:** March to June*
- Range:** southwestern NA
- Habitat:** sandy to gravelly soils; desert scrub, flats, washes, etc.; Lower Sonoran Life Zone

Notes:

relatively rare; herbaceous annual; a low, rounded (like a turtle's back, thus the name) shrub that grows to ~6-10" tall in creosote bush scrub throughout most of the Mojave Desert south into the Sonoran Desert of nw MEX below ~3,000'; 2 rows of .25" **phyllaries** that have tiny **achenes** with brownish **pappi** in 3 - 4 rows; aka **Brittlestem**, **Velvet Turtleback**; produces a distinctively strong resinous odor; used by native populations as an eyewash, toothache remedy, dressing for snakebites, and as a tea to treat intestinal ailments

(*distinguished from **Mealy-Rosette Turtleback** {June to October})

Mojave presence: native

Family ASTERACEAE (Pygmy Cedars)

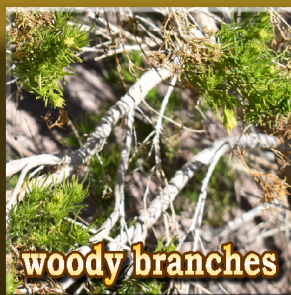
Pygmy Cedar (*Peucephyllum schottii*)



desert evergreen

dry, gravelly habitat

US 190; Death Vally NP



woody branches

Hoover Dam; Lk Mead NRA



February

Hoover Dam; Lake Mead National Recreation Area



linear, glandular,
alternate leaves

Red Rock Cyn NCA



12-21 flowers/stalk

Hoover Dam; Lk Mead NRA

Flowers:	discoid; tubular; solitary; ~.5"	disc florets: pale yellow; 12-21
Stems:	erect; densely branched; resinous; gray, woody trunk*; shiny green	
Leaves:	narrow linear, needle-like; alternate; vibrant green, glandular; green; 1"	
Blooms:	December to June	
Range:	southwestern US (CA, NV, AZ, UT) to northwestern MEX (Baja, Sonora)	
Habitat:	arid to semi-arid; rocky outcrops, canyons, washes, etc;	
	Lower to Upper Sonoran Life Zone	



Red Rock Cyn NCA

Notes:

relatively common; perennial (lives to about 100 years); an evergreen shrub to sub-tree* (superficially resembling a conifer) that grows to 9' in desert scrub communities throughout most of the Mojave Desert south into Sonora and Baja, MEX, at elevations up to 4,600'; 1 row of up to eighteen gland-dotted .5" **phyllaries**; woody, dark **cypsela**; **pappus** of fine bristles; aka **Sprucebush**, **Desert Fir**, **Desert Pine**, **Schott's Pygmy Cedar** (not a true fir, pine, or cedar); only member of the genus **Peucephyllum**; important to birds and rodents for food and shelter

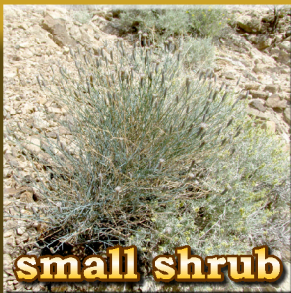
(* highly unusual for members of the sunflower family, which are generally herbaceous)

Mojave presence: native

As D11

Family ASTERACEAE (Poreleafs)

Slender Poreleaf (*Porophyllum gracile*)



small shrub

Frenchman Mtn; LV, NV



smooth stems

Frenchman Mtn; LV, NV



April

Frenchman Mountain; Las Vegas, NV



long. waxy phyllaries

Frenchman Mtn; LV, NV



narrow, alternate leaves

Frenchman Mtn; LV, NV

- Flowers:** discoid; tubular; solitary, terminal; 5" disc florets; white to purplish; 20-30
- Stems:** erect; suffrutescent (woody base); branched, tangled; waxy, slender, glabrous; blue green; 18"
- Leaves:** linear to filiform; entire; alternate; aromatic; blue green; to ~1.5"
- Blooms:** March to October (sometimes year-round depending on precipitation)
- Range:** southwestern US; Baja and northwestern Mexico
- Habitat:** sandy to gravelly; desert scrub, slopes, washes, etc.; Lower Sonoran Life Zone

Notes:

uncommon; short-lived perennial; grows to ~2' in the sw US from w TX west to s CA, south into MEX up to ~4,000' elevation; waxy, gland-bearing phyllaries to 2"; cypsela fruit with pinkish, bristly pappi; aka *Odora*; produces a strong, rather unpleasant odor; provides food and shelter for wildlife (birds, small mammals, insects)

Mojave presence: native

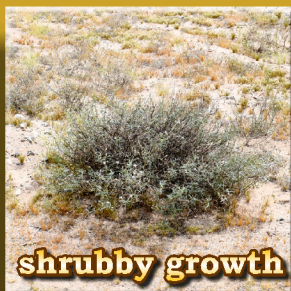
Comments:

Though widespread throughout its range in the southwestern US and into Mexico, this unusual looking plant with its conspicuously long flower heads is nevertheless a rather uncommon species in the Mojave. The specimen shown here, photographed at Frenchman Mountain on the east side of the Las Vegas Valley in southern Nevada in April of 2018 is the only one I've encountered (that I'm sure of) in my 40-plus years in the desert region.

As D12

Family **ASTERACEAE** (Palafoxes)

Desert Palafox (*Palafoxia arida*)



shrubby growth

Bullhead City, AZ



Bullhead City, Arizona



long. hairy phyllaries

Bullhead City, AZ



branched stems

Bullhead City, AZ



narrow, alternate leaves

Bullhead City, AZ

- Flowers:** discoid; tubular; terminal panicle; 5 triangular lobes; .5" disc florets: white to pinkish; 9-40
Stems: erect; branched; scabrous to sparsely hairy; green; 18"
Leaves: linear to narrow; entire; alternate; canescent (appressed hairs), glandular; blue green; 5"
Blooms: January to June (later depending on precipitation)
Range: southwestern US; Baja and northwestern Mexico
Habitat: sandy to gravelly; desert scrub, slopes, washes, etc.; Lower Sonoran Life Zone

Notes:

uncommon; herbaceous annual; grows as an open to dense shrub to 6' in the sw US (s CA, s NV, w AZ, sw UT), south into MEX (Baja, Sonora) at elevations up to 3,000'; 1", glandular, scabrous to hairy, pointed phyllaries of equal length; .6" cypsela fruit with .5" achenes topped with scaly pappi; aka Desert Needle, Spanish Needles (not to be confused with *Bidens alba*); 2 subspecies; provides food and cover for a variety of wildlife (e.g. birds, rodents, insects)

Mojave presence: native

Comments:

At first glance in the field, palafoxes can be easily mistaken for another uncommon discoid plant that shares its range: the Slender Poreleaf (previous page). The latter, however, has stems arising from a woody base (suffrutescent), and waxy phyllaries.

Family ASTERACEAE (Bebbias)

Sweetbush (*Bebbia juncea*)



typical habitat

Dolan Springs, AZ



April

Mt Tipton Wilderness Area; Dolan Springs, AZ



small, terminal heads

Dolan Springs, AZ



erect, branching stems

Dolan Springs, AZ



narrow, alternate leaves

Dolan Springs, AZ

- Flowers:** discoid; tubular; cyme inflorescence; .5" disc florets; yellow to orange yellow; 20-50
- Stems:** erect to spreading; woody base; slender, branched, tangled; aromatic, pubescent; green; to 48+"
- Leaves:** linear to elliptical; entire to dentate; opposite (lower), alternate (upper); sessile; green; 1.5"
- Blooms:** April to July (sometimes year-round depending on precipitation)
- Range:** southwestern US; Baja and northwestern Mexico
- Habitat:** dry, sandy to gravelly; desert scrub, slopes, washes, canyons, etc.; Lower Sonoran Life Zone

Notes:

common locally; short-lived perennial; grows to 4' in the sw US from extreme w TX west to s CA, south into Baja and nw MEX up to ~5,000' elevation; long, linear, finely hairy, overlapping (in 3 to 5 rows), pinkish, recurved phyllaries; feathery (plumose) cypsela fruit with stiff hairs (strigose); aka Sweetbush *Bebbia*, Chuckwalla's Delight; 2 subspecies; produces a somewhat sweet, pleasant aroma; attracts numerous insects, particularly butterflies, bees, moths, etc.

Mojave presence: native

Comments:

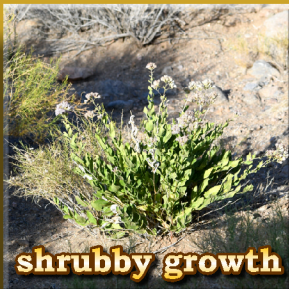
Early in the bloom season (April), these plants are readily recognized by the appearance of prodigious pale-yellow buds (left) poised atop each stem branch. Of the two subspecies, only *B. j. aspera* occurs in the US (*B. j. juncea* grows in Mexico). The specimens shown here were photographed in April and May of 2023 in Dolan Springs, Arizona.



As D14

Family ASTERACEAE (Acortias)

Brownfoot Acortia (*Acortia wrightii*)



shrubby growth

Dolan Springs, AZ



articulated stems

Dolan Springs, AZ



May

Mt Tipton Wilderness Area; Dolan Springs, AZ



tubular disc flowers

Dolan Springs, AZ



toothed, clasping leaves

Dolan Springs, AZ

- Flowers:** discoid; tubular; corymb inflorescence; bisexual; bilabiate; .5" disc florets: pink; 8-12
- Stems:** erect, articulated; unbranched; subglabrous to glandular; green; to 48"
- Leaves:** variable (oblong, elliptical, lanceolate); dentate; alternate; sessile to clasping; green; 5"
- Blooms:** May to November
- Range:** southwestern US; northern Mexico
- Habitat:** dry, gravelly; desert scrub, slopes, washes, canyons, etc.; Lower to Upper Sonoran Life Zones

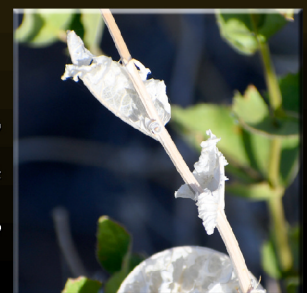
Notes:

uncommon; perennial; grows to 4' in the sw US from s TX west to AZ/sw UT, south into n MEX at elevations from 1,200-6,000'; green, linear to lanceolate, layered (2-3) phyllaries with purple margins and blunt tips; cypsela fruit with linear to fusiform, .33", puberulant (finely hairy) achenes; .5" bright white pappi; aka Pink Perezia, Wright's Desertpeony; seeds eaten by small mammals and granivorous birds, while the nectar attracts numerous insects

Mojave presence: native; extreme eastern region

Comments:

This acortia in Dolan Springs, AZ, in May of 2024 presents two distinctive field characteristics to aid in its identification. First, the green phyllaries are adorned with purple margins (left), and second, the mature leaves fade to bright white (right).



As D15