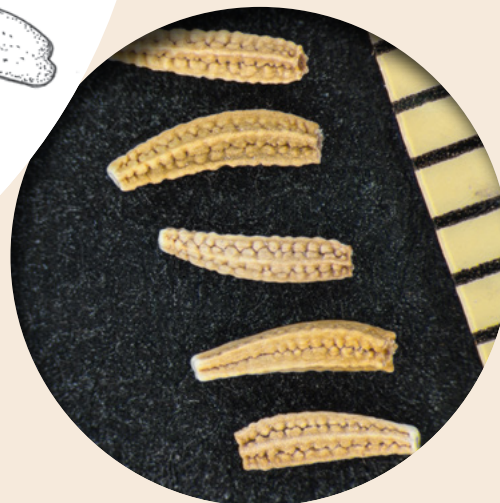
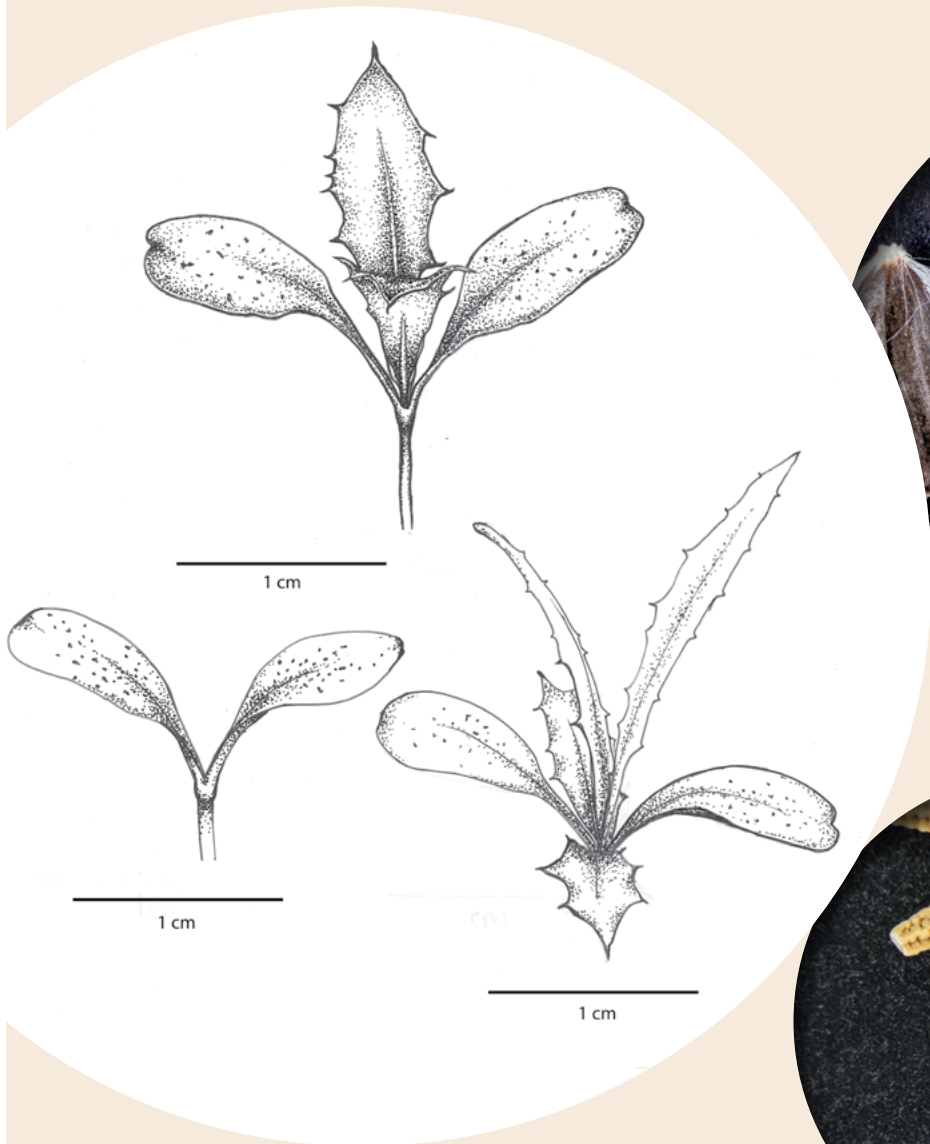


MOJAVE DESERT

seed & seedling

GUIDE



USING TRADITIONAL & CONTEMPORARY
SCIENTIFIC ILLUSTRATION

Tiffany J. Pereira
Tsvetelina M. Stefanova
Matthew C. Berger

FEBRUARY 2025





California State Office
Bureau of Land Management
2800 Cottage Way
Suite W1623
Sacramento, CA 95825
Award#: L22AC00451

Tiffany J. Pereira, M.S.
Associate Research Scientist
Botanical Illustrations

Tsvetelina M. Stefanova
Staff Research Scientist
Seed Photographs

DRI
755 East Flamingo Road
Las Vegas, Nevada 89119

Botanizing LLC
Matthew C. Berger, Owner
Mature Plant Photographs



ACKNOWLEDGMENTS

We thank many colleagues and collaborators for helping this project come to fruition. Thank you to **Judy Perkins** and the Bureau of Land Management for supporting this work. Design expertise and layout of this technical guide was provided by **Lori Fulton** of DRI. Nursery space and native seed was provided by **Kelly Wallace** and **Carrie Norman** at the Lake Mead Song Dog Plant Nursery. Additional native seed was provided by the BLM Seeds of Success Program and the USDA-ARS Germplasm Resources Information Network (GRIN). Additional thanks to **Jim Holland** and **Arnold (Jerry) Tiehm** for their botanical insight and the **Abella Lab** at UNLV for supporting this work as part of my graduate program. Lastly, thank you to the **UNLV undergraduate technicians** and **DRI botany technicians** for their assistance and dedication.

FOREWORD

In today's world of constant contact, scientists face a mounting problem—how to effectively communicate. Jargon, information access, and apathy are a few of the hurdles scientists face while engaging the public. How can we present data in a way that engages and impacts an audience, especially hard-to-reach individuals? As a solution to this conundrum, science and art should not exist on separate planes, polarized by different processes. Creative media can powerfully convey scientific knowledge. By harnessing one of the oldest and most ubiquitous languages of civilization, scientists can bridge gaps, convey complexities, and build trust.

Scientific illustration is the accurate depiction of objects and concepts in the sciences, including wildlife, botanical, and medical illustrations, but also textbook illustrations and sculptures (Hodges 1989)¹. While these creations can be beautiful works of art in and of themselves, the focus remains on accuracy, reflecting the findings of science and technology, and taking the viewer to the often unobservable (Hodges 2003)².

The earliest scientists did not have computers or cameras to document their work. Instead, they relied on writing and artwork to report their findings and collaborate with colleagues in their fields. This golden age of scientific illustration propelled advances in the sciences. Some of the most important discoveries in science and medicine are preserved through hand-rendered illustrations. Leonardo da Vinci, Charles Darwin, and John James Audubon are just three examples of the numerous researchers of centuries past that were both scientists and artists (Simpson & Barnes 2008)³. In their footsteps, many of today's scientific illustrators are also trained in both art and science, providing a necessary and often underutilized service to fellow researchers who wish to visualize their work.

Traditional approaches and techniques of scientific illustration include careful renderings in pen and ink, to precise painting in watercolor and oil paint. The advent of printing brought woodcuts, copper etchings and lithography, which in most cases, outside of a fine arts realm, have given way to full-digital printing and even digitally rendered drawings (Hodges 2003, Simpson & Barnes 2008). Scientific illustration, and more specifically, botanical illustration, has evolved with technological change. A combination of practices is often used today, with hand-drawn or painted images digitally processed for reproduction and print. The use of photography, however, as a technique for scientific illustration has been met with criticism in the past (Hodges 1989, Simpson *et al.* 2008). Despite this, some of the earliest photography techniques were used to create unique specimen guides. Anna Atkins' 1943 work, *British Algae: Cyanotype Impressions* (cyanotype blueprint process invented by Sir John Herschel), is an extraordinary example of the first scientific manual to be printed using photography. Today, many modern field guides use a combination of

-
- 1 Hodges, E. R. 1989. Scientific illustration: A working relationship between the scientist and artist. *Bioscience*, 104–111.
 - 2 Hodges, E. R. 2003. *The guild handbook of scientific illustration* John Wiley & Sons.
 - 3 Simpson, N., & P. G. Barnes. 2008. Photography and contemporary botanical illustration. *Curtis's Botanical Magazine*, 25(3), 258–280.

photography and drawing (Schaaf 1982⁴, Simpson & Barnes 2008). Embracing digital techniques may come slowly in the world of botanical illustration. However, new advances in photography techniques and software can be combined with traditional techniques to create highly detailed images (Simpson & Barnes 2008) fit for sharing with the scientific community and public in the modern digital age.

With this concept in mind, the goal of this project was to develop a novel illustrated guide for identifying Mojave native and exotic plant seeds and germinating seedlings. We worked with the Bureau of Land Management to identify priority restoration species. The focus on young seedlings (cotyledons and first leaves) is one of the first of its kind to assist in soil seed bank analysis, restoration projects, and identifying natural regeneration in the field. The ability to identify native plant seedlings and assist their establishment is valuable. Agency land managers could use this guide for assisted natural regeneration at restoration sites. There are private landowners interested in using native plants for landscaping but have trouble locating native plants for sale. Additionally, seed descriptions are often hard to interpret, and images or illustrations are nonexistent for many species. We hope the artwork of this unique project will provide a valuable tool for land managers, fellow researchers and for public education to reach a wider audience.

Now more than ever, we need to find a way to bring scientific discourse to the public using a relatable medium. As the adage says, a picture is worth a thousand words.

Tiffany Pereira

Associate Research Scientist, Ecologist
Pereira Conservation Ecology Lab
DRI

Species Information Sources:

Calflora
Flora of North America
NatureServe
SEINet
The Jepson Manual: Vascular Plants of California
USDA PLANTS Database

4 Schaaf, L. 1982. Anna Atkin's cyanotypes: An experiment in photographic publishing. *History of Photography*, 6(2), 151-172.

TABLE OF CONTENTS

<i>Amaranthus fimbriatus</i>	1
<i>Atriplex canescens</i>	2
<i>Atriplex hymenelytra</i>	3
<i>Atriplex lentiformis</i>	4
<i>Atriplex polycarpa</i>	5
<i>Lomatium parryi</i>	6
<i>Asclepias erosa</i>	7
<i>Asclepias subulata</i>	8
<i>Yucca brevifolia</i> var. <i>jaegeriana</i>	9
<i>Yucca schidigera</i>	10
<i>Ambrosia dumosa</i>	11
<i>Ambrosia eriocentra</i>	12
<i>Ambrosia salsola</i>	13
var. <i>salsola</i>	13
<i>Anisocoma acaulis</i>	14
<i>Baileya multiradiata</i>	15
<i>Chaenactis fremontii</i>	16
<i>Encelia farinosa</i>	17
<i>Encelia virginensis</i>	18
<i>Ericameria cooperi</i>	19
<i>Gutierrezia microcephala</i>	20
<i>Malacothrix glabrata</i>	21
<i>Pectis papposa</i>	22
<i>Stephanomeria exigua</i>	23
<i>Stephanomeria pauciflora</i>	24

Xylorhiza tortifolia	25
Chilopsis linearis	26
ssp. arcuata	26
Amsinckia tessellata	27
Eremocarya micrantha var. micrantha	28
Descurainia pinnata	29
Lepidium fremontii	30
Lepidium lasiocarpum	31
Echinocereus engelmannii	32
Opuntia phaeacantha	33
Peritoma arborea	34
Oxystylis lutea	35
Ephedra nevadensis	36
Euphorbia micromera	37
Euphorbia polycarpa	38
Acmispon brachycarpus	39
Acmispon rigidus	40
Acmispon strigosus	41
Astragalus didymocarpus	42
var. didymocarpus	42
Astragalus didymocarpus	43
var. dispermus	43
Astragalus layneae	44
Lupinus arizonicus	45
Prosopis glandulosa	46
Prosopis pubescens	47
Psoralea fremontii	48
Senna armata	49
Phacelia crenulata	50
Phacelia distans	51
Phacelia fremontii	52
Krameria bicolor	53

table of contents

table of contents

<i>Krameria erecta</i>	54
<i>Salvia columbariae</i>	55
<i>Scutellaria mexicana</i>	56
<i>Mentzelia albicaulis</i>	57
<i>Sphaeralcea ambigua</i>	58
<i>Sphaeralcea angustifolia</i>	59
<i>Abronia villosa</i>	60
<i>Fraxinus anomala</i>	61
<i>Fraxinus velutina</i>	62
<i>Menodora spinescens</i>	63
<i>Chylismia brevipes</i>	64
<i>Chylismia claviformis</i> ssp. <i>claviformis</i>	65
<i>Eremothera refracta</i>	66
<i>Oenothera deltoides</i>	67
<i>Penstemon palmeri</i>	68
<i>Plantago ovata</i>	69
<i>Achnatherum hymenoides</i>	70
<i>Achnatherum speciosum</i>	71
<i>Bouteloua aristidoides</i>	72
<i>Bouteloua barbata</i>	73
<i>Dasyochloa pulchella</i>	74
<i>Festuca octoflora</i>	75
<i>Hilaria jamesii</i>	76
<i>Hilaria rigida</i>	77
<i>Muhlenbergia porteri</i>	78
<i>Eriogonum fasciculatum</i>	79
<i>Eriogonum inflatum</i>	80
<i>Coleogyne ramosissima</i>	81
<i>Lycium andersonii</i>	82
<i>Lycium pallidum</i>	83
var. <i>oligospermum</i>	83
<i>Nicotiana attenuata</i>	84
<i>Nicotiana obtusifolia</i>	85
<i>Larrea tridentata</i>	86

Amaranthaceae (pigweed family)

Amaranthus fimbriatus

(Torr.) Benth. ex S. Watson

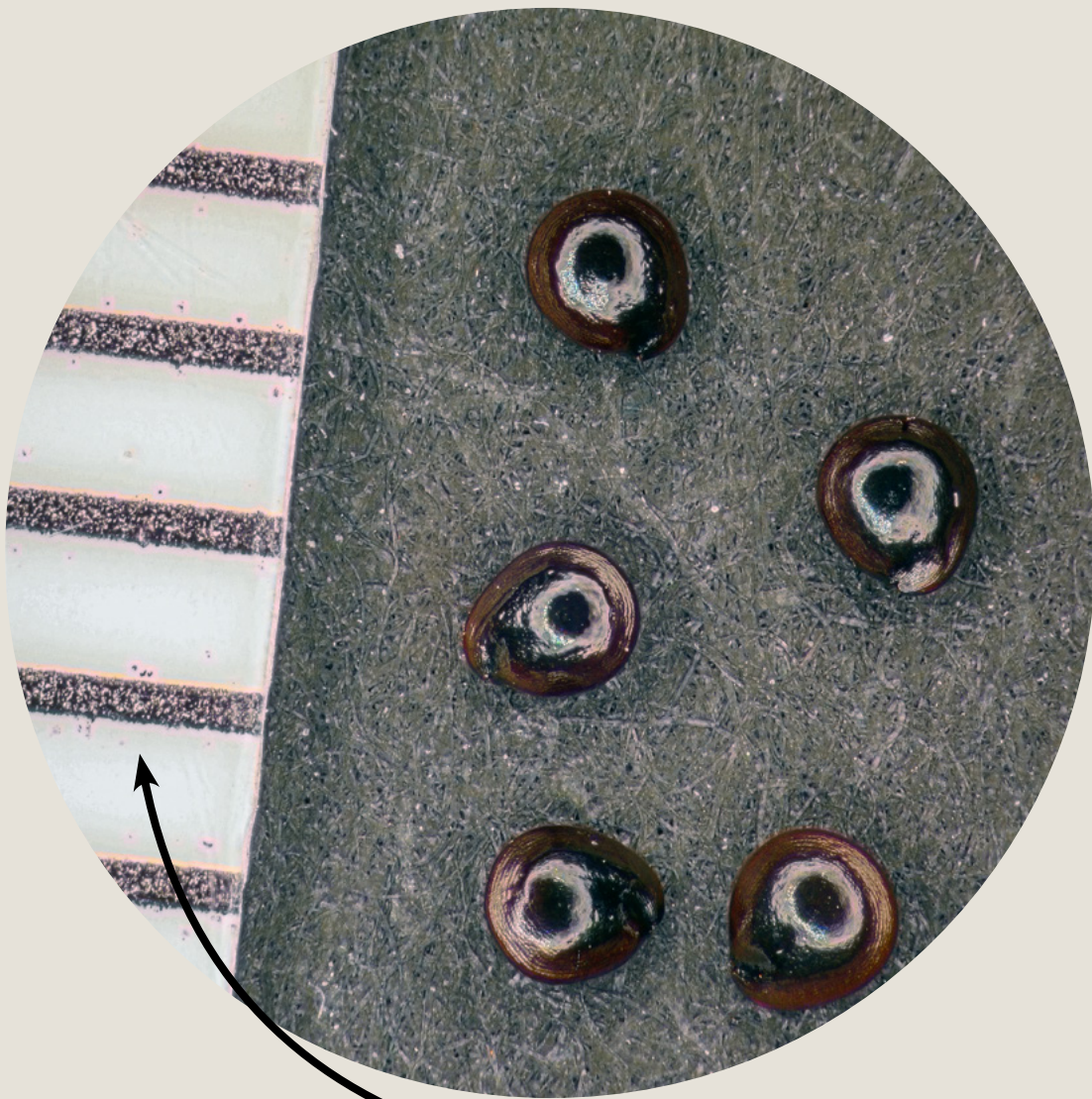
COMMON NAME: Fringed amaranth

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy, gravelly slopes, washes, and disturbed habitats, below 1200 m

DISTRIBUTION: AZ, CA, NM, NV, TX, UT



The scale of the seed ruler is 1 mm.

Amaranthaceae (pigweed family)

Atriplex canescens

(Pursh) Nutt.

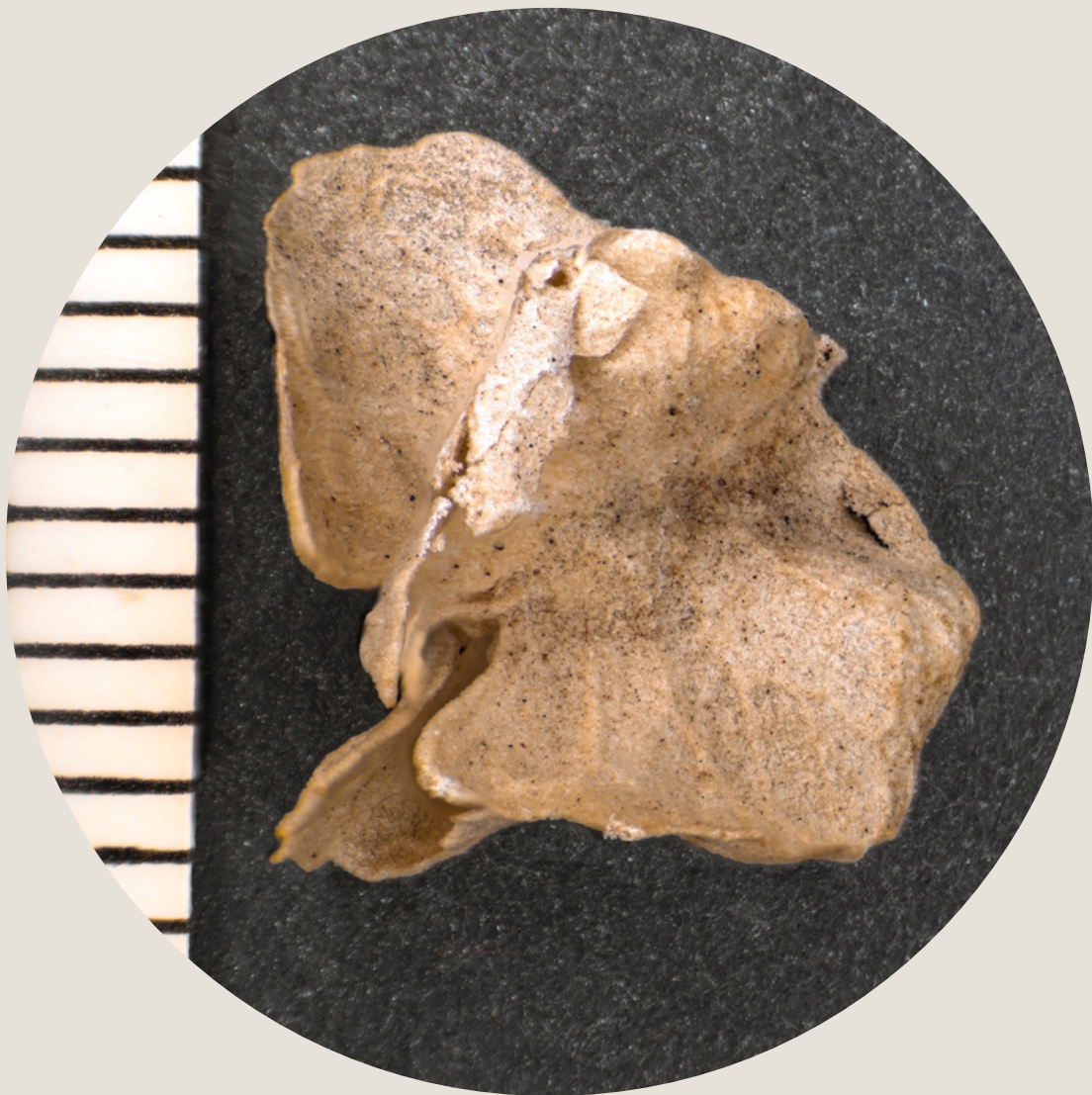
COMMON NAME: Fourwing saltbush

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Sandy or gravelly soils, from desert scrub to pinon-juniper communities, 100–200 m

DISTRIBUTION: Most of Western North America



Amaranthaceae (pigweed family)

Atriplex hymenelytra

(Torr.) S. Watson

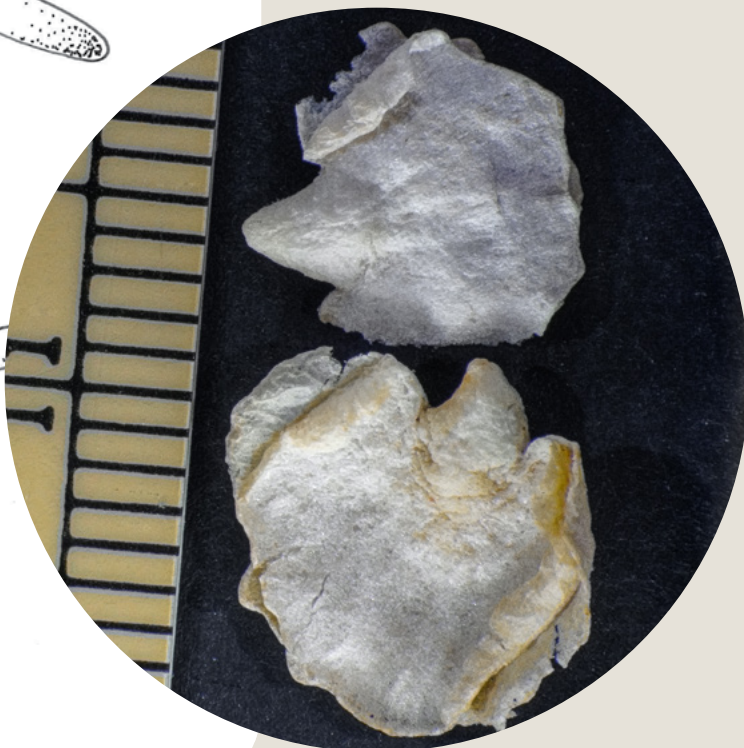
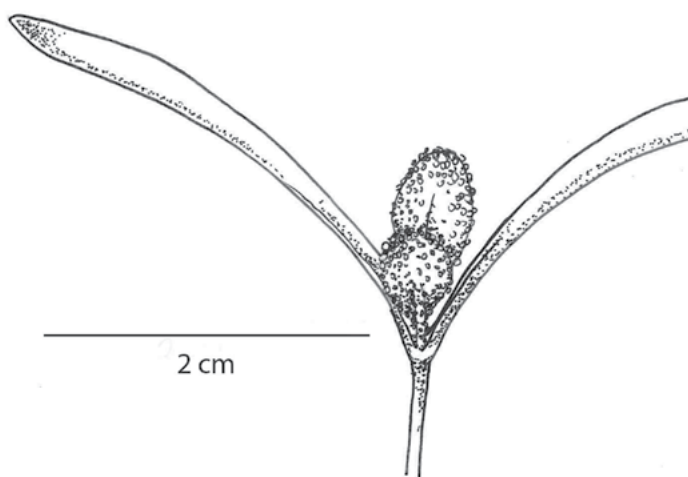
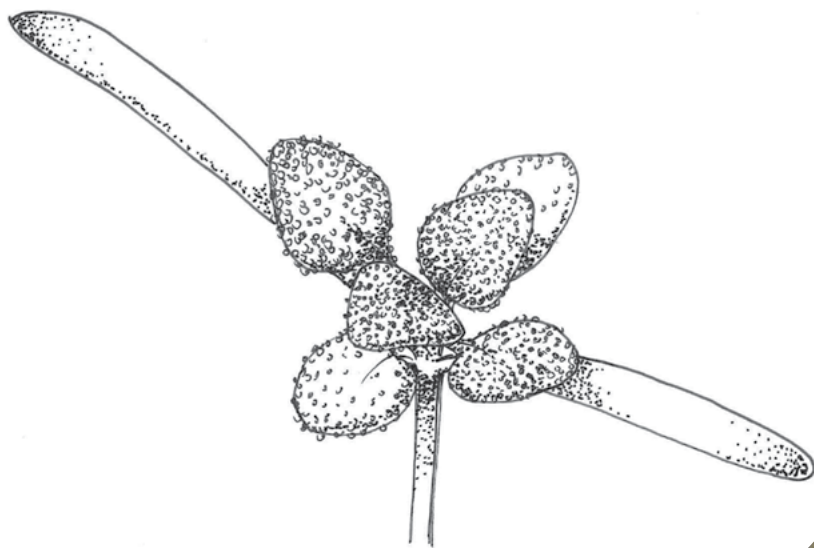
COMMON NAME: Desert holly

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Dry, saline alluvial fans and hills, below 1200 m

DISTRIBUTION: AZ, CA, NV, UT



Amaranthaceae (pigweed family)

Atriplex lentiformis

(Torr.) S. Watson

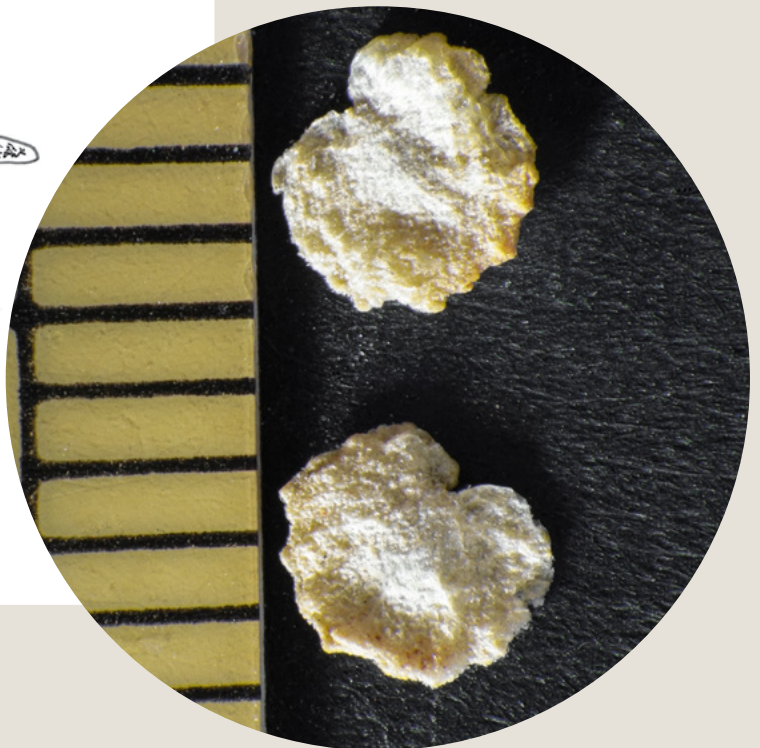
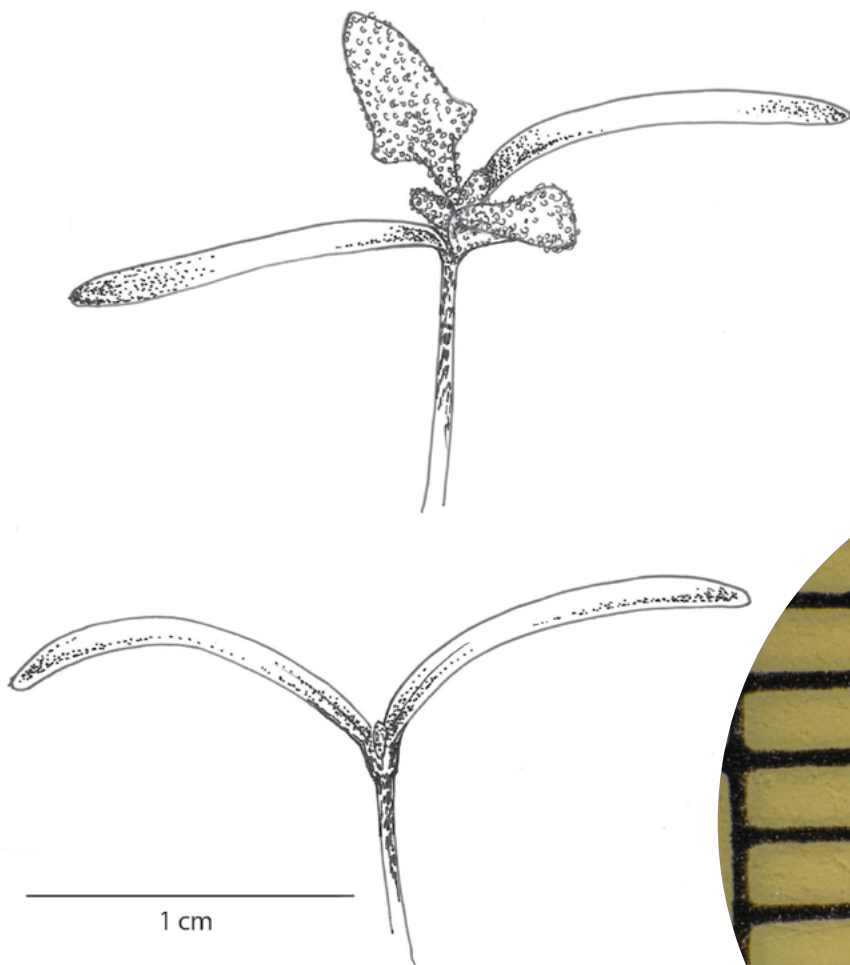
COMMON NAME: Quailbush

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Saline to essentially non-saline drainages, stream and canal banks, roadsides, warm desert shrub, saltbush, and riparian communities, 70-1000 m

DISTRIBUTION: AZ, CA, NV, UT



Amaranthaceae (pigweed family)

Atriplex polycarpa

(Torr.) S. Watson

COMMON NAME: Cattle saltbush

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Sandy to rocky soils of flats, washes and slopes, below 1050 m

DISTRIBUTION: AZ, CA, NV, UT



Apiaceae (carrot family)

Lomatium parryi

(S. Watson) J.F. Macbr.

COMMON NAME: Utah desert parsley

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Rocky slopes, generally in pinyon woodland, 1500–2500 m

DISTRIBUTION: AZ, CA, NV, UT



Apocynaceae (dogbane family)

Asclepias erosa

Torr.

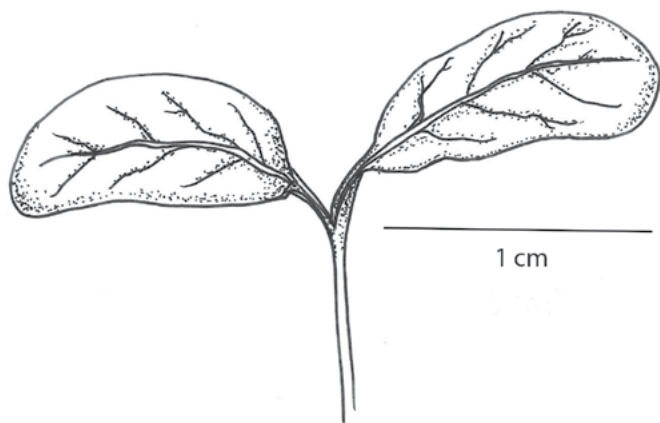
COMMON NAME: Desert milkweed

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Washes and roadsides in Sonoran and Mohave Desert scrub, especially on sandy plains and hummocks on either side of the Lower Colorado River, 50–1500 m

DISTRIBUTION: AZ, CA, NV, UT



Apocynaceae (dogbane family)

Asclepias subulata

Decne.

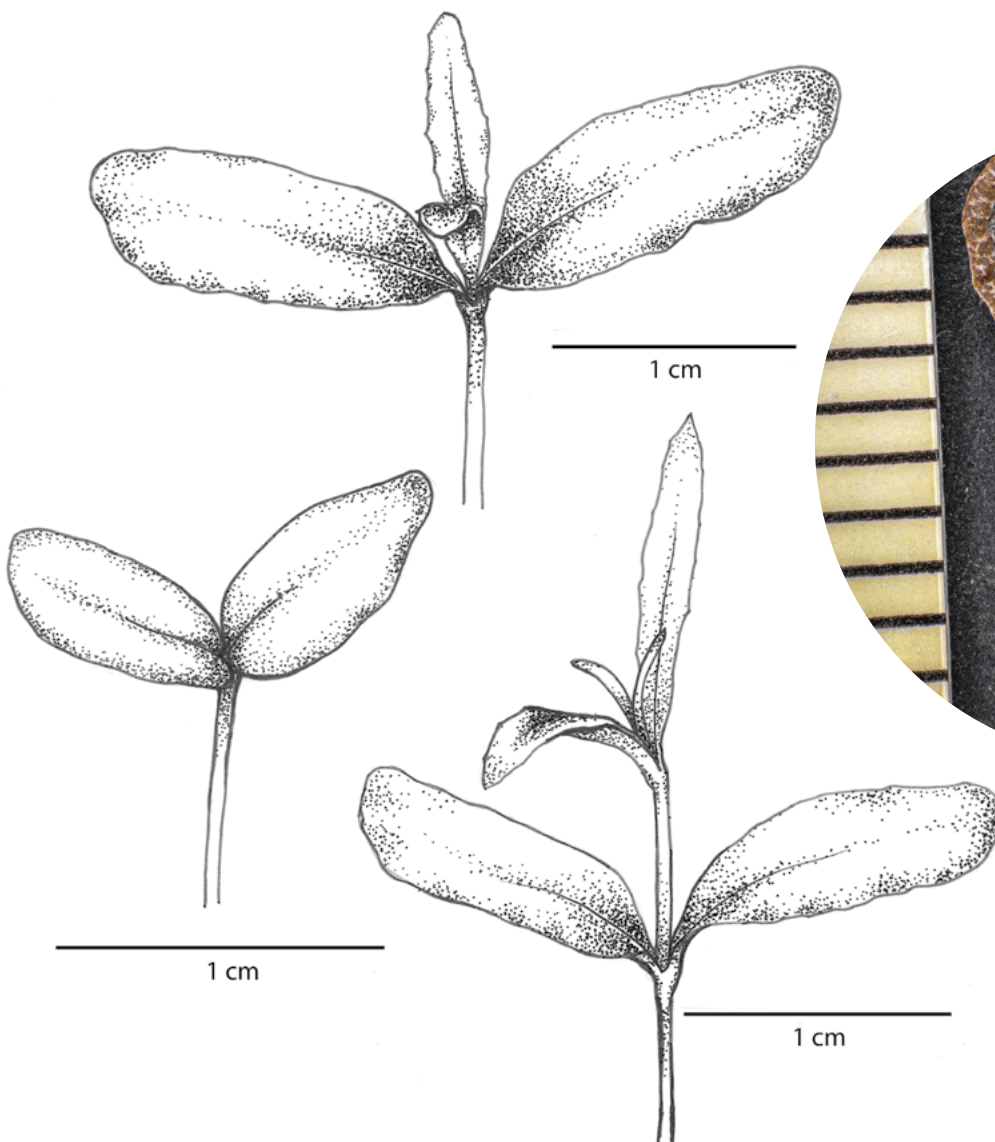
COMMON NAME: Rush milkweed

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Washes and roadsides in Sonoran and Mohave Desert scrub, especially on sandy plains and hummocks on either side of the Lower Colorado River, 50–1500 m

DISTRIBUTION: AZ, CA, NV



Asparagaceae (asparagus family)

Yucca brevifolia var. *jaegeriana*

McKelvey

COMMON NAME: Eastern Joshua tree

GROUP: Monocot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Deserts and chaparral, rocky or gravelly mountain slopes,
300–1200 m

DISTRIBUTION: AZ, CA, NV, UT



Asparagaceae (asparagus family)

Yucca schidigera

Roezl ex Ortgies

COMMON NAME: Mojave yucca

GROUP: Monocot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Deserts and chaparral, rocky or gravelly mountain slopes,
300–1200 m

DISTRIBUTION: AZ, CA, NV, UT



Asteraceae (sunflower family)

Ambrosia dumosa

(A. Gray) Payne

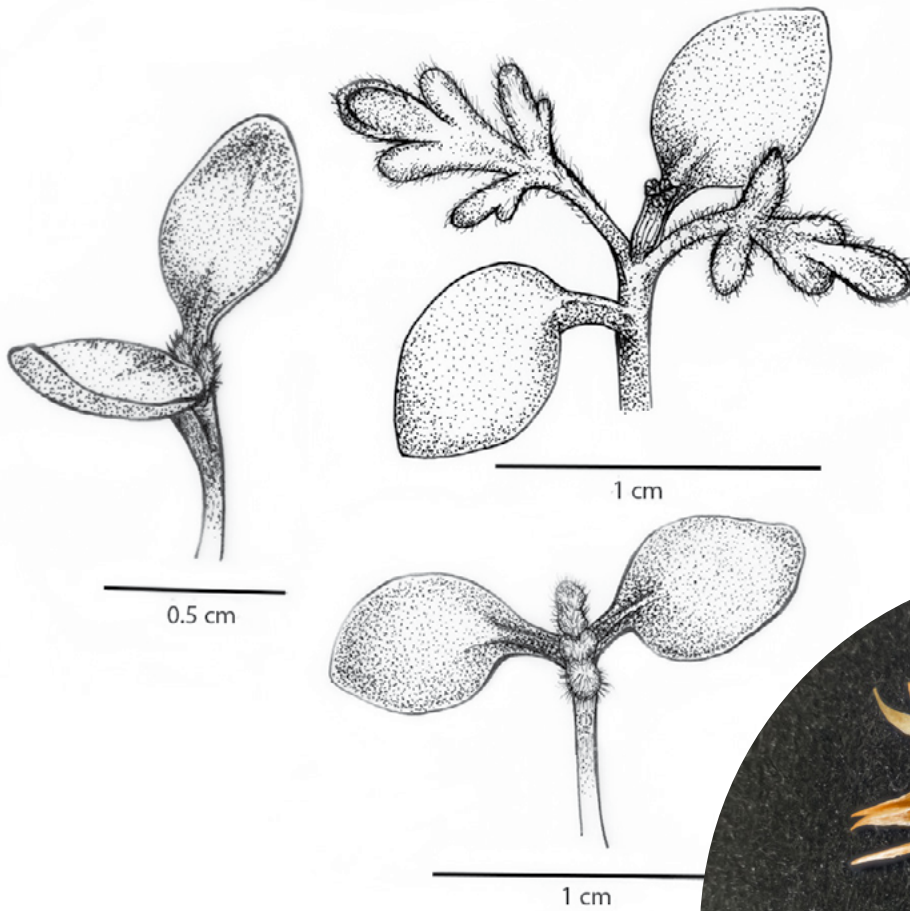
COMMON NAME: Hollyleaf bursage

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Sandy and gravelly washes, 700–1700 m

DISTRIBUTION: AZ, CA, NV, UT



Asteraceae (sunflower family)

Ambrosia eriocentra

(A. Gray) Payne

COMMON NAME: White bursage

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Subshrub

HABITAT: Rocky or sandy washes, benches, -80 to 1700 m

DISTRIBUTION: AZ, CA, NV, UT



2 cm



1 cm



Asteraceae (sunflower family)

Ambrosia salsola

(Torr. & A. Gray) Strother & B.G. Baldw.

var. *salsola*

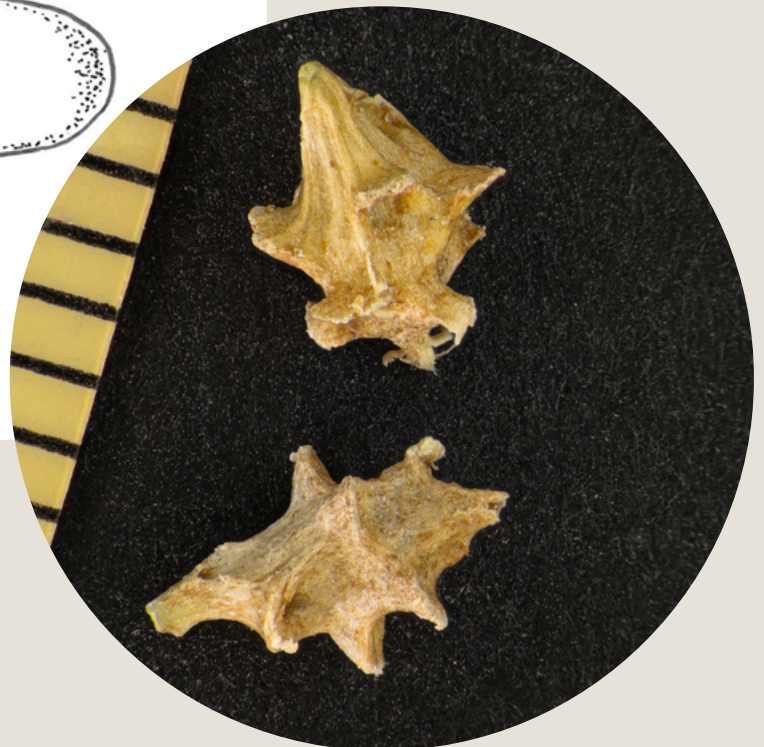
COMMON NAME: Cheesebush

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Subshrub

HABITAT: Desert washes, sandy and gravelly benches, lava talus,
200–1800 m

DISTRIBUTION: AZ, CA, NV, UT



Asteraceae (sunflower family)

Anisocoma acaulis

Torr. & A. Gray

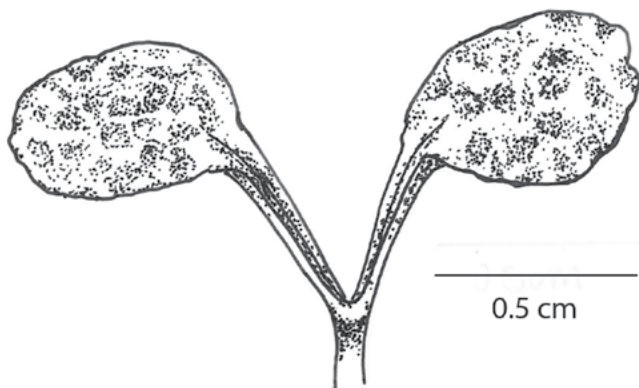
COMMON NAME: Scalebud

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Sandy washes, dry slopes, chaparral, pine-oak-juniper woodlands, montane coniferous forests, 20–2400 m

DISTRIBUTION: AZ, CA, NV



Asteraceae (sunflower family)

Baileya multiradiata

Harv. & A. Gray ex A. Gray

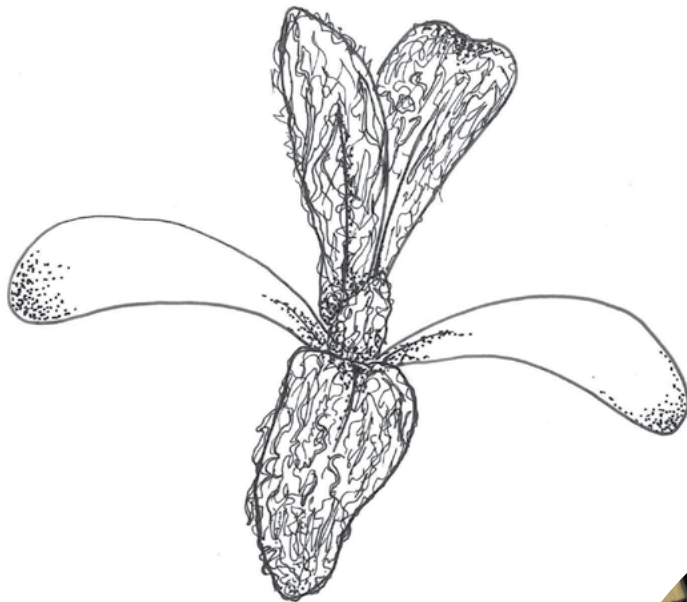
COMMON NAME: Desert marigold

GROUP: Dicot

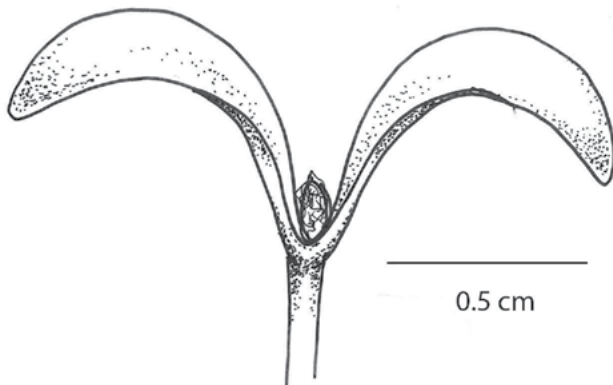
DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Arroyo bottoms, outwash slopes, sandy plains and roadsides, below 1500 m

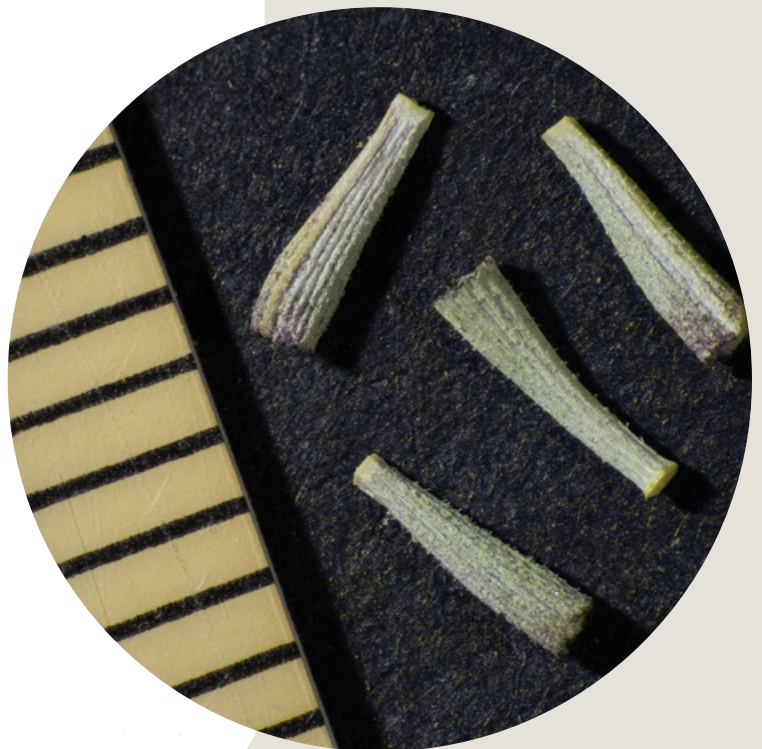
DISTRIBUTION: AZ, CA, NM, NV, TX, UT



1 cm



0.5 cm



Asteraceae (sunflower family)

Chaenactis fremontii

A. Gray

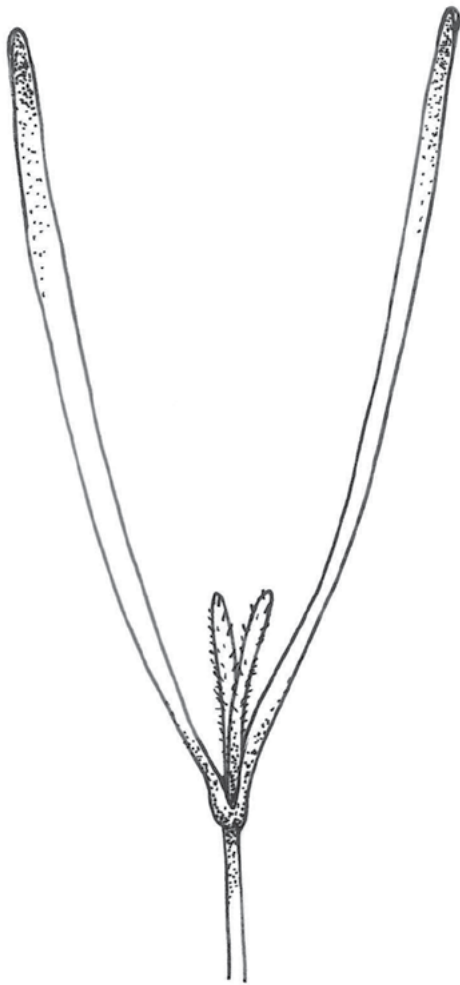
COMMON NAME: Fremont pincushion

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy or gravelly soils, in warm deserts, often growing through shrubs, below 1700 m

DISTRIBUTION: AZ, CA, NV, UT



Asteraceae (sunflower family)

Encelia farinosa

A. Gray ex Torr.

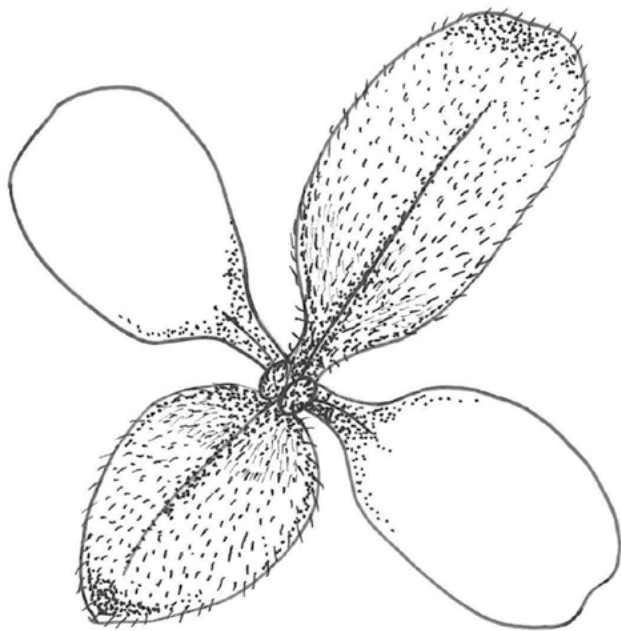
COMMON NAME: Brittlebush

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub/Subshrub

HABITAT: Dry, rocky or gravelly slopes, below 900 m

DISTRIBUTION: AZ, CA, NV, UT



Asteraceae (sunflower family)

Encelia virginensis

A. Nelson

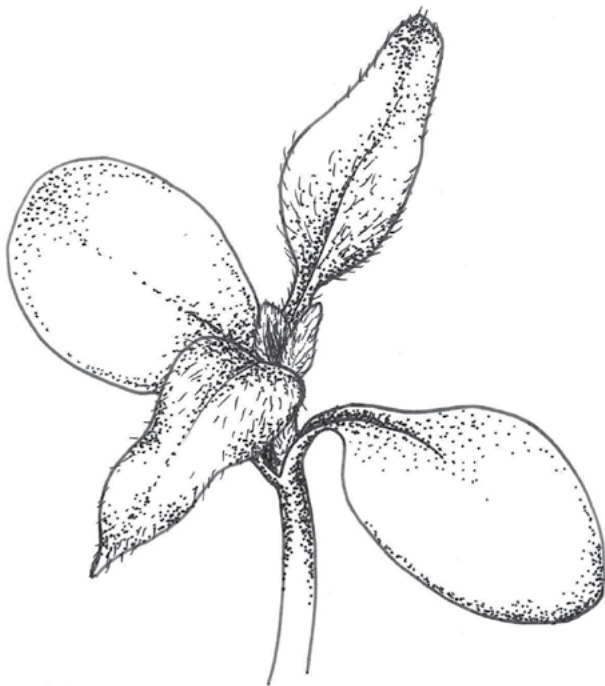
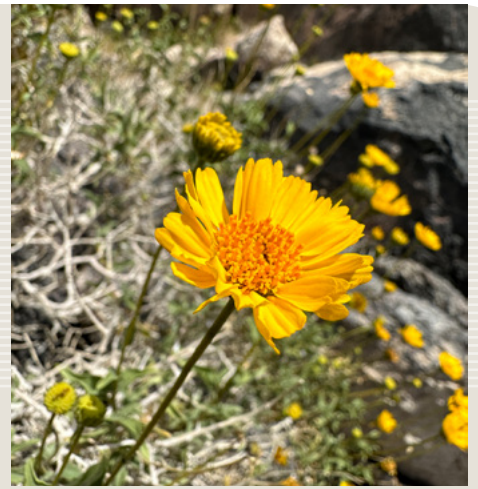
COMMON NAME: Virgin River brittlebush

GROUP: Dicot

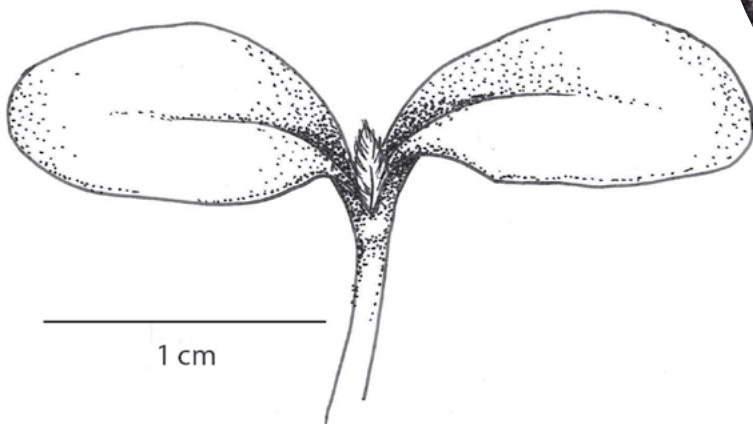
DURATION/GROWTH HABIT: Perennial Shrub/Subshrub

HABITAT: Flats, along washes, and on slopes, 300–1200 m

DISTRIBUTION: AZ, CA, NM, NV, UT



2 cm



1 cm



Asteraceae (sunflower family)

Ericameria cooperi

(A. Gray) H.M. Hall

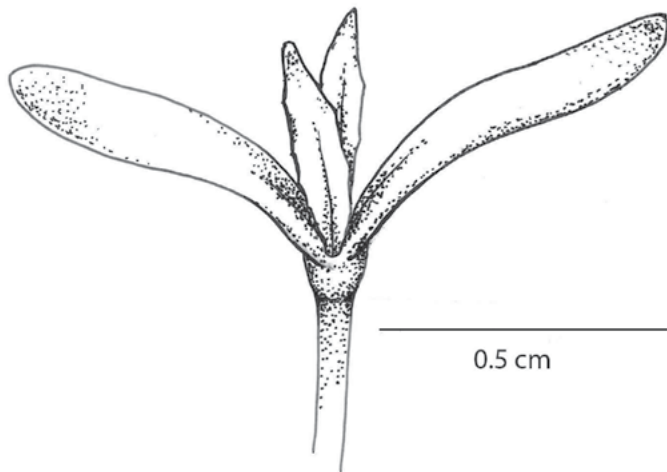
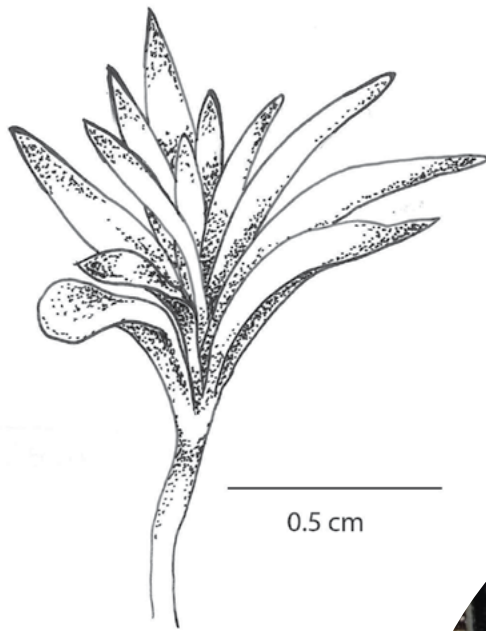
COMMON NAME: Cooper's goldenbush

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Rocky slopes, valleys, in creosote-bush scrub, Joshua-tree woodland, 300–2000 m

DISTRIBUTION: CA, NV



Asteraceae (sunflower family)

Gutierrezia microcephala

(DC.) A. Gray

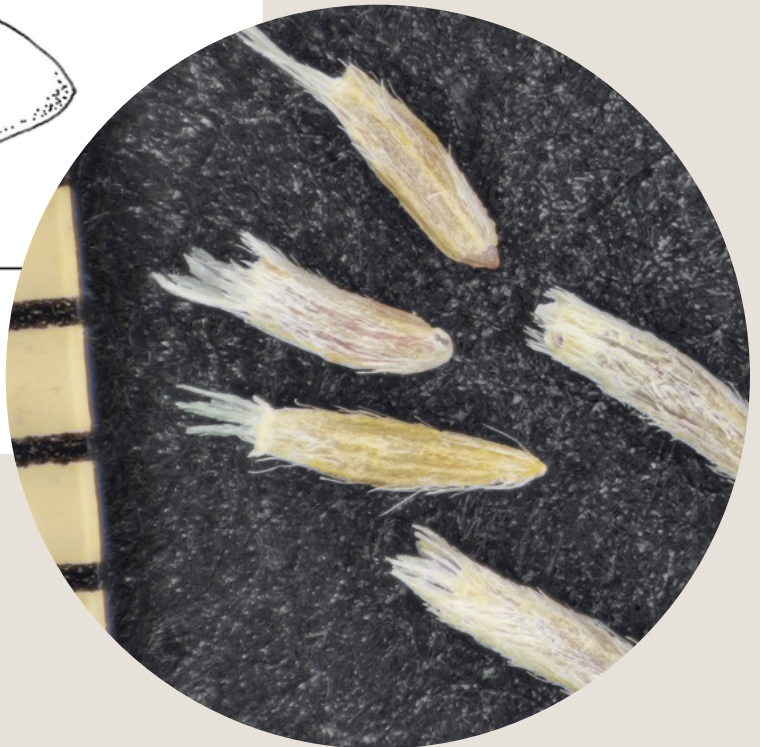
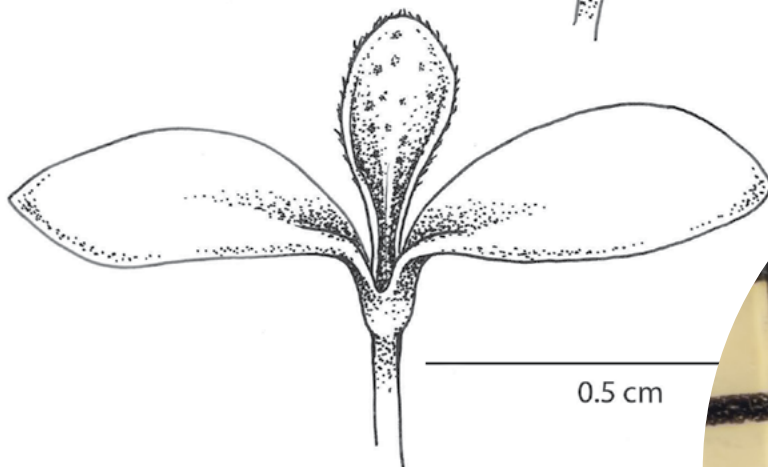
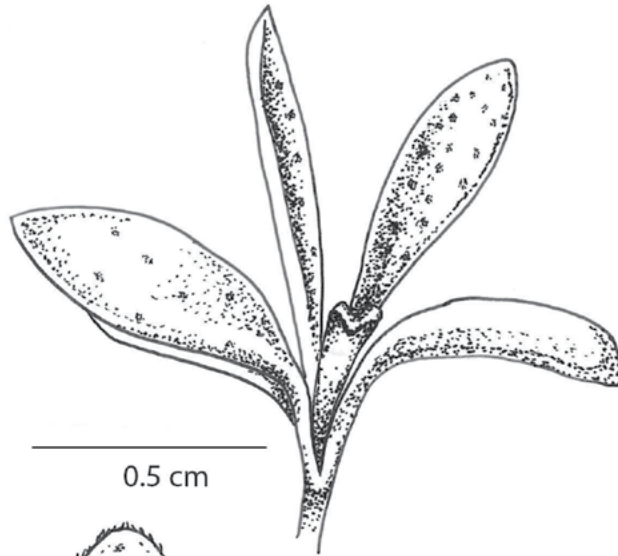
COMMON NAME: Threadleaf snakeweed

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub/Subshrub

HABITAT: Dry, open, often disturbed/overgrazed areas, 300–2150 m

DISTRIBUTION: AZ, CA, CO, NM, NV, TX, UT



Asteraceae (sunflower family)

Malacothrix glabrata

(A. Gray ex D. C. Eaton) A. Gray

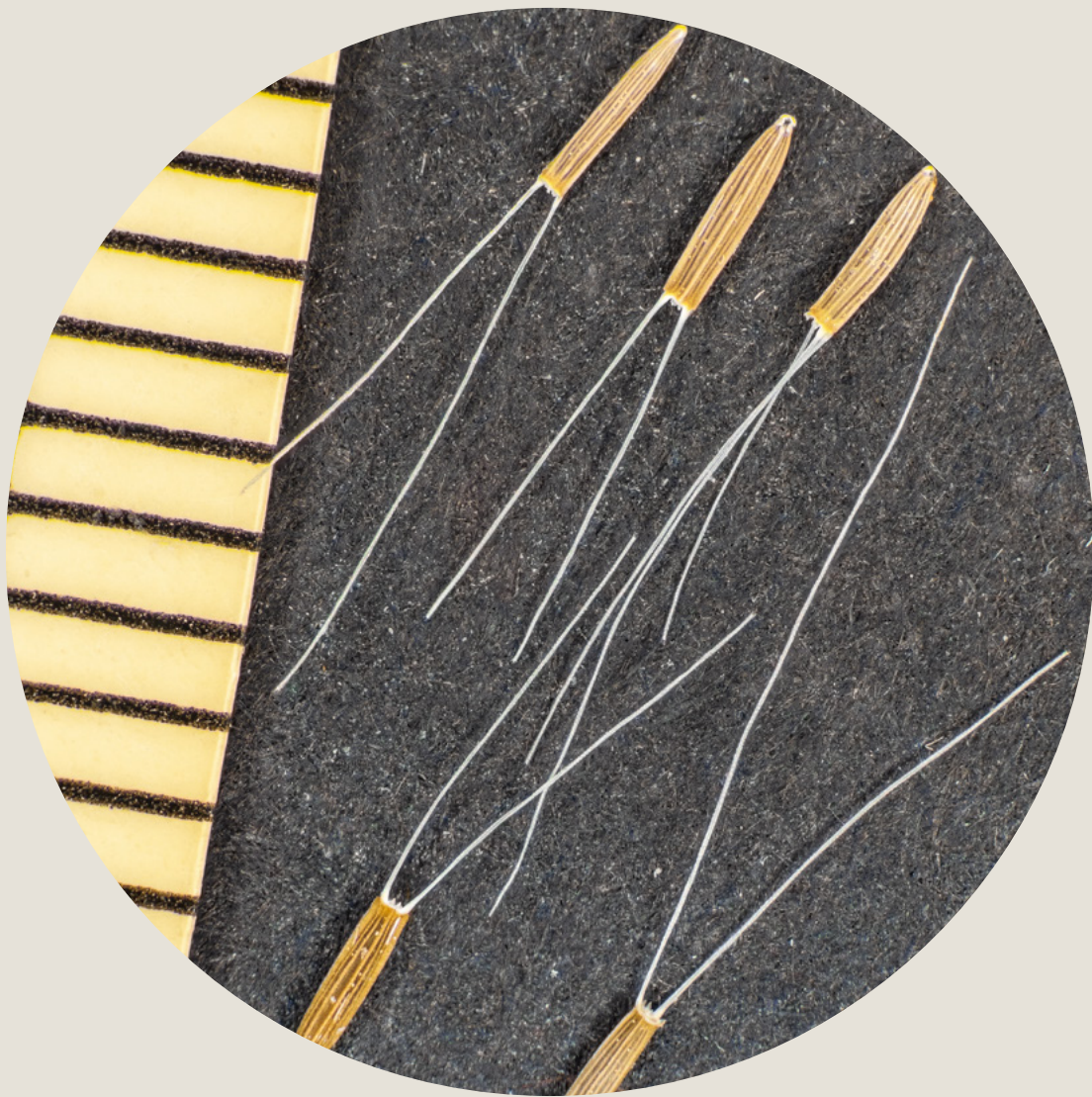
COMMON NAME: Desert dandelion

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy and gravelly plains, rocky hillsides and mesas, below 2150 m

DISTRIBUTION: AZ, CA, ID, NM, NV, OR, UT



Asteraceae (sunflower family)

Pectis papposa

Harv. & A. Gray

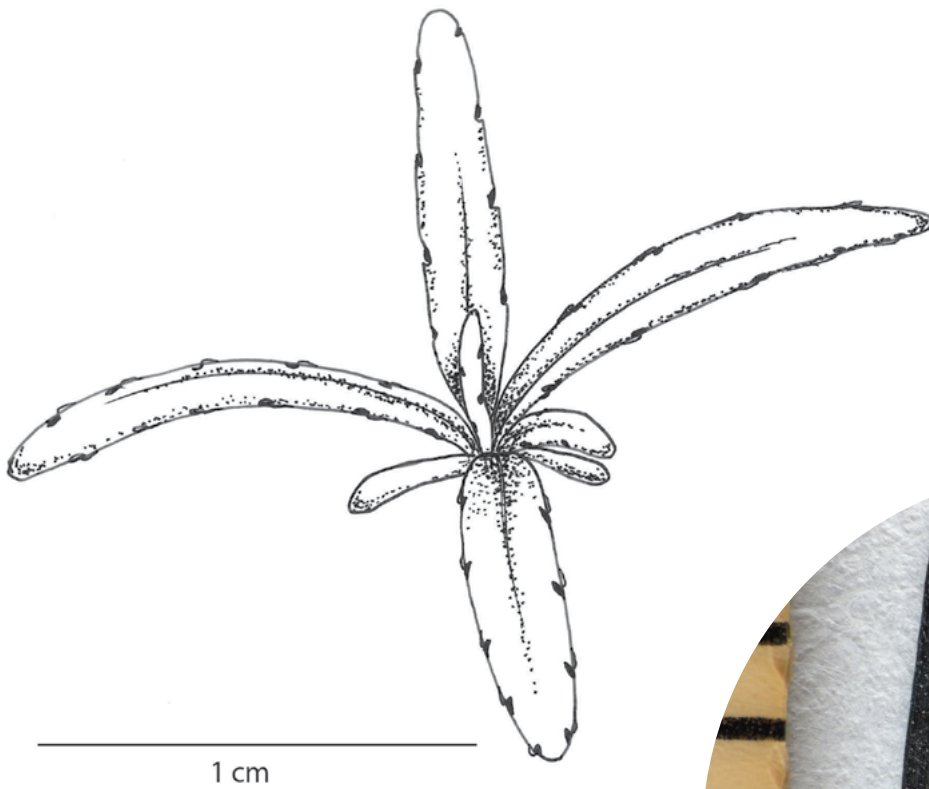
COMMON NAME: Chinchweed

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy or gravelly soils, plains and mesas, below 1850 m

DISTRIBUTION: AZ, CA, NM, NV, TX, UT



Asteraceae (sunflower family)

Stephanomeria exigua

Nutt.

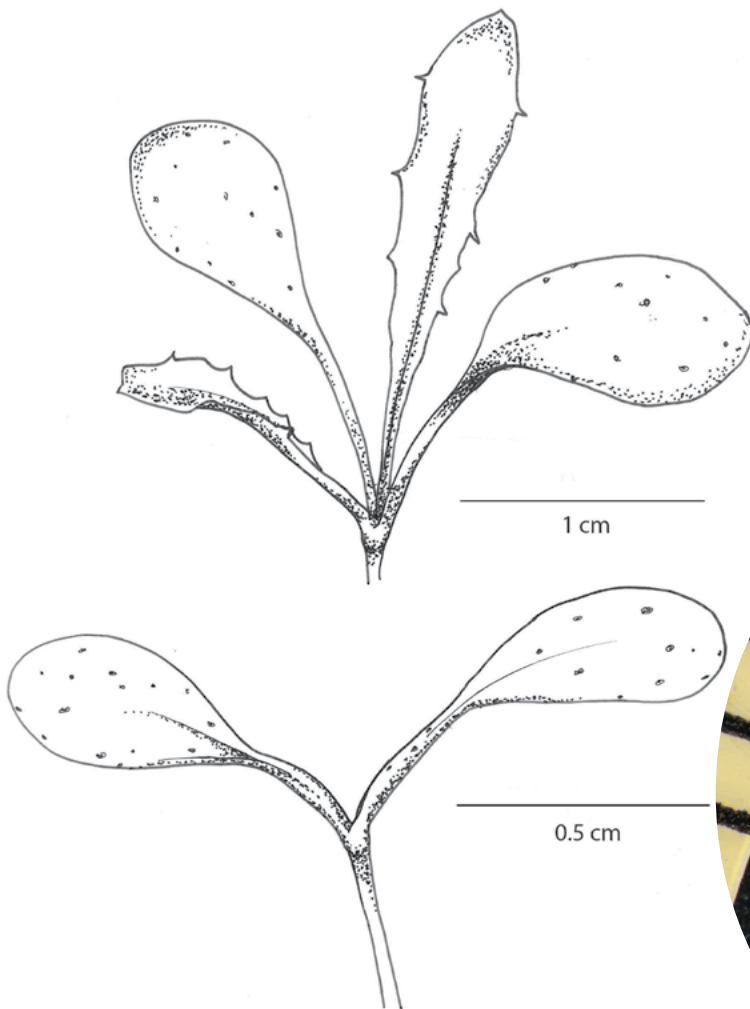
COMMON NAME: Small wirelettuce

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Plains, mesas, hillsides, desert scrub, dry disturbed ground, and among shrubs, 600–2450 m

DISTRIBUTION: AZ, CA, CO, ID, NM, NV, NY, OR, TX, UT, WY



Asteraceae (sunflower family)

Stephanomeria pauciflora

(Torr.) A. Nelson

COMMON NAME: Brownplume wirelettuce

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Found along washes, on gravelly bajadas, plains, and arid mesas, below 2150 m

DISTRIBUTION: AZ, CA, CO, KS, NM, NV, OK, TX, UT, WY



Asteraceae (sunflower family)

Xylorhiza tortifolia

(Torr. & A. Gray) Greene

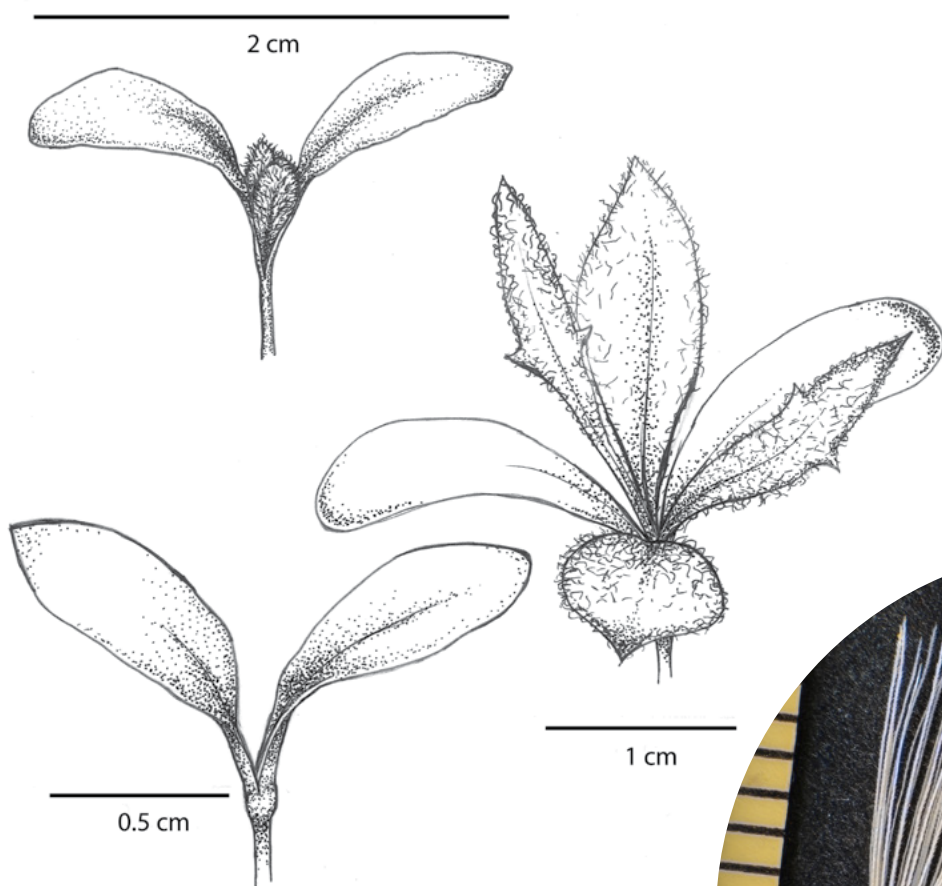
COMMON NAME: Mojave aster

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Sandy or gravelly slopes and flats, often over clay, alkaline, barren areas, in creosote bush, sagebrush, shadscale, blackbrush, and juniper communities, below 2000 m

DISTRIBUTION: AZ, CA, NV, UT



Bignoniaceae
(trumpet creeper family)

Chilopsis linearis

(Cav.) Sweet

ssp. arcuata

(Fosberg) Henrickson

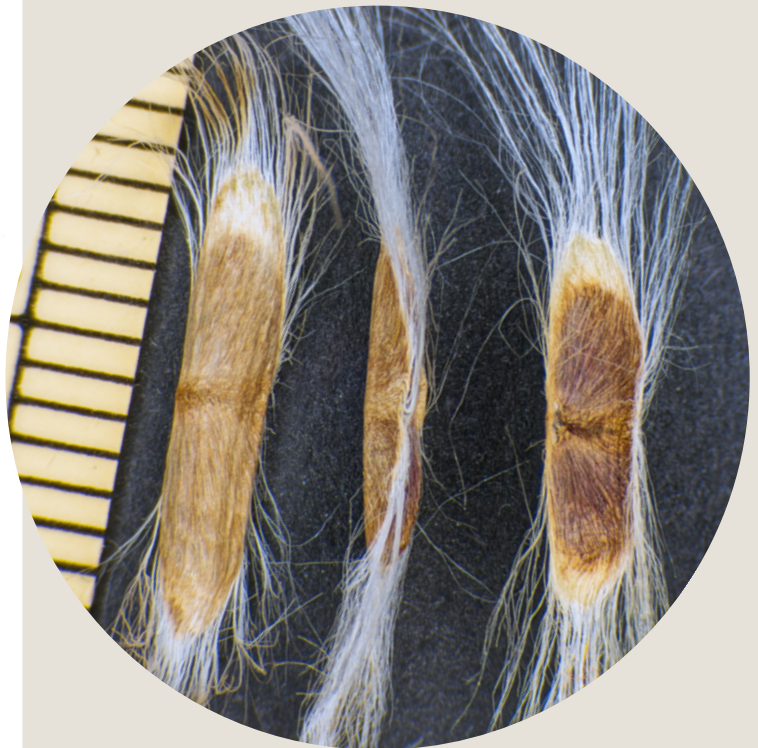
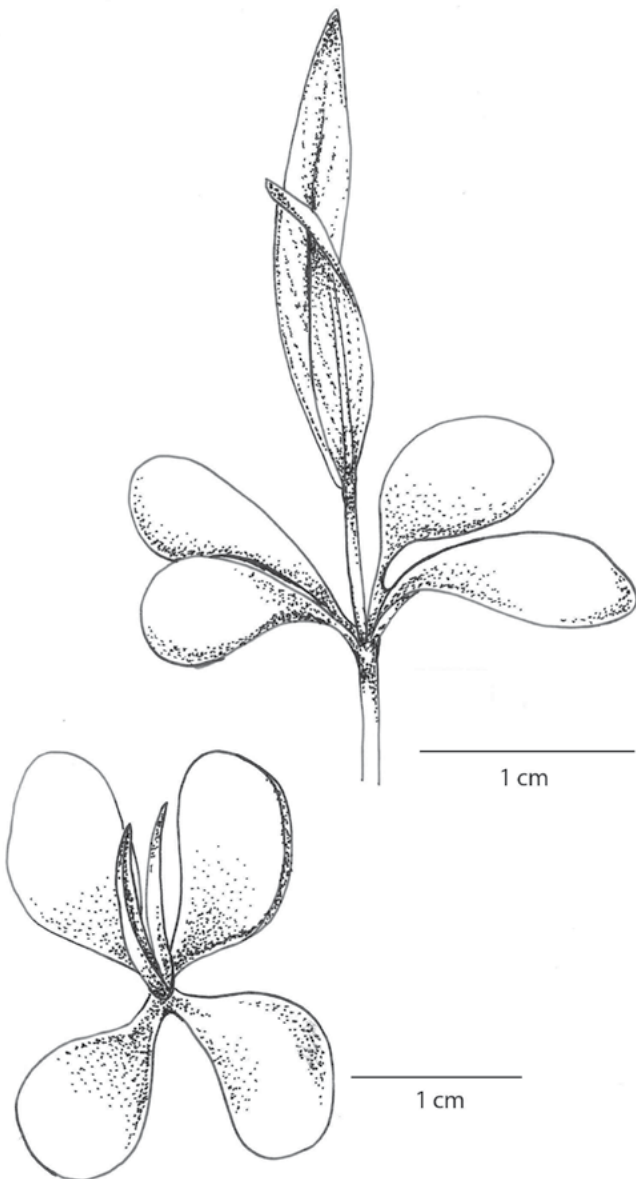
COMMON NAME: Desert willow

GROUP: Dicot

DURATION/GROWTH HABIT: Tree

HABITAT: Dry washes and on the high terraces of river floodplains in the low deserts and foothills, below 1750 m

DISTRIBUTION: AZ, CA, KS, NM, NV, OK, TX, UT



Boraginaceae (forget-me-not family)

Amsinckia tessellata

A. Gray

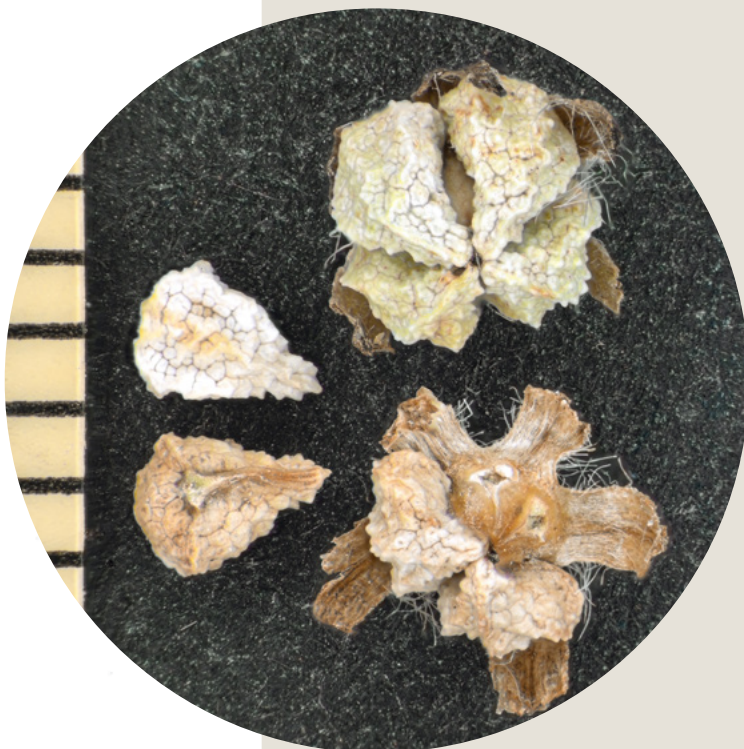
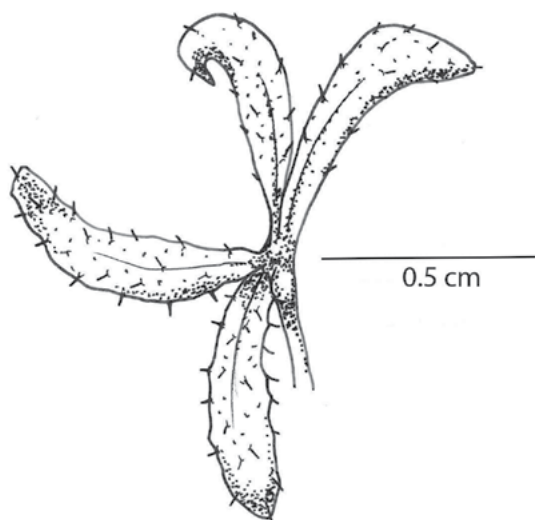
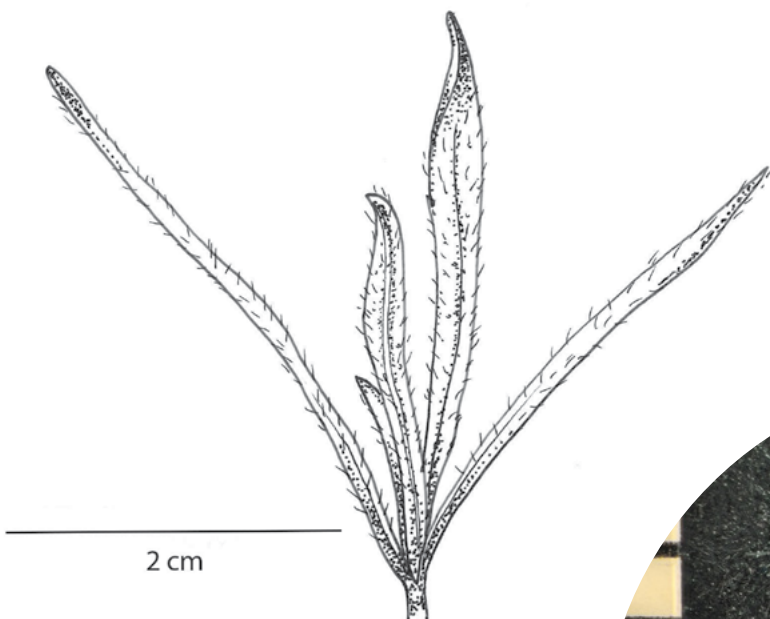
COMMON NAME: Bristly fiddleneck

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Grassy slopes, valley floors, rocky to gravelly soil, slopes, flats, and arroyo beds, below 1500 m

DISTRIBUTION: AZ, CA, ID, MO, NM, NV, OR, UT, WA



Boraginaceae
(forget-me-not family)

Eremocarya micrantha* var. *micrantha

(Torr.) Greene

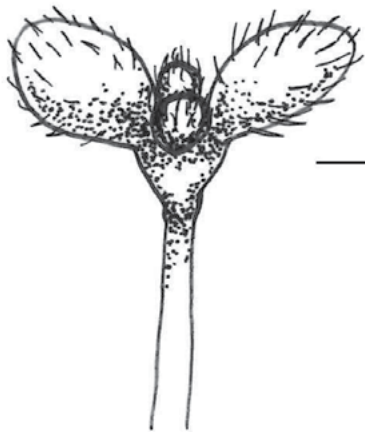
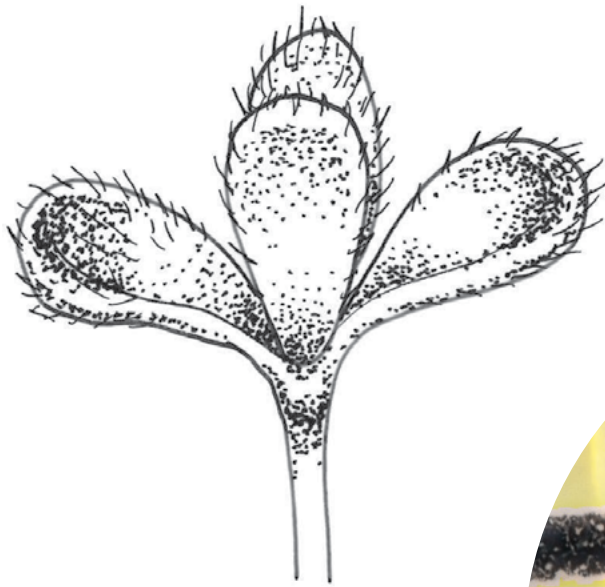
COMMON NAME: Redroot cryptantha

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy soil, often in creosote shrubland, 2150 m

DISTRIBUTION: AZ, CA, NM, NV, OR, TX, UT



Brassicaceae (mustard family)

Descurainia pinnata

(Walter) Britton

COMMON NAME: Western tansymustard

GROUP: Dicot

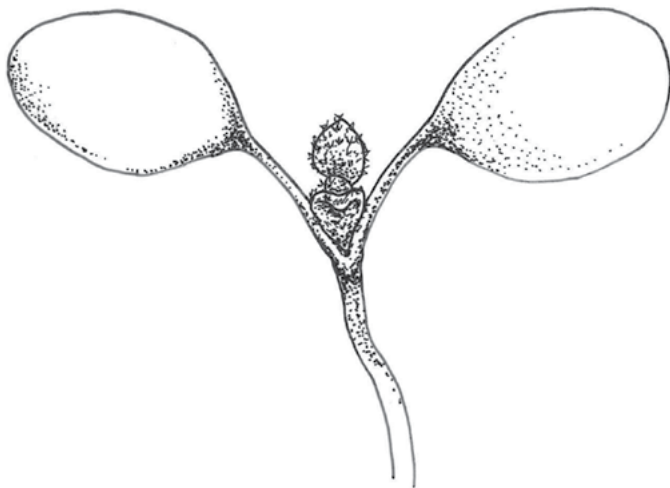
DURATION/GROWTH HABIT: Annual Forb

HABITAT: Variety of soils and conditions, below 2450 m

DISTRIBUTION: Throughout North America



1 cm



0.5 cm



Brassicaceae (mustard family)

Lepidium fremontii

S. Watson

COMMON NAME: Desert pepperweed

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub/Subshrub

HABITAT: Dry sandy or gravelly soils in desert shrub communities, plains and mesas, pinon-juniper woodlands, washes, deserts, barren knolls, bluffs, roadsides, steep limestone outcrops, rocky ledges and slopes, 450–2150 m

DISTRIBUTION: AZ, CA, NV, UT



Brassicaceae (mustard family)

Lepidium lasiocarpum

Nutt.

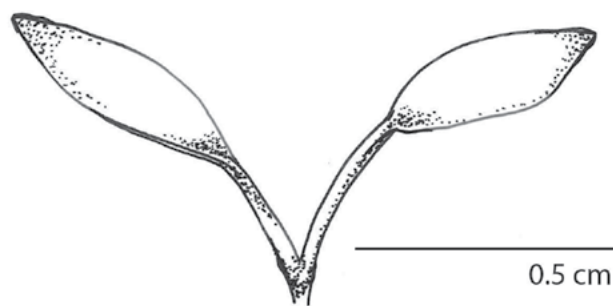
COMMON NAME: Shaggyfruit pepperweed

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Playas, washes, arroyos, beaches, saline soils, roadsides and other disturbed areas, below 2000 m

DISTRIBUTION: AZ, CA, CO, NM, NV, SC, TX, UT



Cactaceae (cactus family)

Echinocereus engelmannii

(Parry ex Engelm.) Lem.

COMMON NAME: Engelmann's hedgehog cactus

GROUP: Dicot

DURATION/GROWTH HABIT: Shrub

HABITAT: Gravelly, sandy, or rocky soils, 600–1500 m

DISTRIBUTION: AZ, CA, NV, UT



Cactaceae (cactus family)

Opuntia phaeacantha

Engelm.

COMMON NAME: Tulip prickly pear

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Deserts, chaparral, surrounding mountains, plains, sandy to rocky soils, 200–2100 m

DISTRIBUTION: AZ, CA, CO, KS, NM, NV, OK, SD, TX, UT



Cleomaceae (spiderflower family)

Peritoma arborea

(Nutt.) H.H. Iltis

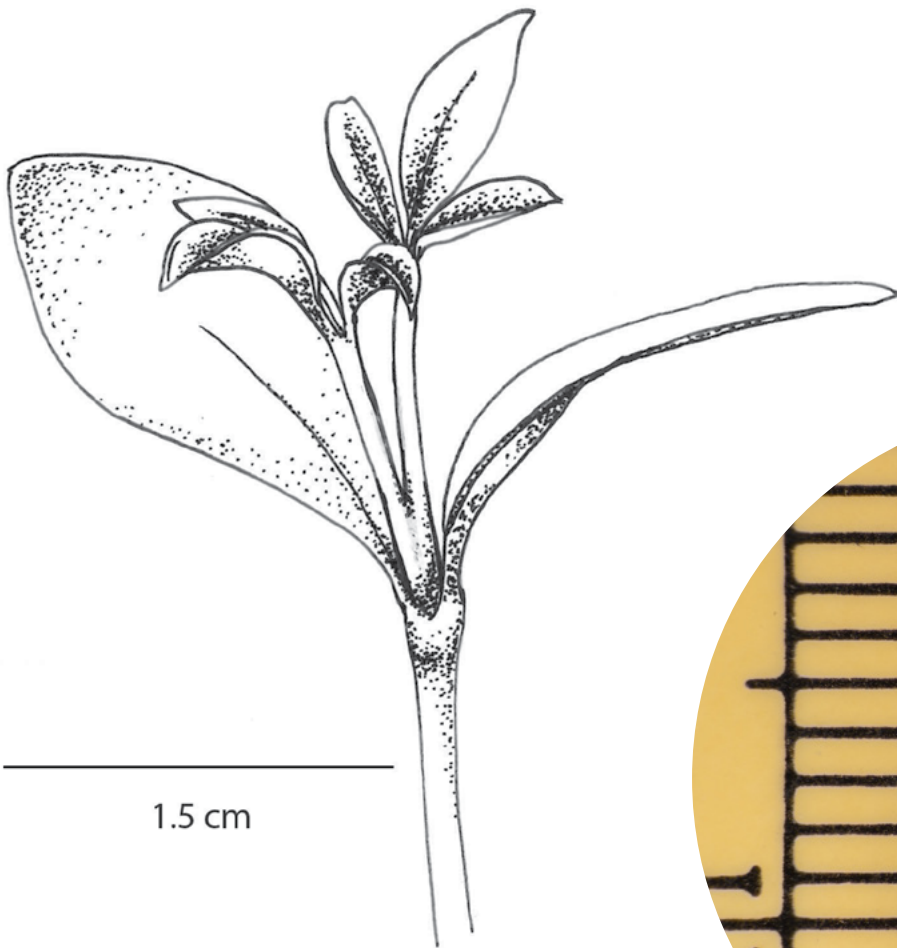
COMMON NAME: Bladderpod

GROUP: Dicot

DURATION/GROWTH HABIT: Shrub

HABITAT: Coastal bluffs, hills, desert washes and flats, 0–1300 m

DISTRIBUTION: AZ, CA



Cleomaceae (spiderflower family)

Oxystylis lutea

Torr. & Frém.

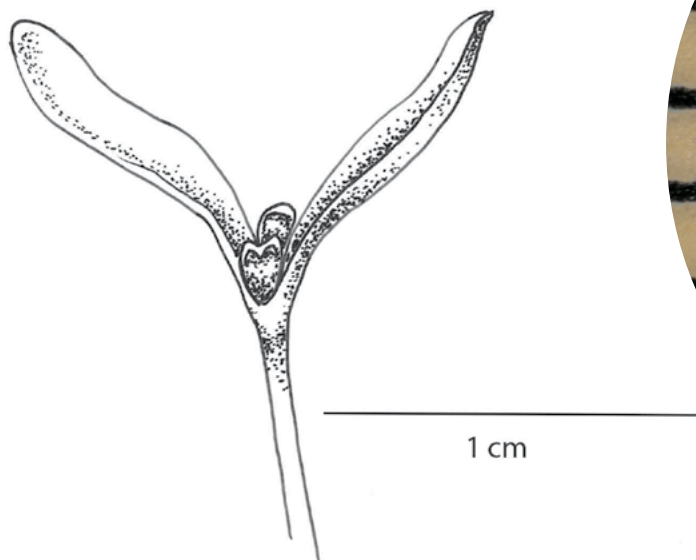
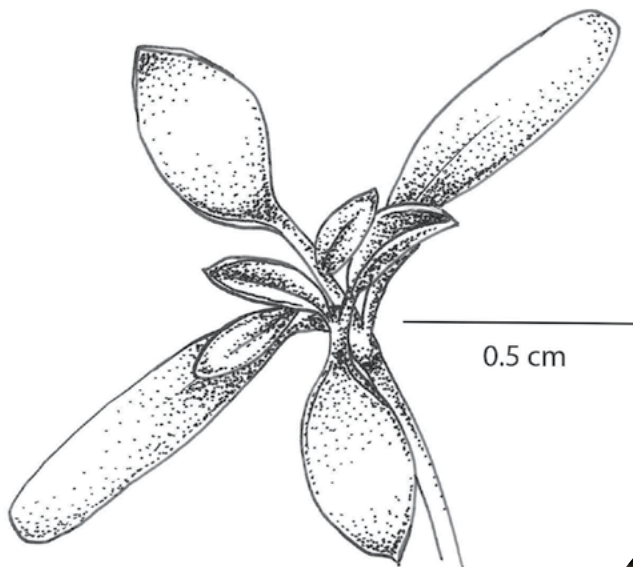
COMMON NAME: Spiny caper

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Dry, sandy, gravelly desert flats, scrub, 1200–1600 m

DISTRIBUTION: CA, NV



Ephedraceae (Mormon-tea family)

Ephedra nevadensis

S. Watson

COMMON NAME: Nevada Mormon-tea

GROUP: Gymnosperm

DURATION/GROWTH HABIT: Shrub

HABITAT: Dry, rocky slopes and hills, rarely in sandy flat areas,
700–1900 m

DISTRIBUTION: AZ, CA, CO, NV, OR, UT



Euphorbiaceae (spurge family)

Euphorbia micromera

Boiss.

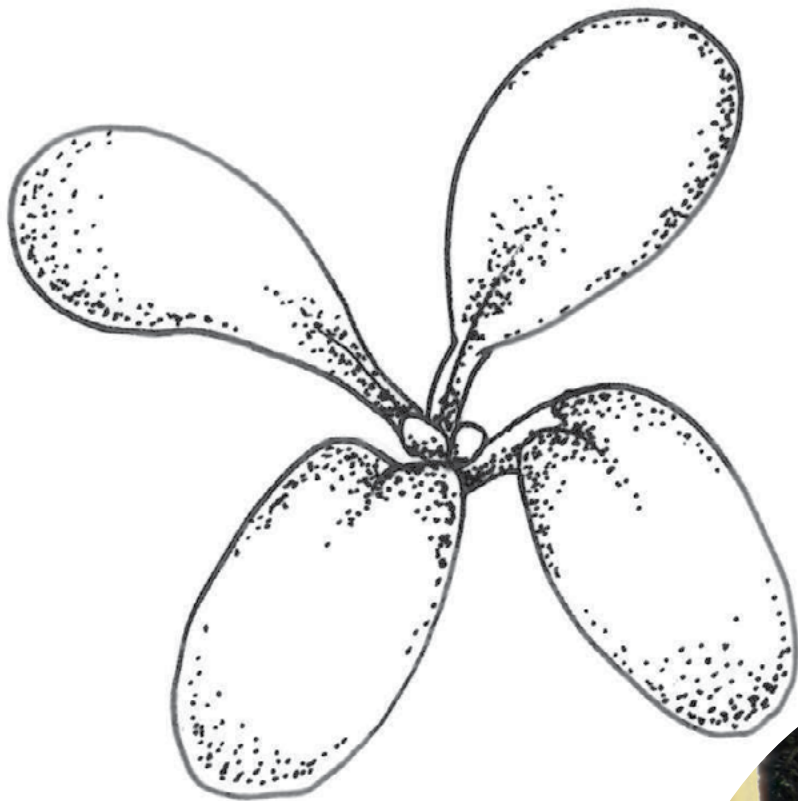
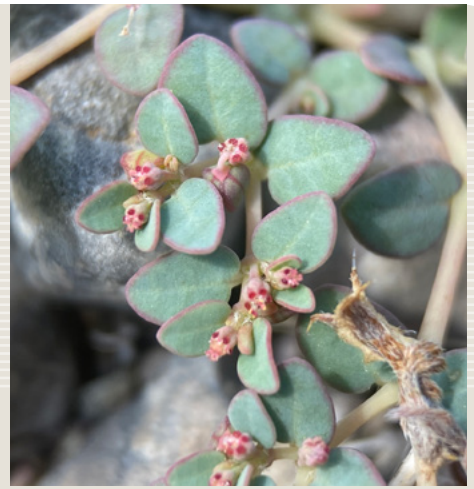
COMMON NAME: Sonoran sandmat

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Flats, washes, bajadas, and hillsides, 150–1500 m

DISTRIBUTION: AZ, CA, NM, NV, TX, UT



0.5 cm



Euphorbiaceae (spurge family)

Euphorbia polycarpa

Benth.

COMMON NAME: Smallseed sandmat

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Desert slopes and washes, 150–900 m

DISTRIBUTION: AZ, CA, NV



Fabaceae (legume family)

Acmispon brachycarpus

Greene

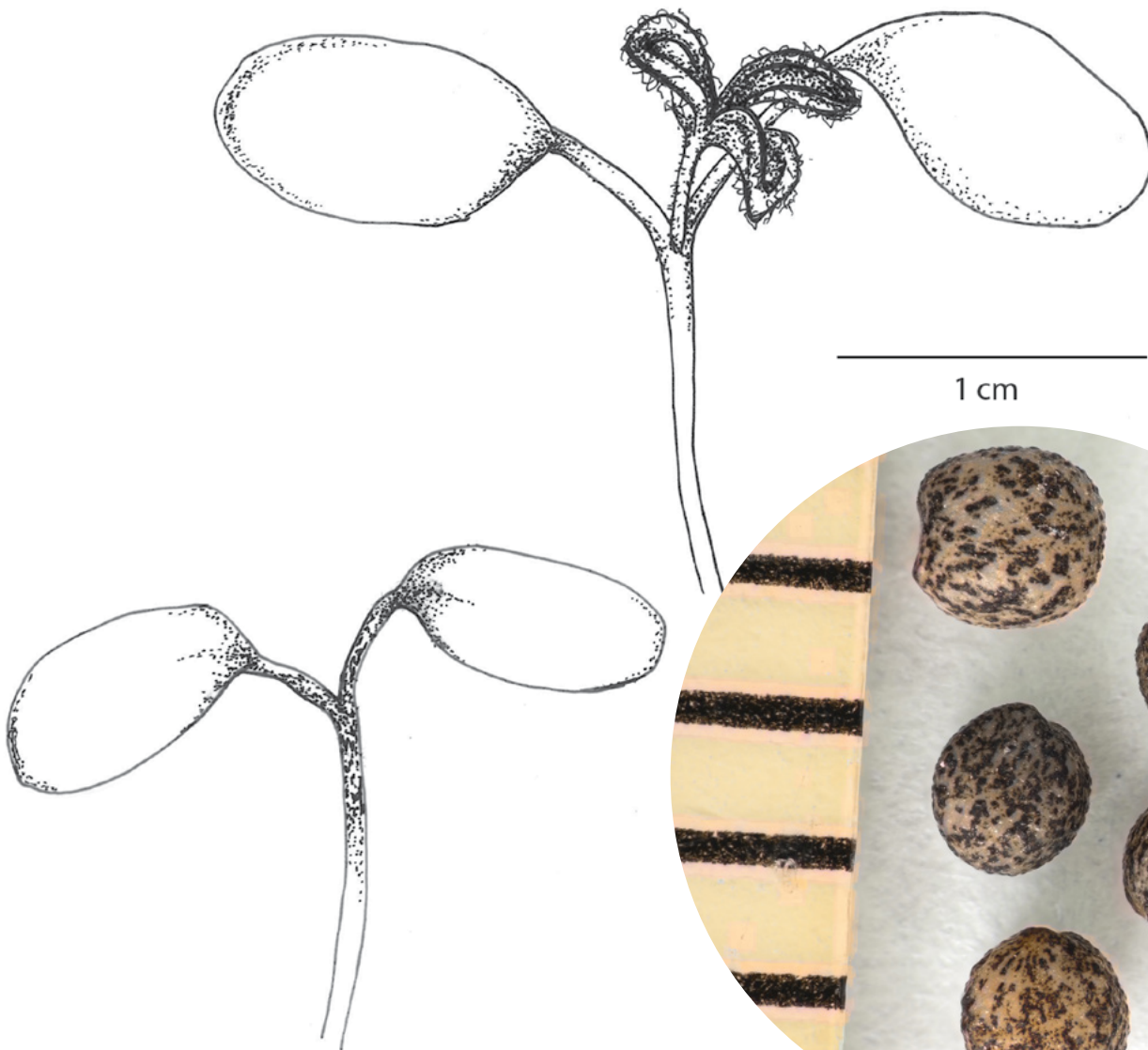
COMMON NAME: Foothill deervetch

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Grassland, oak and pine woodland, desert flats and mountains, roadsides, below 1700 m

DISTRIBUTION: AZ, CA, NM, NV, OR, TX, UT



Fabaceae (legume family)

Acmispon rigidus

(Benth.) Brouillet

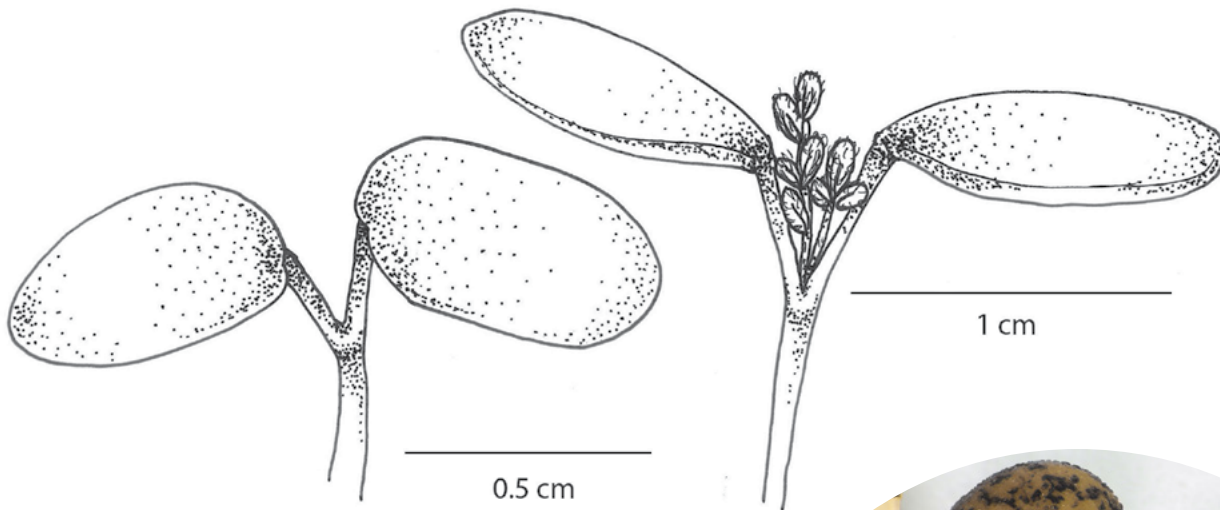
COMMON NAME: Shrubby deervetch

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Sandy, gravelly, or clayey soils often along washes and on rocky hillsides, below 1700 m

DISTRIBUTION: AZ, CA, NV, UT



Fabaceae (legume family)

Acmispon strigosus

(Nutt.) Brouillet

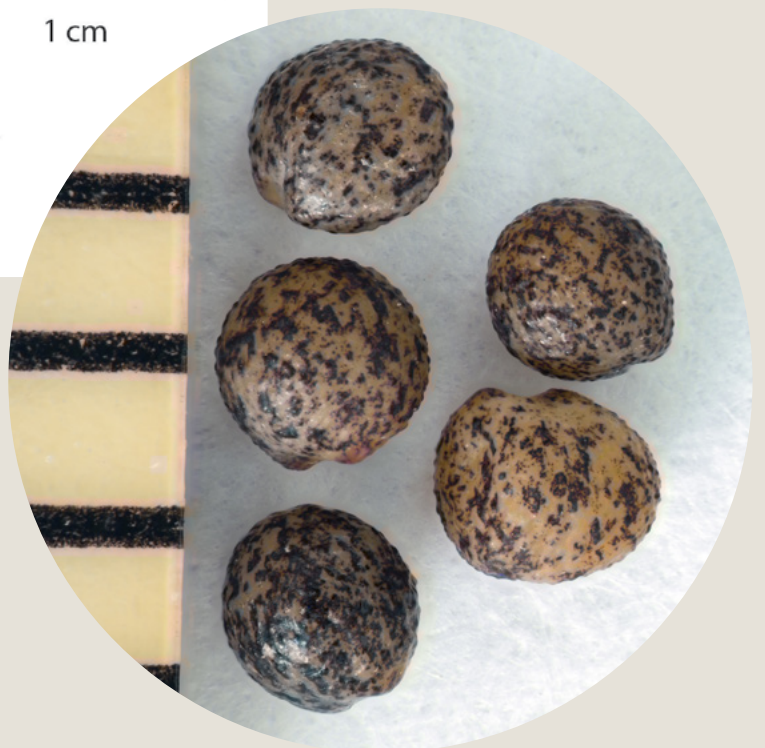
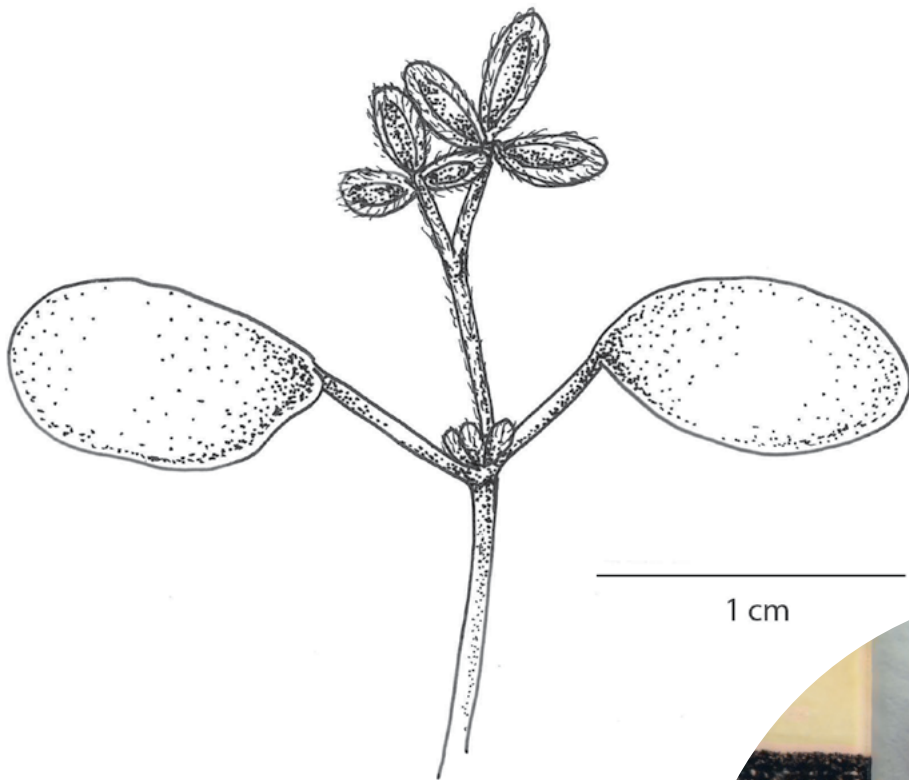
COMMON NAME: Strigose bird's-foot trefoil

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy or gravelly soil, below 900 m

DISTRIBUTION: AZ, CA, NV



Fabaceae (legume family)

Astragalus didymocarpus

Hook. & Arn.

var. *didymocarpus*

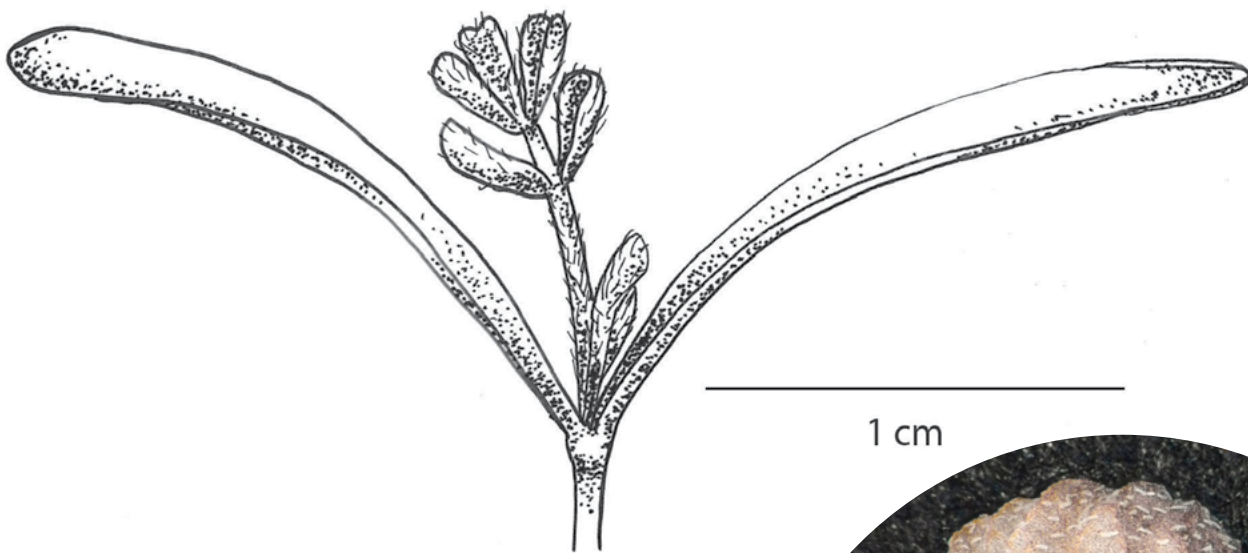
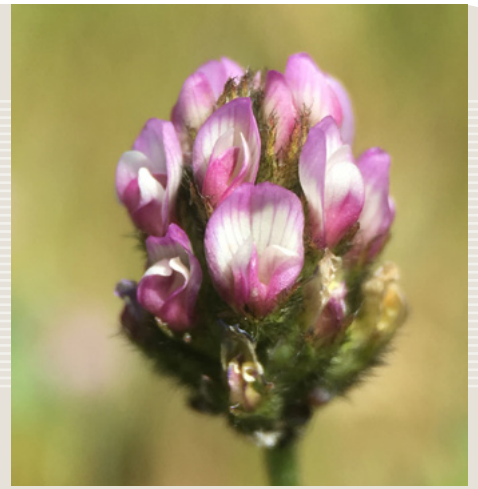
COMMON NAME: Two seeded milkvetch

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Grassland, creosote bush and Joshua tree woodland,
below 1350 m

DISTRIBUTION: CA, NV



Fabaceae (legume family)

Astragalus didymocarpus

Hook. & Arn.

var. *dispermus*

(A. Gray) Jeps.

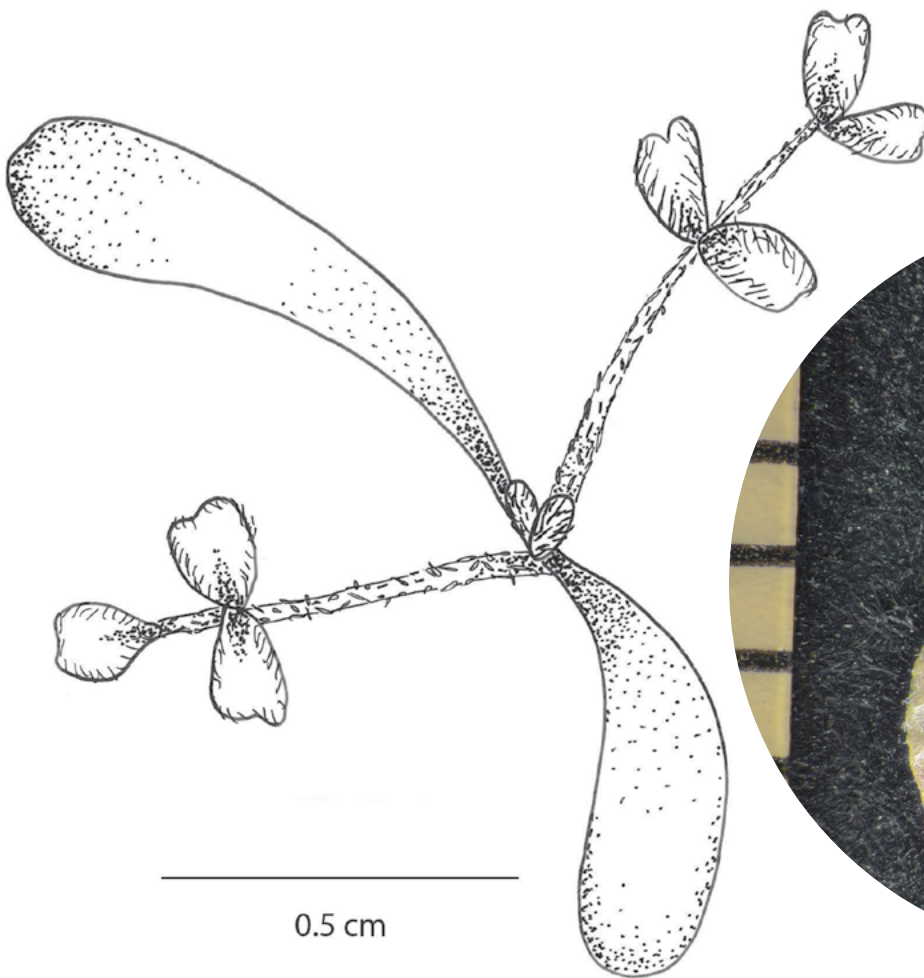
COMMON NAME: Dwarf white milkvetch

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy flats, creosote bush scrub, deserts, below 900 m

DISTRIBUTION: AZ, CA, NV



Fabaceae (legume family)

Astragalus layneae

Greene

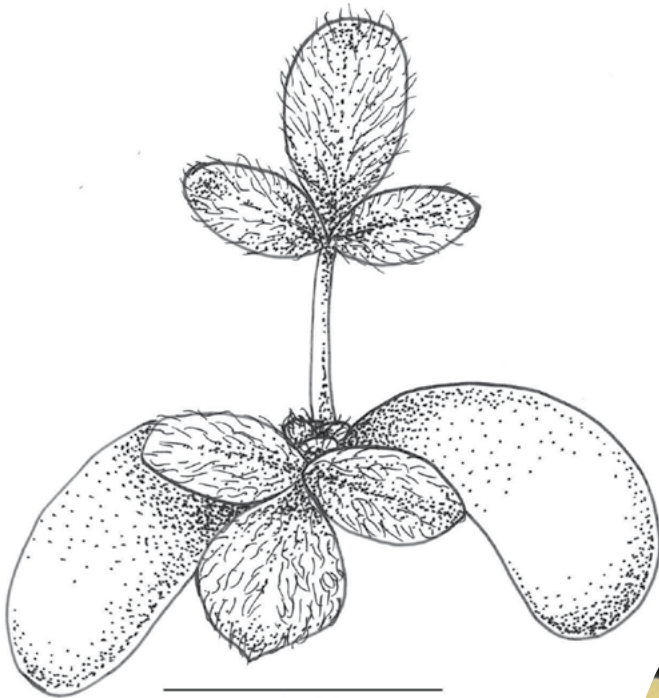
COMMON NAME: Widow's milkvetch

GROUP: Dicot

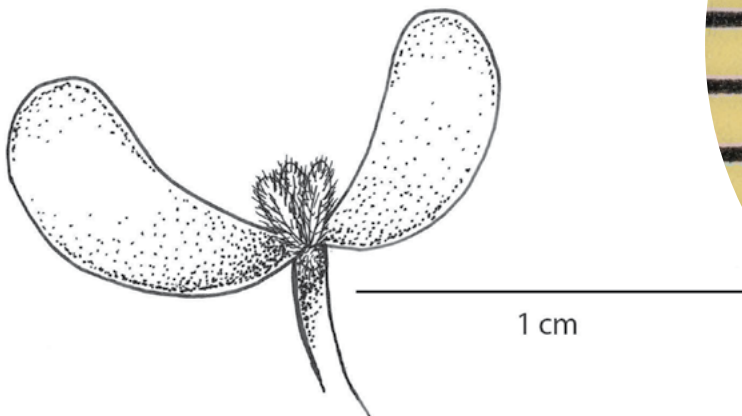
DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Sandy flats, washes, 450–1550 m

DISTRIBUTION: AZ, CA, NV



1 cm



1 cm



Fabaceae (legume family)

Lupinus arizonicus

(S. Watson) S. Watson

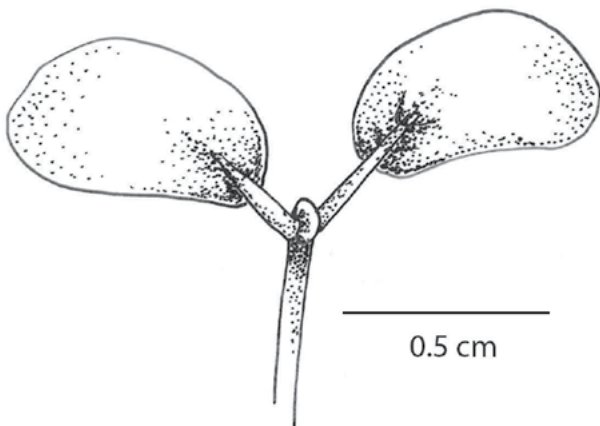
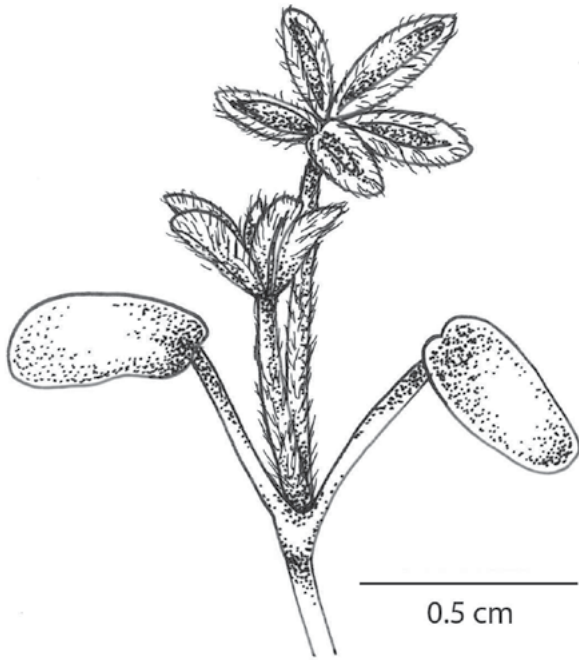
COMMON NAME: Arizona lupine

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy soils along washes, below 900 m

DISTRIBUTION: AZ, CA, NV



Fabaceae (legume family)

Prosopis glandulosa

Torr.

COMMON NAME: Honey mesquite

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub/Tree

HABITAT: Common in bottomlands and washes, on heavy soils in uplands and coarse soils of sandy flats. Grows into a tree in bottomlands but remains a shrub in the uplands. Below 1500 m

DISTRIBUTION: AZ, CA, CO, KS, NM, NV, OK, TX, UT



2 cm



Fabaceae (legume family)

Prosopis pubescens

Benth.

COMMON NAME: Screwbean mesquite

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Washes, alkali springs, and canyons, below 750 m

DISTRIBUTION: AZ, CA, NM, NV, TX, UT



3 cm



Fabaceae (legume family)

Psoralea fremontii

(Torr. ex A. Gray) Barneby

COMMON NAME: Fremont's dalea

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Sandy or rocky soils derived from granite and sandstone of washes, banks, and debris fans, 350–1000 m

DISTRIBUTION: AZ, CA, NV, UT



0.5 cm



Fabaceae (legume family)

Senna armata

(S. Watson) Irwin & Barneby

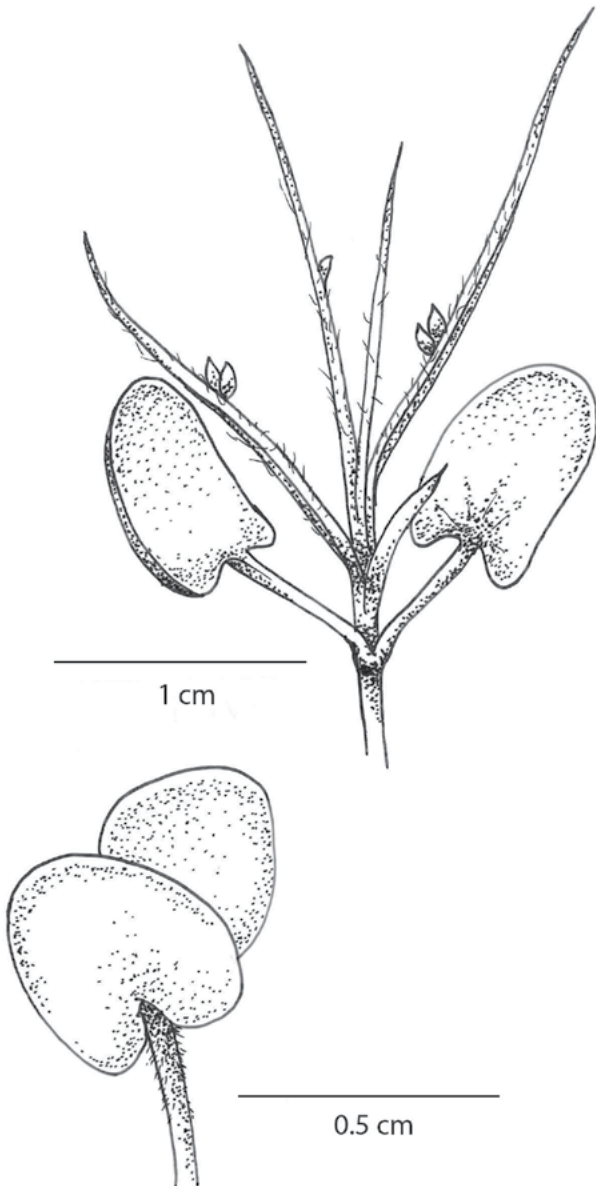
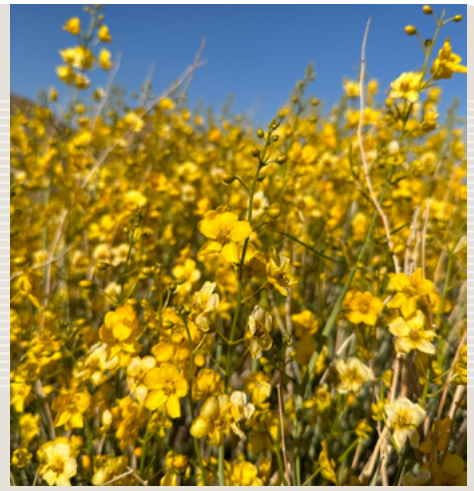
COMMON NAME: Desert senna

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Sandy or gravelly washes, 200–1000 m

DISTRIBUTION: AZ, CA, NV



Hydrophyllaceae (waterleaf family)

Phacelia crenulata

Torr. ex S. Watson

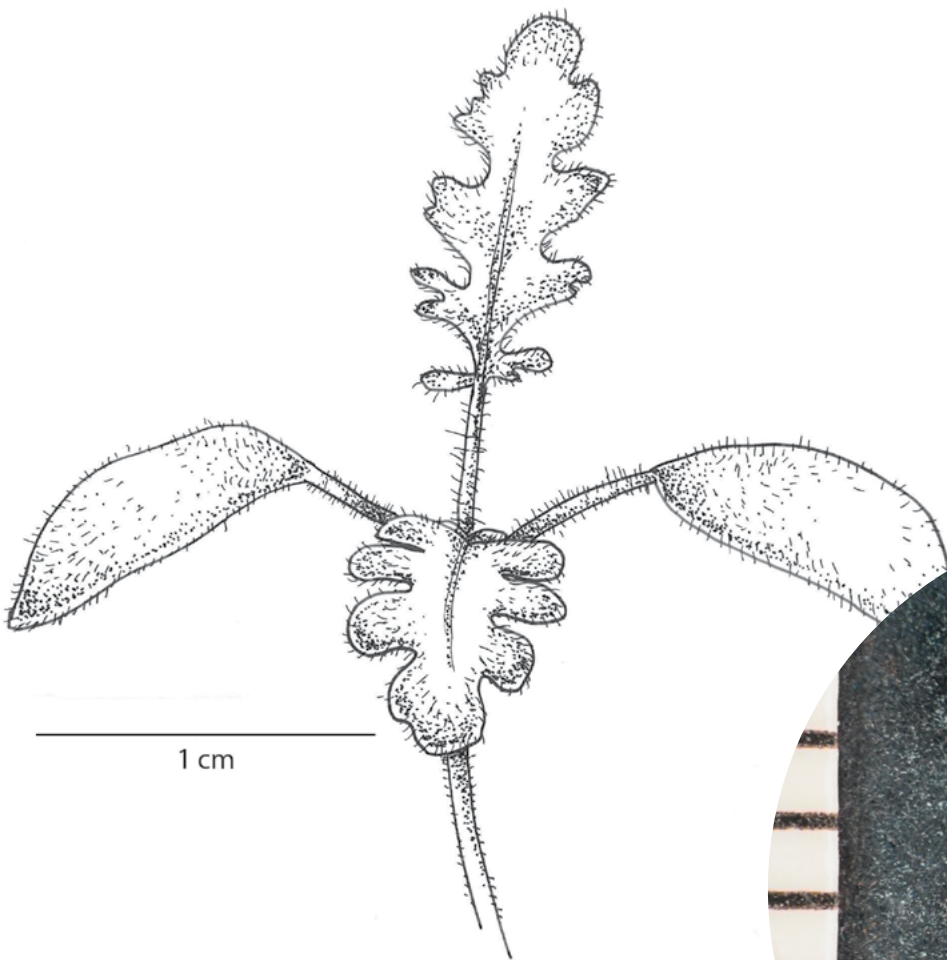
COMMON NAME: Cleftleaf wild heliotrope

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Dry, gravelly hillsides and flats, in sandy and clay soils, 1050–2150 m

DISTRIBUTION: AZ, CA, CO, NM, NV, TX, UT



Hydrophyllaceae (waterleaf family)

Phacelia distans

Benth.

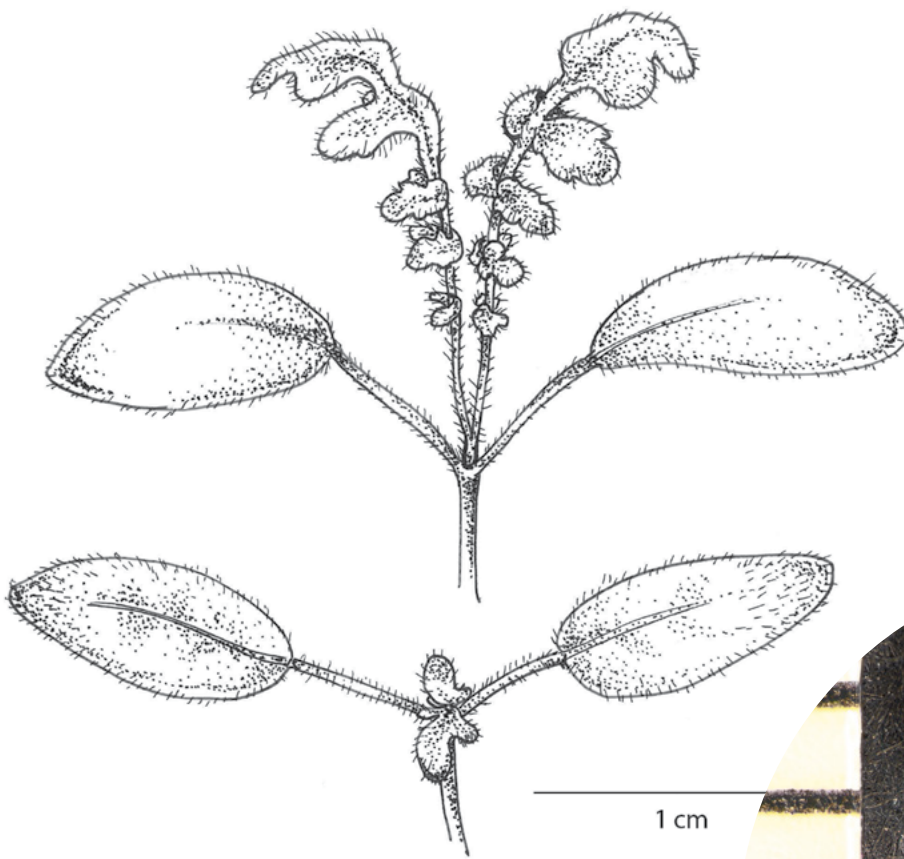
COMMON NAME: Distant phacelia

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Under bushes along washes and along sandy-gravelly washes and bajadas and less often rocky slopes, 300–1200 m

DISTRIBUTION: AZ, CA, NV



Hydrophyllaceae (waterleaf family)

Phacelia fremontii

Torr.

COMMON NAME: Fremont's phacelia

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy or gravelly soils along washes and in arid flats, often beneath shrubs, 600–1500 m

DISTRIBUTION: AZ, CA, NV, UT



Krameriaceae (ratany family)

Krameria bicolor

S. Watson

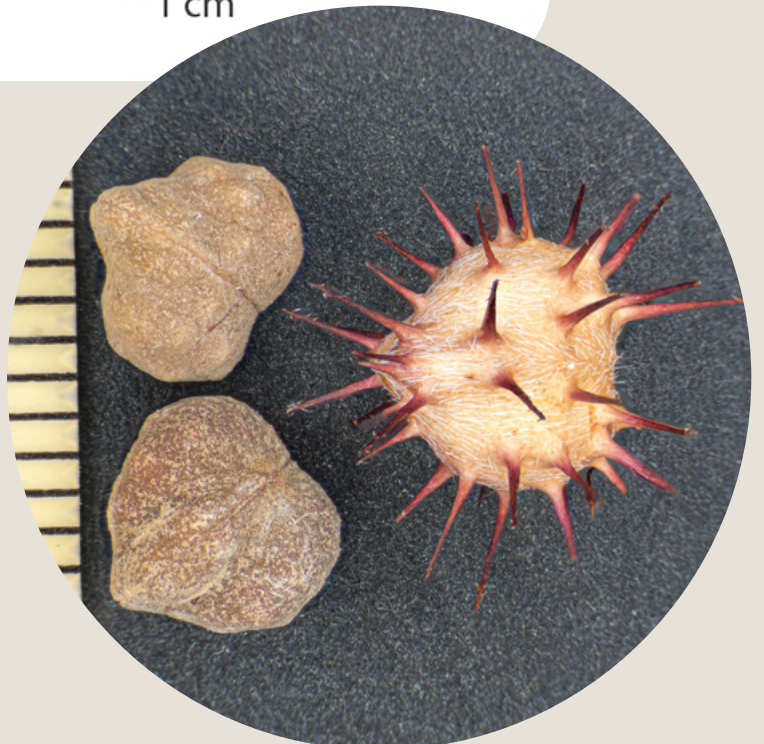
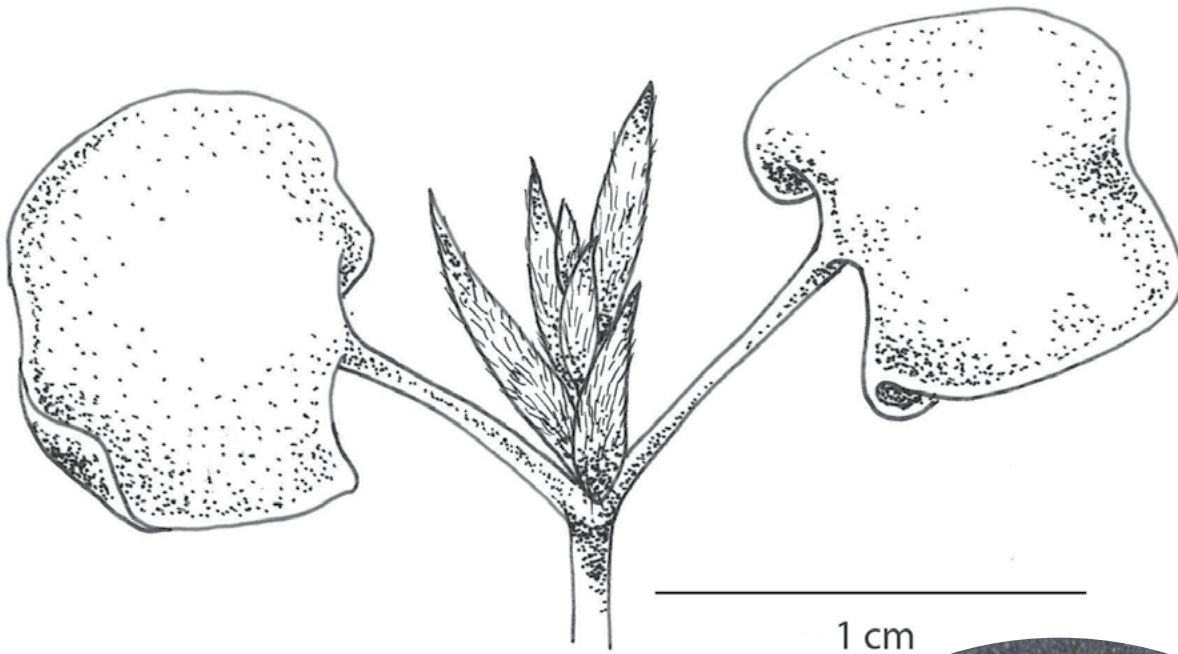
COMMON NAME: White ratany

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Dry slopes along washes and on hillsides, below 1050 m

DISTRIBUTION: AZ, CA, NV, TX, UT



Krameriaceae (ratany family)

Krameria erecta

Willd. ex J.A. Schult. & J. H. Schult.

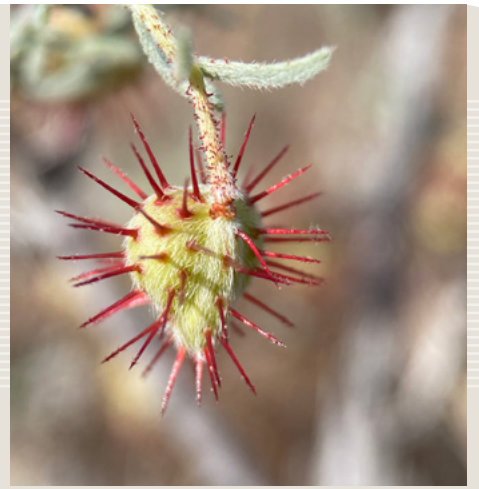
COMMON NAME: Littleleaf ratany

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Sandy, gravelly plains adjacent to mountains and rocky hills,
150–1500 m

DISTRIBUTION: AZ, CA, NM, NV, TX, UT



Lamiaceae (mint family)

Salvia columbariae

Benth.

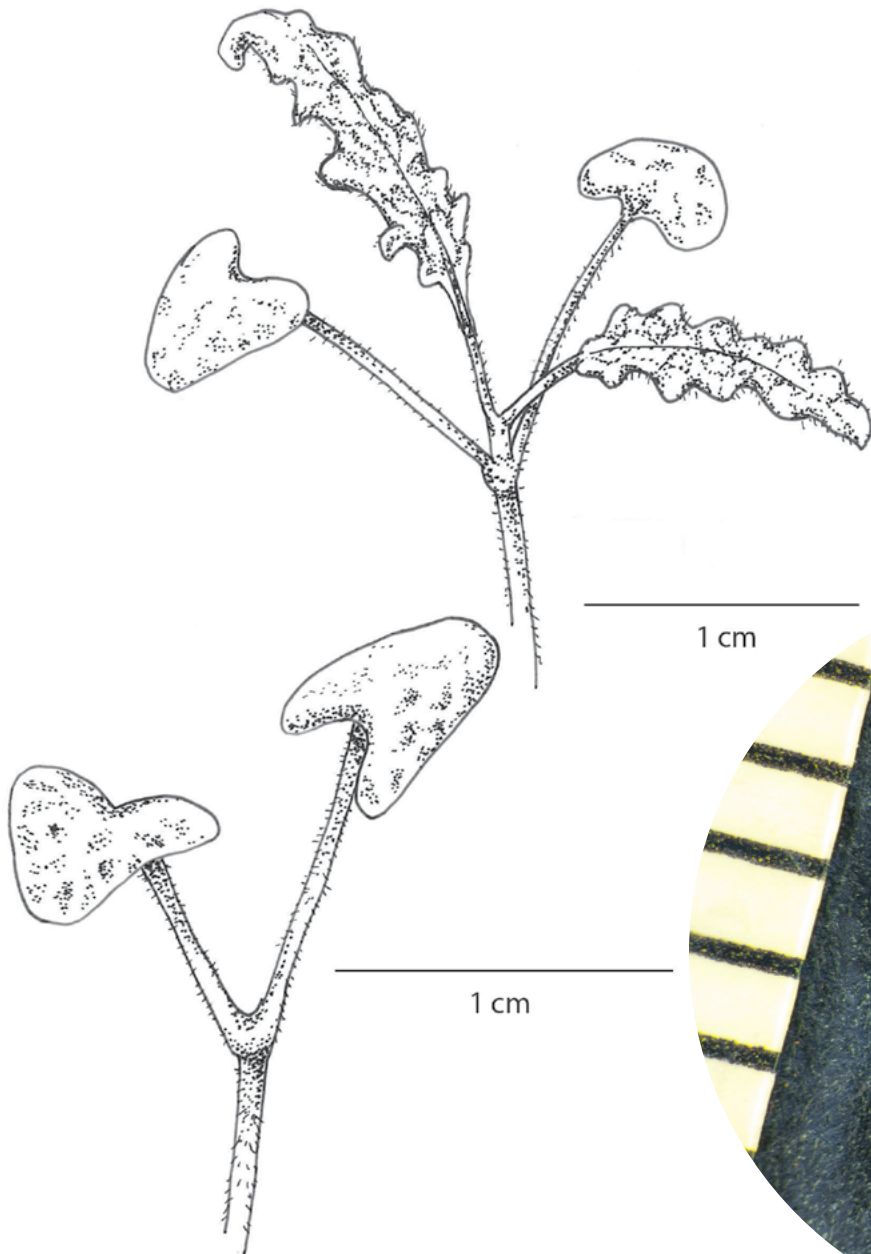
COMMON NAME: Chia

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy, gravelly, or rarely clay soil on slopes, common in sandy washes, below 1050 m

DISTRIBUTION: AZ, CA, NM, NV, UT



Lamiaceae (mint family)

Scutellaria mexicana

(Torr.) A.J. Paton

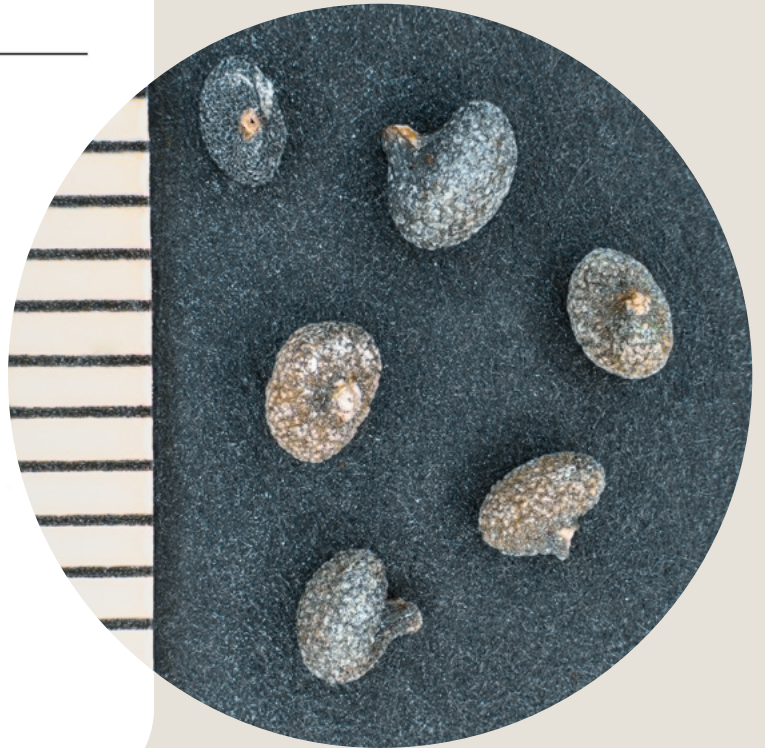
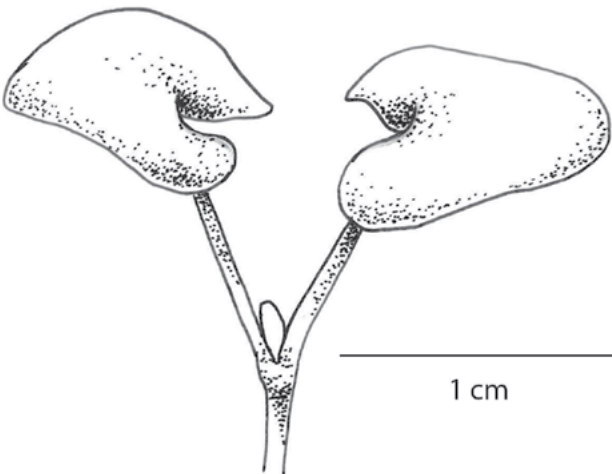
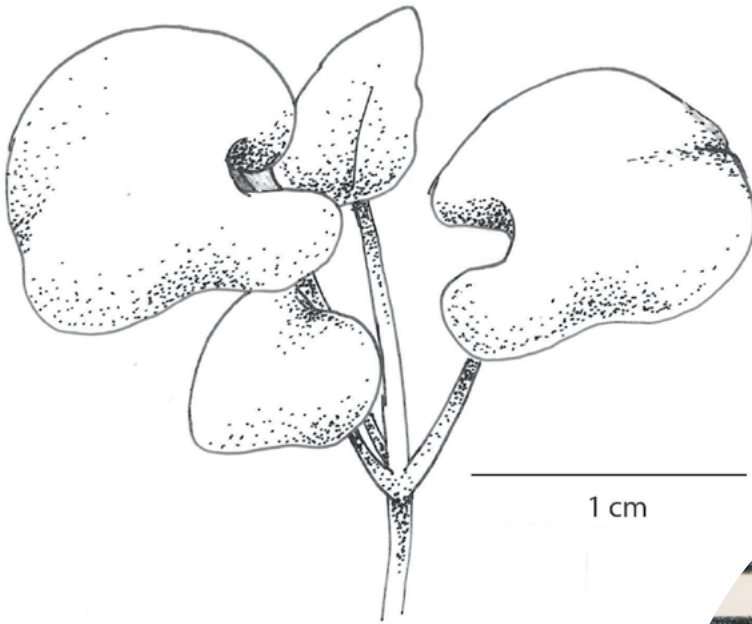
COMMON NAME: Paperbag bush

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Sandy to gravelly slopes, washes, scrub, woodland, below 1800 m

DISTRIBUTION: AZ, CA, NM, NV, TX, UT



Loasaceae (blazingstar family)

Mentzelia albicaulis

(Douglas) Douglas ex Torr. & A. Gray

COMMON NAME: Whitestem blazingstar

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Found in dry places, 300–2300 m

DISTRIBUTION: AZ, CA, CO, ID, MT, NE, NM, NV, OR, SD, TX, UT, WA, WY



Malvaceae (mallow family)

Sphaeralcea ambigua

A. Gray

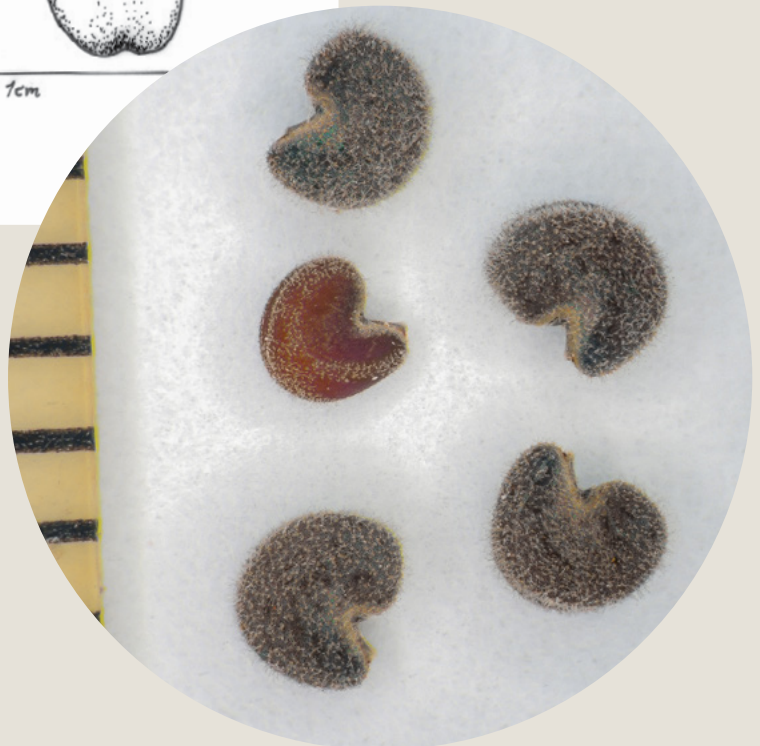
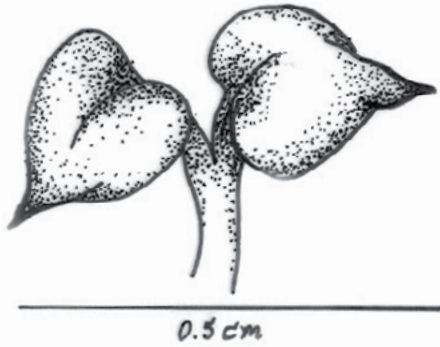
COMMON NAME: Desert globemallow

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Dry, rocky slopes, and along sandy washes, below 1050 m

DISTRIBUTION: AZ, CA, NM, NV, ID, UT



Malvaceae (mallow family)

Sphaeralcea angustifolia

(Cav.) G. Don

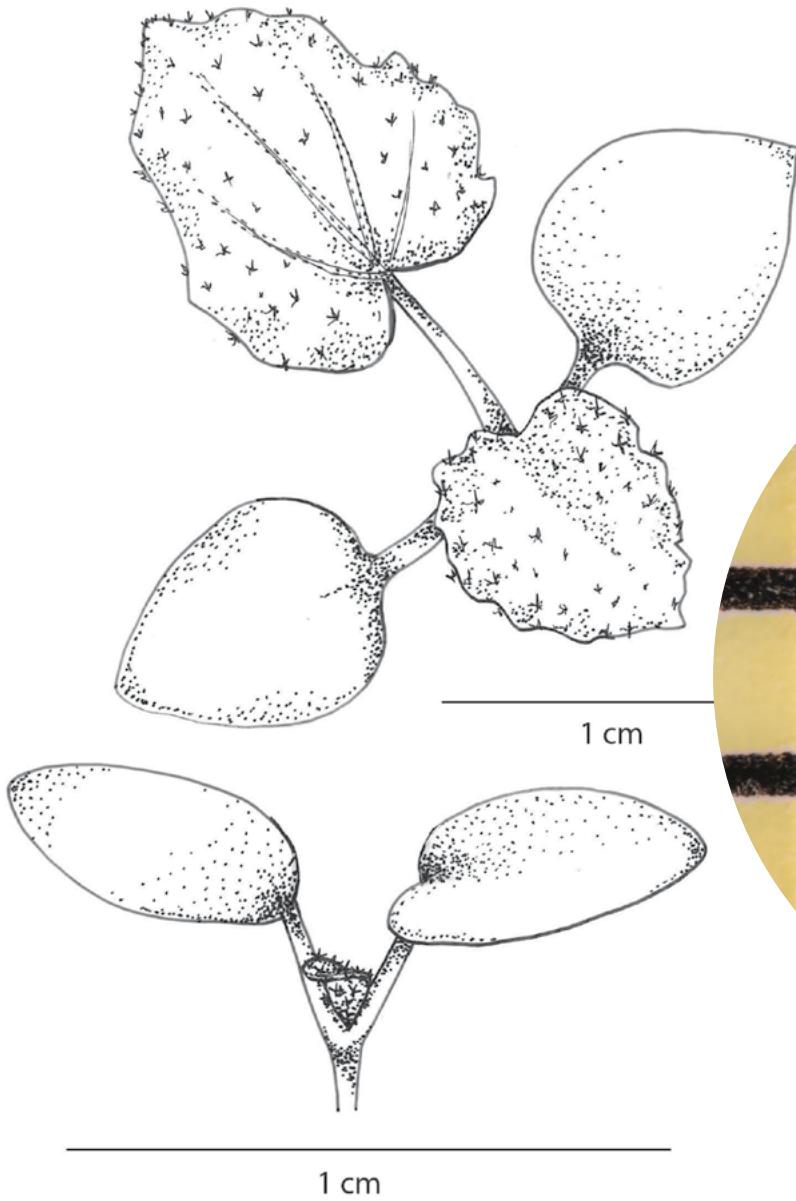
COMMON NAME: Copper globemallow

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Sandy or loamy soil, sandy plains or waste places, below 900 m

DISTRIBUTION: AZ, CA, CO, KS, MO, NA, NM, NV, OK, TX, UT



Nyctaginaceae (four o'clock family)

Abronia villosa

S. Watson

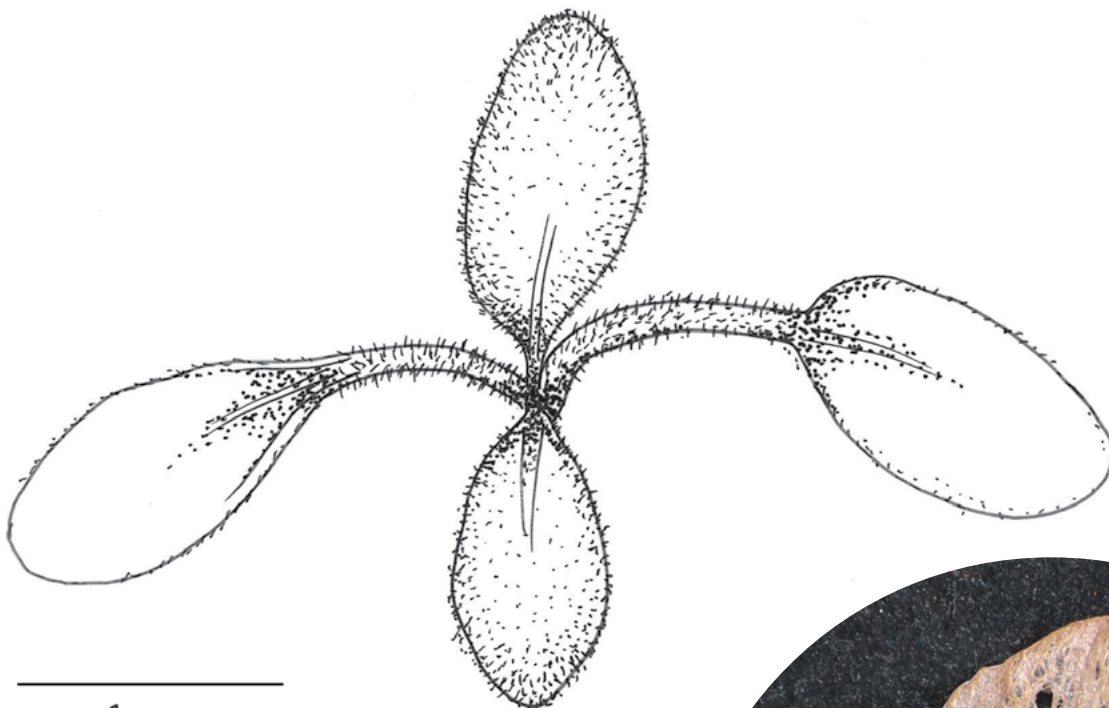
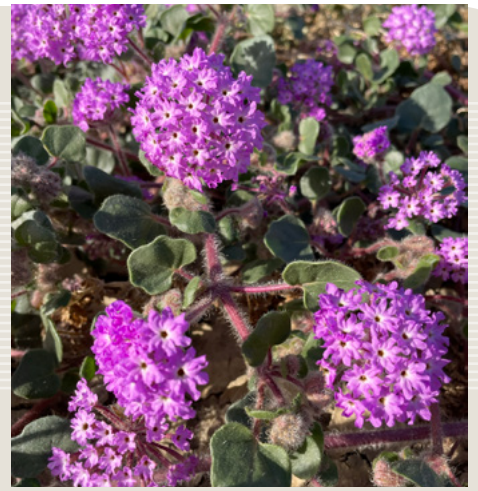
COMMON NAME: Sand verbena

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Sandy soils, in creosote sage-scrub, and chaparral, 0–2000 m

DISTRIBUTION: AZ, CA, NV, UT



1 cm



Oleaceae (olive family)

Fraxinus anomala

Torr. ex S. Watson

COMMON NAME: Singleleaf ash

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub/Tree

HABITAT: Canyons and bottomlands in lower elevations, often on dry slopes in higher elevations, ranges, 600–2450 m

DISTRIBUTION: AZ, CA, CO, NM, NV, UT, WY



Oleaceae (olive family)

Fraxinus velutina

Torr.

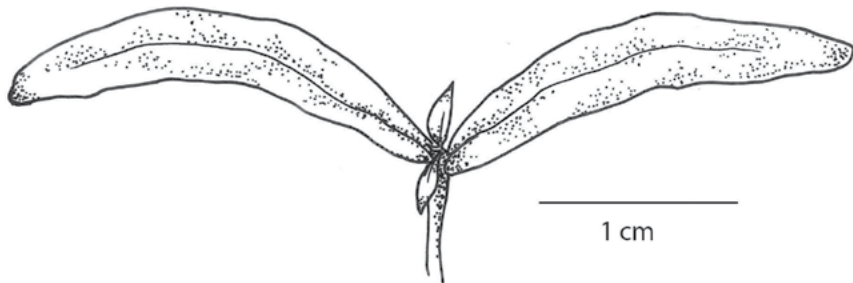
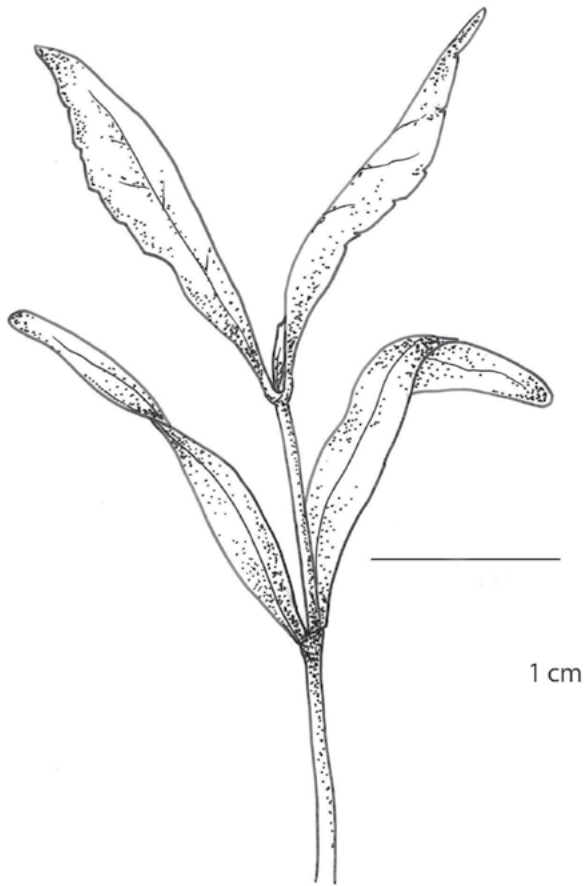
COMMON NAME: Velvet ash

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub/Tree

HABITAT: Moist soils, along streams and riparian areas, 900–2150 m

DISTRIBUTION: AZ, CA, NM, NV, TX, UT



Oleaceae (olive family)

Menodora spinescens

A. Gray

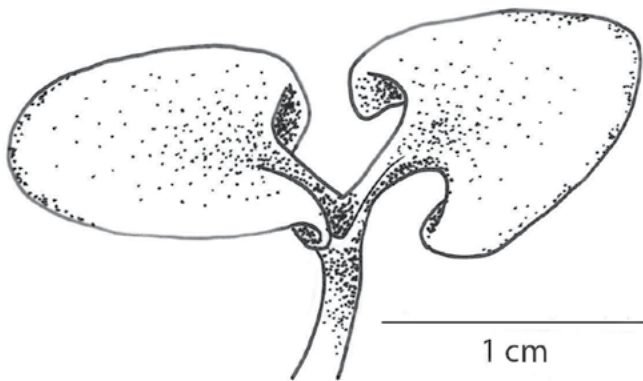
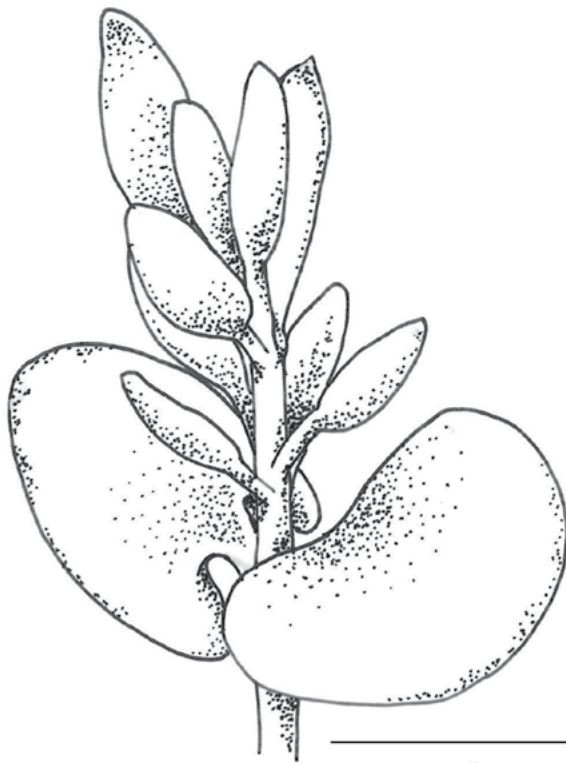
COMMON NAME: Spiny menodora

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Dry canyons and gulches, mostly pinyon juniper woodland, 900–3,300 m

DISTRIBUTION: AZ, CA, NV, UT



Onagraceae (evening primrose family)

Chylismia brevipes

(A. Gray) Small

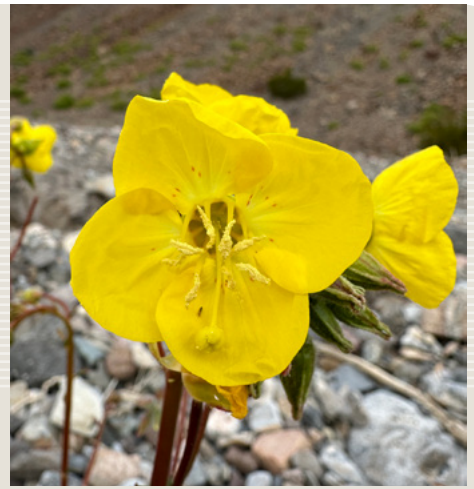
COMMON NAME: Yellow cups

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Dry washes and desert plains, below 1350 m

DISTRIBUTION: AZ, CA, NV, UT



Onagraceae (evening primrose family)

Chylismia claviformis ssp. *claviformis*

(Torr. & Frém.) A. Heller

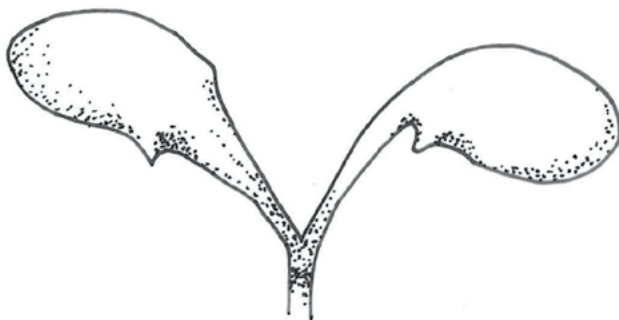
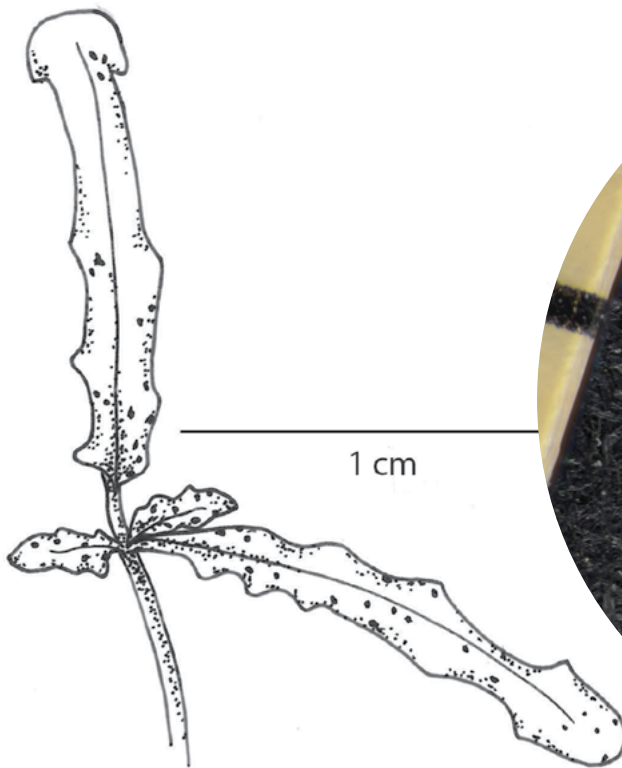
COMMON NAME: Browneyes

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy plains and washes, creosote bush and Joshua tree woodland, below 1200 m

DISTRIBUTION: CA, UT



Onagraceae (evening primrose family)

Eremothera refracta

(S. Watson) W.L. Wagner & Hoch

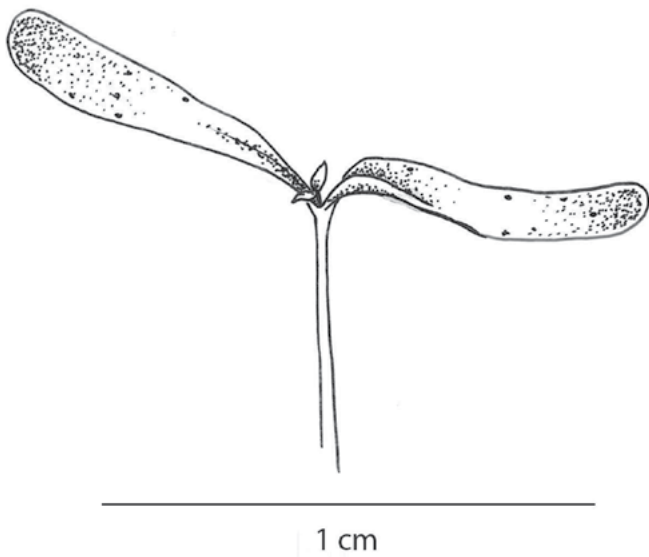
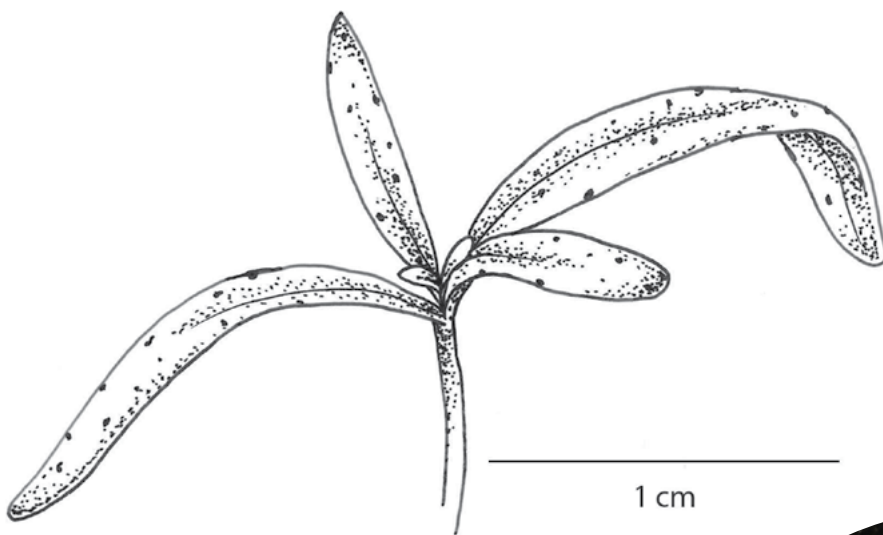
COMMON NAME: Narrowleaf suncup

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Sandy slopes, flats, desert scrub, -30 to 1300 m

DISTRIBUTION: AZ, CA, NM, NV, UT



Onagraceae (evening primrose family)

Oenothera deltoides

Torr. & Frém.

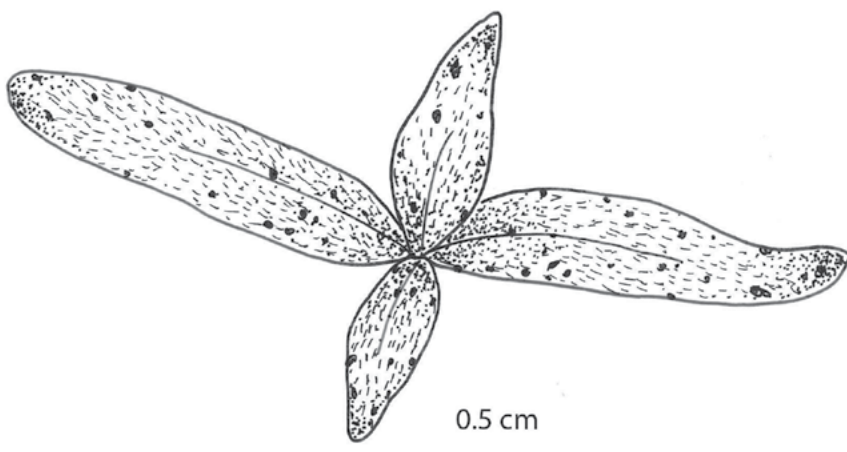
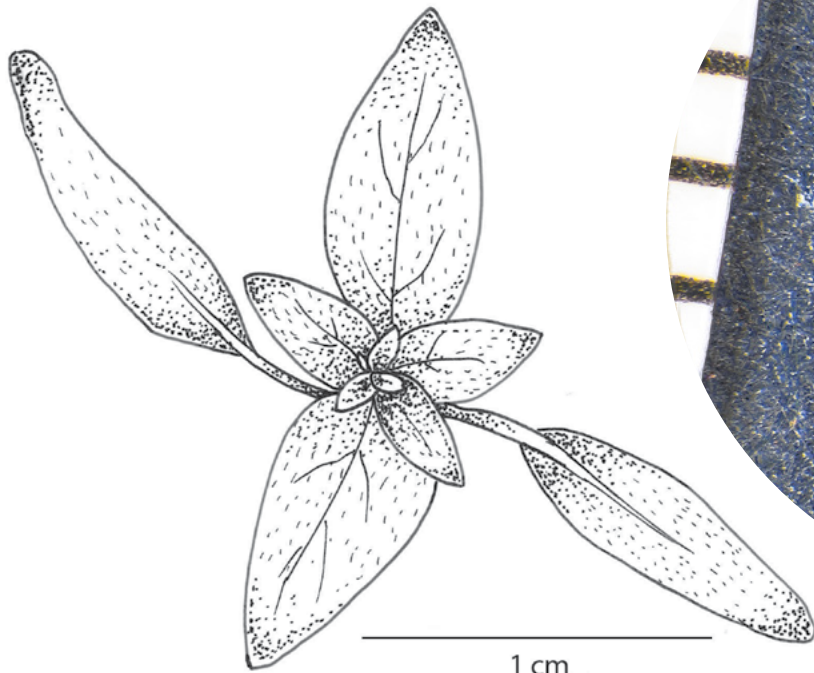
COMMON NAME: Birdcage evening primrose

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Dry, well-drained sandy areas on flats and into the lower mountains in Creosote-Bursage Flats, and Mojave Desert Scrub, 300–1250 m

DISTRIBUTION: AZ, CA, NV, OR, UT



Plantaginaceae (plantain family)

Penstemon palmeri

A. Gray

COMMON NAME: Palmer's penstemon

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Roadsides, washes, canyons, pinyon-juniper woodlands, ponderosa pine forests, 300–2100 m

DISTRIBUTION: AZ, CA, CO, ID, NM, NV, UT, WA, WY



1 cm



Plantaginaceae (plantain family)

Plantago ovata

Forssk.

COMMON NAME: Desert Indianwheat

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Wide ranging habitats in desert, ubiquitous, 50–2000 m

DISTRIBUTION: AZ, CA, NV, TX, UT



Poaceae (grass family)

Achnatherum hymenoides

(Roem. & Schult.) Barkworth

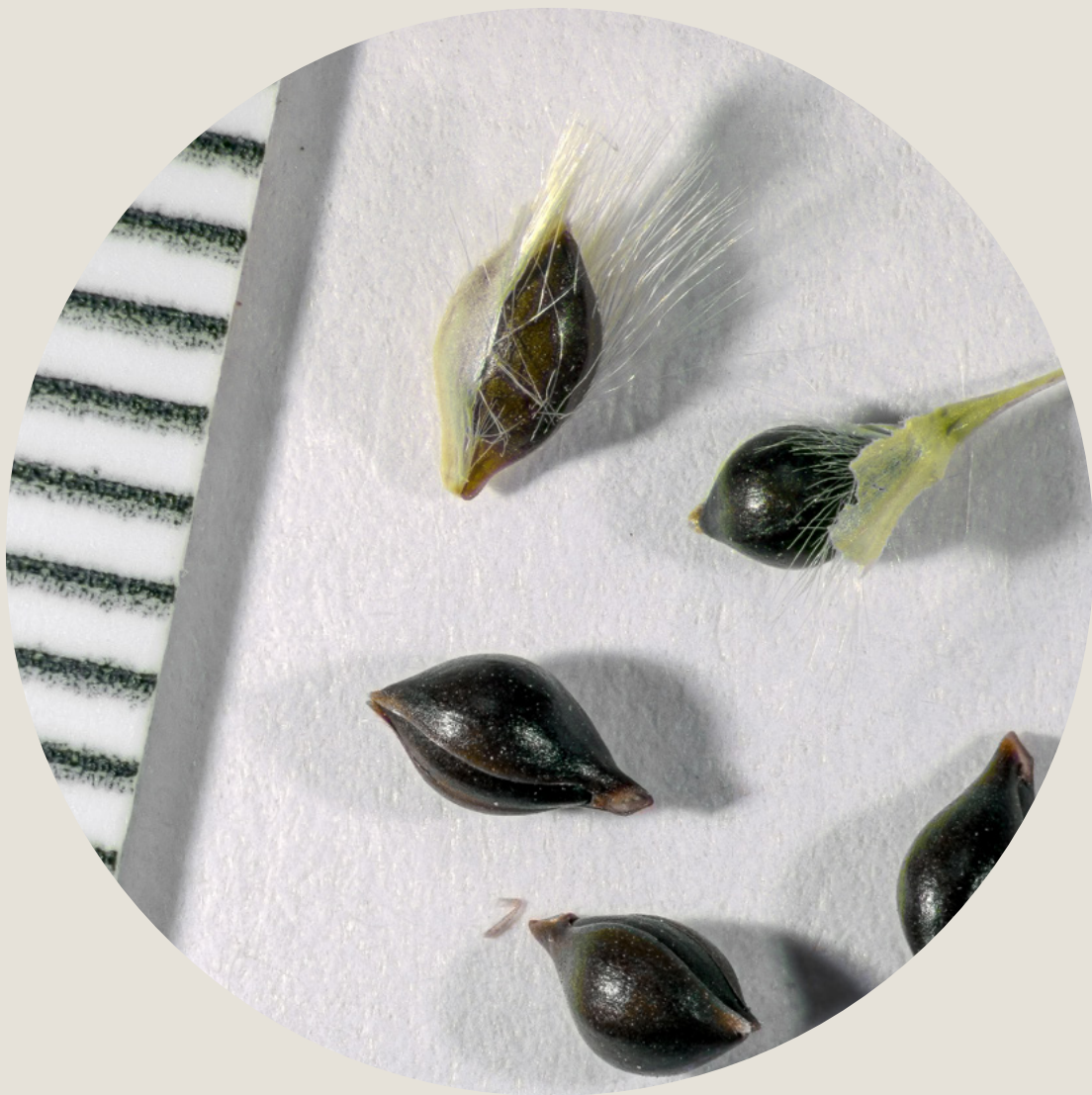
COMMON NAME: Indian ricegrass

GROUP: Monocot

DURATION/GROWTH HABIT: Perennial Graminoid

HABITAT: Dry, well drained soils, 1050–2000 m

DISTRIBUTION: Western United States



Poaceae (grass family)

Achnatherum speciosum

(Trin. & Rupr.) Barkworth

COMMON NAME: Desert needlegrass

GROUP: Monocot

DURATION/GROWTH HABIT: Perennial Graminoid

HABITAT: Rocky or sandy soils, slopes and flats, 600–1850 m

DISTRIBUTION: AZ, CA, CO, NV, OR, UT



Poaceae (grass family)

Bouteloua aristidoides

(Kunth) Griseb.

COMMON NAME: Needle grama

GROUP: Monocot

DURATION/GROWTH HABIT: Annual Graminoid

HABITAT: Dry mesas, washes, and disturbed areas, below 1850 m

DISTRIBUTION: AZ, CA, MD, NM, NV, TX, UT



Poaceae (grass family)

Bouteloua barbata

(Kunth) Griseb.

COMMON NAME: Sixweeks grama

GROUP: Monocot

DURATION/GROWTH HABIT: Annual Graminoid

HABITAT: Open, rocky or sandy slopes and washes, often weedy on disturbed soils, below 1850 m

DISTRIBUTION: Southwestern United States



Poaceae (grass family)

Dasyochloa pulchella

(Kunth) Willd. ex Rydb.

COMMON NAME: Fluffgrass

GROUP: Monocot

DURATION/GROWTH HABIT: Perennial Graminoid

HABITAT: Dry, rocky slopes and flats, below 1850 m

DISTRIBUTION: AZ, CA, CO, MD, NM, NV, TX, UT



Poaceae (grass family)

Festuca octoflora

Walter

COMMON NAME: Sixweeks fescue

GROUP: Monocot

DURATION/GROWTH HABIT: Annual Graminoid

HABITAT: Bare, sometimes sandy and very sandy soil, below 2000 m

DISTRIBUTION: Widely distributed in the United States



Poaceae (grass family)

Hilaria jamesii

(Torr.) Benth.

COMMON NAME: James' galleta

GROUP: Monocot

DURATION/GROWTH HABIT: Perennial Graminoid

HABITAT: Canyons, deserts, dry plains, sandy plateaus, pinyon-juniper woodlands, sometimes in Ponderosa pine forests, 1100–2100 m

DISTRIBUTION: AZ, CA, CO, KS, NM, NV, OK, TX, UT, WY



Poaceae (grass family)

Hilaria rigida

(Thurb.) Scribn.

COMMON NAME: Big galleta

GROUP: Monocot

DURATION/GROWTH HABIT: Perennial Graminoid

HABITAT: Deserts, plains, and rocky hills, below 1200 m

DISTRIBUTION: AZ, CA, NM, NV, UT



Poaceae (grass family)

Muhlenbergia porteri

Scribn. ex Beal

COMMON NAME: Bush muhly

GROUP: Monocot

DURATION/GROWTH HABIT: Perennial Graminoid

HABITAT: Found among boulders on rocky slopes and on cliffs, in dry arroyos, desert flats, and grasslands, frequently in the protection of shrubs, 600–1850 m

DISTRIBUTION: AZ, CA, CO, NM, NV, OK, TX, UT



Polygonaceae (buckwheat family)

Eriogonum fasciculatum

Benth.

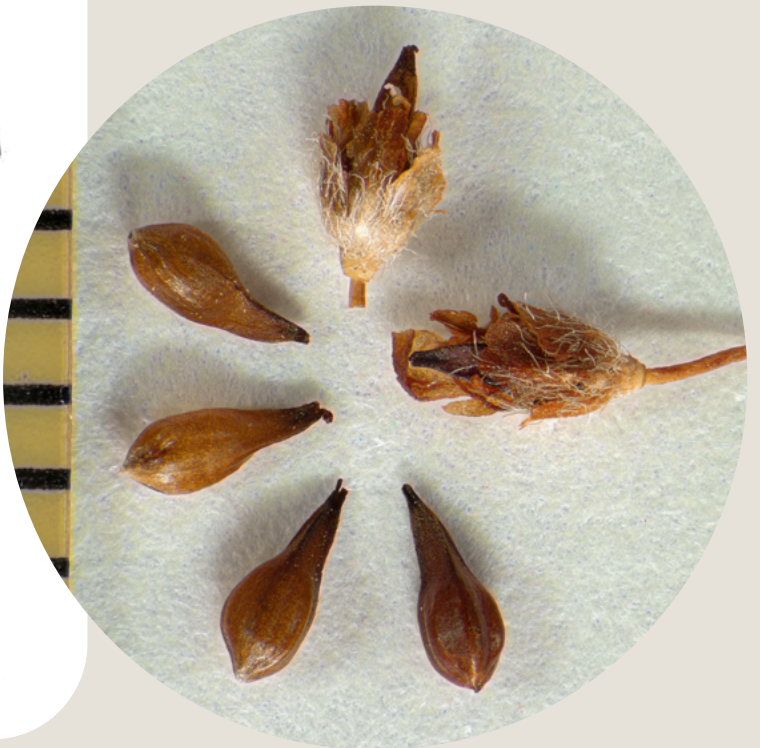
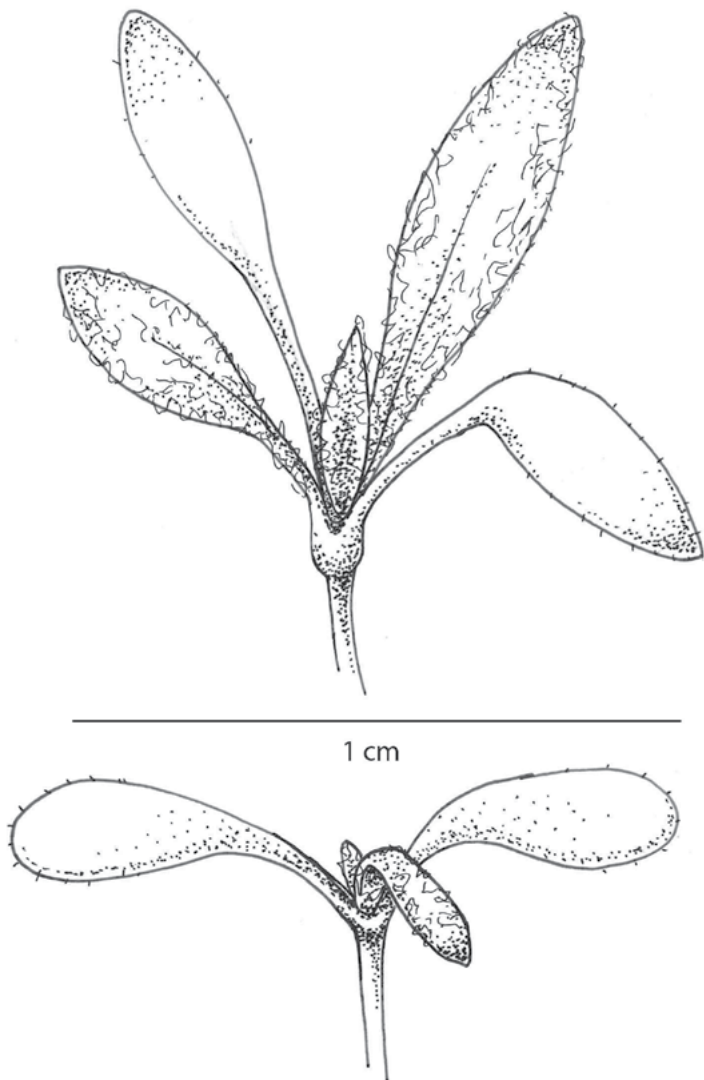
COMMON NAME: California buckwheat

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub/Subshrub

HABITAT: Dry rocky slopes, 300–1350 m

DISTRIBUTION: AZ, CA, NV, UT



Polygonaceae (buckwheat family)

Eriogonum inflatum

Torr. & Frém.

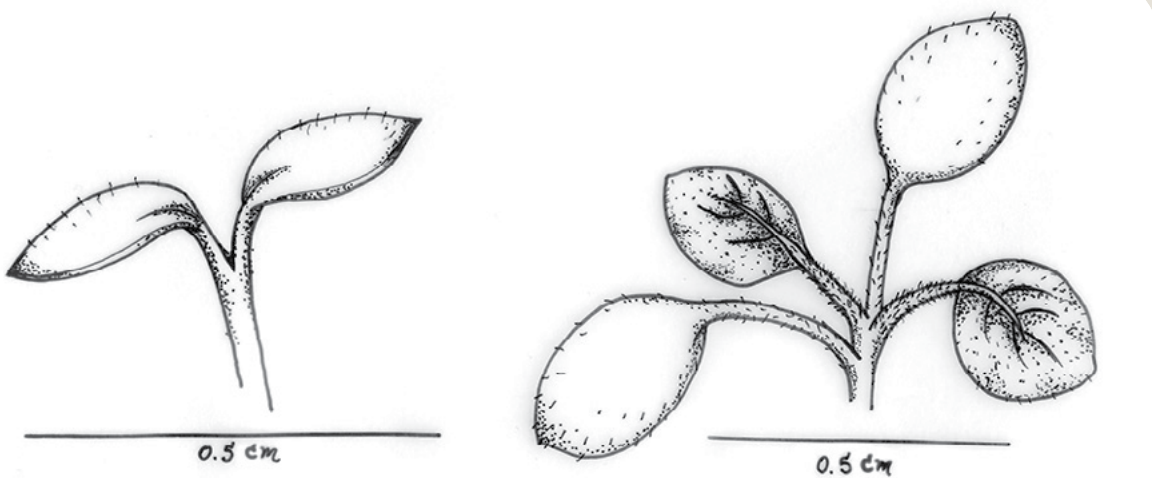
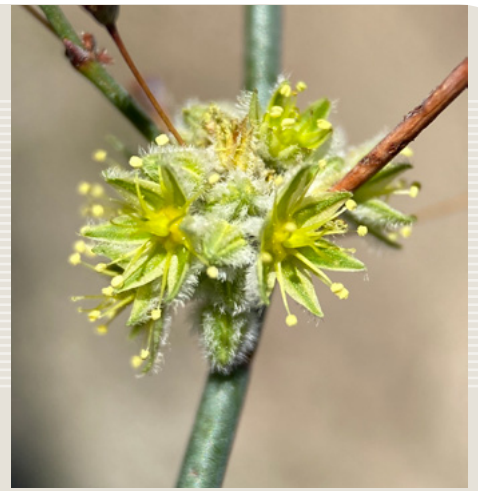
COMMON NAME: Trumpet flower

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Sandy and gravelly soils from flats to slopes, below 1500 m

DISTRIBUTION: AZ, CA, CO, NM, NV, UT



Rosaceae (rose family)

Coleogyne ramosissima

Torr.

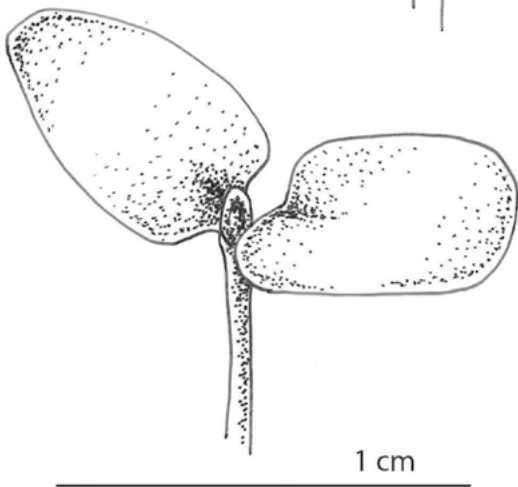
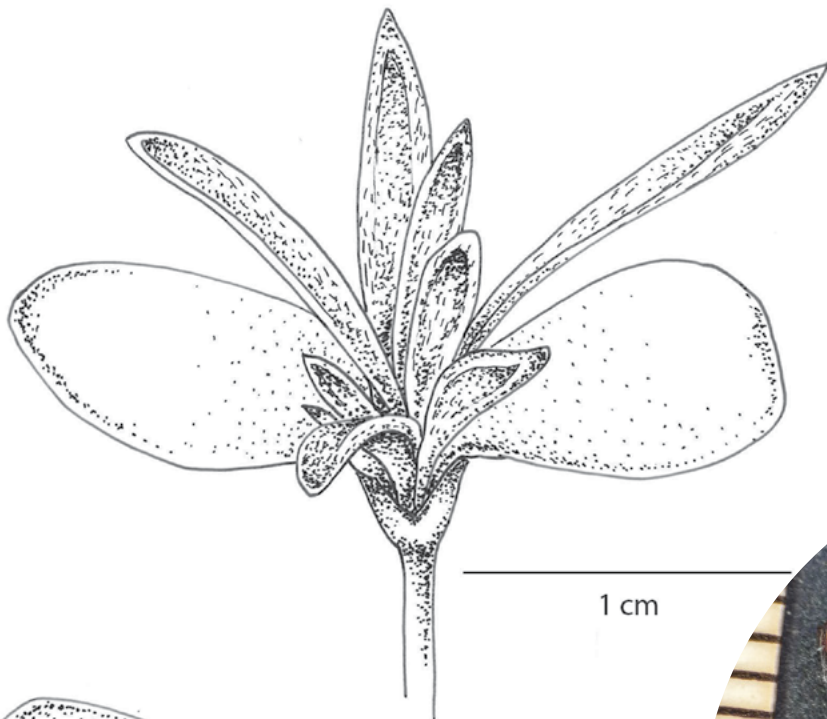
COMMON NAME: Blackbrush

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Dry, open slopes, creosote-bush scrub, pinyon/juniper woodland, 600–2000 m

DISTRIBUTION: AZ, CA, CO, NV, UT



Solanaceae (nightshade family)

Lycium andersonii

A. Gray

COMMON NAME: Water jacket

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Arid washes and arroyos, bajadas, rocky slopes, mesas and foothills, below 1700 m

DISTRIBUTION: AZ, CA, NM, NV, UT



Solanaceae (nightshade family)

Lycium pallidum

Miers

var. oligospermum

C.L. Hitchc.

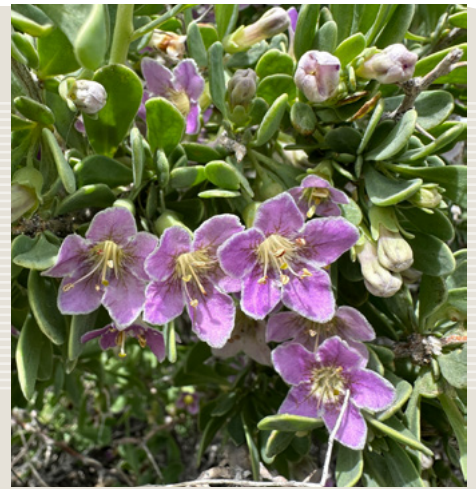
COMMON NAME: Pale desert-thorn

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Dry rocky hills and mesas, below 750 m

DISTRIBUTION: AZ, CA, NV, UT



Solanaceae (nightshade family)

Nicotiana attenuata

Torr. ex S. Watson

COMMON NAME: Coyote tobacco

GROUP: Dicot

DURATION/GROWTH HABIT: Annual Forb

HABITAT: Washes, in sandy slopes, roadsides, and along fields,
300–2150 m

DISTRIBUTION: AZ, CA, CO, ID, MT, NM, NV, OR, TX, UT, WA, WY



Solanaceae (nightshade family)

Nicotiana obtusifolia

Martens & Galeotti

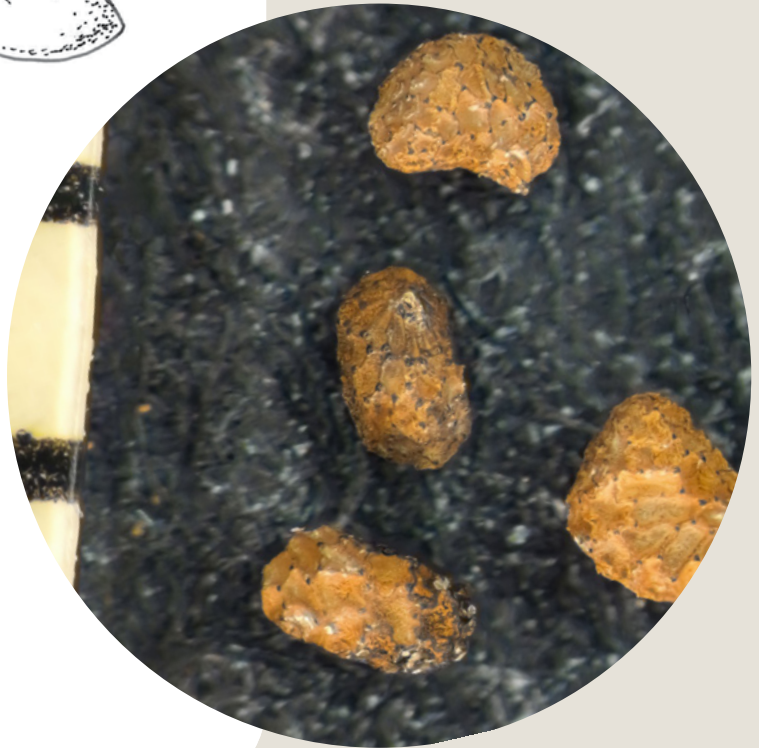
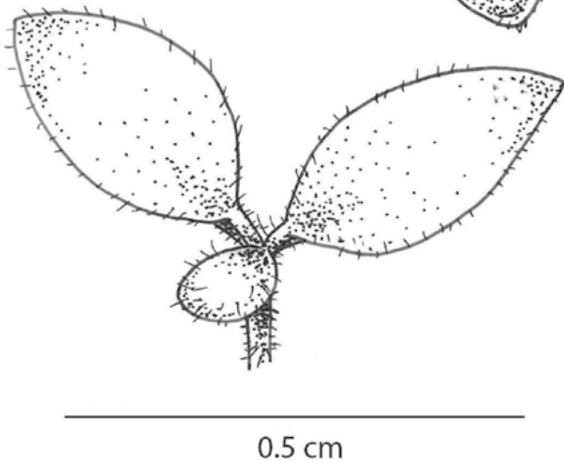
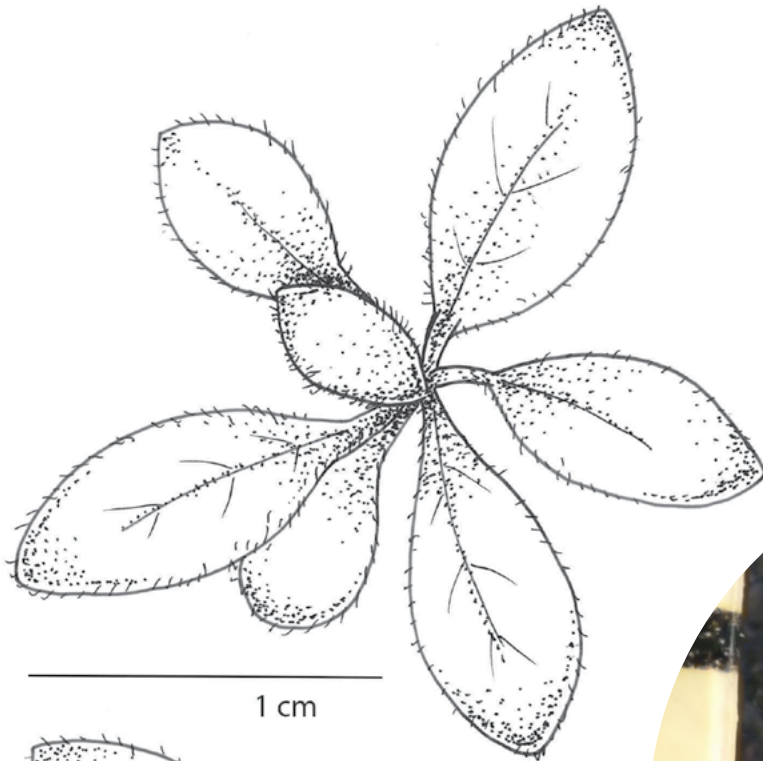
COMMON NAME: Desert tobacco

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Forb

HABITAT: Canyons, at the base of rocky slopes, and along washes, below 1850 m

DISTRIBUTION: AZ, CA, NM, NV, OK, TX, UT



Zygophyllaceae (caltrop family)

Larrea tridentata

(DC.) Coville

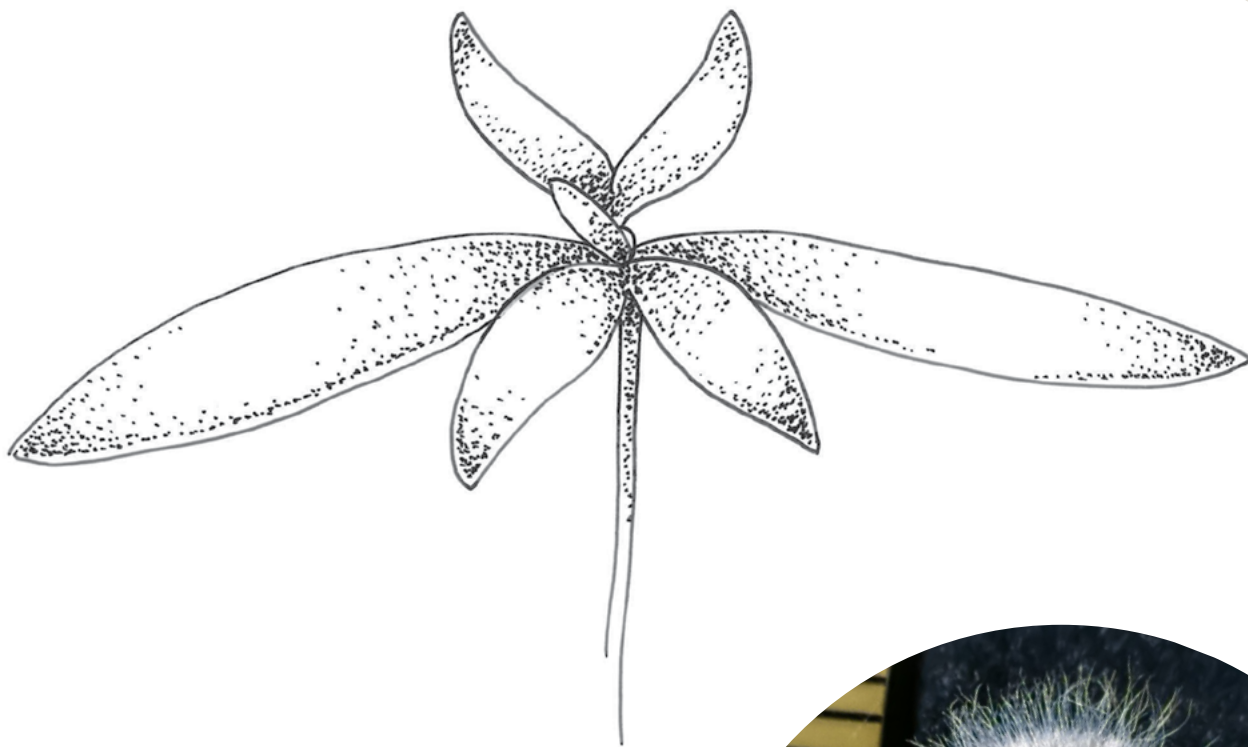
COMMON NAME: Creosote

GROUP: Dicot

DURATION/GROWTH HABIT: Perennial Shrub

HABITAT: Widespread and common on dry plains and mesas, below 1700 m

DISTRIBUTION: AZ, CA, NM, NV, TX, UT



2 cm



Index

A

Abronia villosa 60
Achnatherum hymenoides 70
Achnatherum speciosum 71
Acmispon brachycarpus 39
Acmispon rigidus 40
Acmispon strigosus 41
Amaranthaceae (pigweed family) 1, 2, 3, 4, 5
Amaranthus fimbriatus 1
Ambrosia dumosa 11
Ambrosia eriocentra 12
Ambrosia salsola var. *salsosa* 13
Amsinckia tessellata 27
Anisocoma acaulis 14
Apiaceae (carrot family) 6
Apocynaceae (dogbane family) 7, 8
Arizona lupine 45
Asclepias erosa 7
Asclepias subulata 8
Asparagaceae (asparagus family) 9, 10
Asteraceae (sunflower family) 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
Astragalus didymocarpus var. *didymocarpus* 42
Astragalus didymocarpus var. *dispermus* 43
Astragalus layneae 44
Atriplex canescens 2
Atriplex hymenelytra 3
Atriplex lentiformis 4
Atriplex polycarpa 5

B

Baileya multiradiata 15
Big galleta 77
Bignoniaceae (trumpet creeper family) 26
Birdcage evening primrose 67
Blackbrush 81
Bladderpod 34
Boraginaceae (forget-me-not family) 27, 28
Bouteloua aristidoides 72
Bouteloua barbata 73
Brassicaceae (mustard family) 29, 30, 31
Bristly fiddleneck 27
Brittlebush 17
Browneyes 65
Brownplume wirelettuce 24

C

Cactaceae (cactus family) 32, 33
California buckwheat 79
Cattle saltbush 5
Chaenactis fremontii 16
Cheesebush 13
Chia 55
Chilopsis linearis ssp. *arcuata* 26
Chinchweed 22
Chylismia brevipes 64
Chylismia claviformis ssp. *claviformis* 65
Cleftleaf wild heliotrope 50
Cleomaceae (spiderflower family) 34, 35
Coleogyne ramosissima 81
Cooper's goldenbush 19
Copper globemallow 59
Coyote tobacco 84
Creosote 86

D

Dasyochloa pulchella 74
Descurainia pinnata 29
Desert dandelion 21
Desert globemallow 58
Desert holly 3
Desert Indianwheat 69
Desert marigold 15
Desert milkweed 7
Desert needlegrass 71
Desert pepperweed 30
Desert senna 49
Desert tobacco 85
Desert willow 26
Distant phacelia 51
Dwarf white milkvetch 43

E

Eastern Joshua tree 9
Echinocereus engelmannii 32
Encelia farinosa 17
Encelia virginensis 18
Engelmann's hedgehog cactus 32
Ephedraceae (Mormon-tea family) 36
Ephedra nevadensis 36
Eremocarya micrantha var. micrantha 28
Eremothera refracta 66
Ericameria cooperi 19
Eriogonum fasciculatum 79
Eriogonum inflatum 80
Euphorbiaceae (spurge family) 37, 38
Euphorbia micromera 37
Euphorbia polycarpa 38

F

Fabaceae (legume family) 47
Fabaceae (legume family) 39, 40, 41, 42, 43, 44, 45, 46,
48, 49
Festuca octoflora 75
Fluffgrass 74
Foothill deervetch 39
Fourwing saltbush 2
Fraxinus anomala 61
Fraxinus velutina 62
Fremont pincushion 16
Fremont's dalea 48
Fremont's phacelia 52
Fringed amaranth 1

G

Gutierrezia microcephala 20

H

Hilaria jamesii 76
Hilaria rigida 77
Hollyleaf bursage 11
Honey mesquite 46
Hydrophyllaceae (waterleaf family) 50, 51, 52

I

Indian ricegrass 70

J

James' galleta 76

K

Krameria bicolor 53
Krameriaceae (ratany family) 53, 54
Krameria erecta 54

L

Lamiaceae (mint family) 55, 56
Larrea tridentata 86
Lepidium fremontii 30
Lepidium lasiocarpum 31
Littleleaf ratany 54
Loasaceae (blazingstar family) 57
Lomatium parryi 6
Lupinus arizonicus 45
Lycium andersonii 82
Lycium pallidum var. oligospermum 83

M

Malacothrix glabrata 21
Malvaceae (mallow family) 58, 59
Menodora spinescens 63
Mentzelia albicaulis 57
Mojave aster 25
Mojave yucca 10
Muhlenbergia porteri 78

N

Narrowleaf suncup 66
Needle grama 72
Nevada Mormon-tea 36
Nicotiana attenuata 84
Nicotiana obtusifolia 85
Nyctaginaceae (four o'clock family) 60

O

Oenothera deltooides 67
Oleaceae (olive family) 61, 62, 63
Onagraceae (evening primrose family) 64, 65, 66, 67
Opuntia phaeacantha 33
Oxystylis lutea 35

P

Pale desert-thorn 83
Palmer's penstemon 68
Paperbag bush 56
Pectis papposa 22
Penstemon palmeri 68
Perennial Graminoid 78
Peritoma arborea 34
Phacelia crenulata 50
Phacelia distans 51
Phacelia fremontii 52
Plantaginaceae (plantain family) 68, 69
Plantago ovata 69
Poaceae (grass family) 70, 71, 72, 73, 74, 75, 76, 77, 78
Polygonaceae (buckwheat family) 79, 80
Prosopis glandulosa 46
Prosopis pubescens 47
Psoralea fremontii 48

Q

Quailbush 4

R

Redroot cryptantha 28
Rosaceae (rose family) 81
Rush milkweed 8

S

Salvia columbariae 55
Sand verbena 60
Scalebud 14
Screwbean mesquite 47
Scutellaria mexicana 56
Senna armata 49
Shaggyfruit pepperweed 31
Shrubby deervetch 40
Singleleaf ash 61
Sixweeks fescue 75
Sixweeks grama 73
Smallseed sandmat 38
Small wirelettuce 23
Solanaceae (nightshade family) 82, 83, 84, 85
Sonoran sandmat 37
Sphaeralcea ambigua 58
Sphaeralcea angustifolia 59
Spiny caper 35
Spiny menodora 63
Stephanomeria exigua 23
Stephanomeria pauciflora 24
Strigose bird's-foot trefoil 41

T

Threadleaf snakeweed 20
Trumpet flower 80
Tulip prickly pear 33
Two seeded milkvetch 42

U

Utah desert parsley 6

V

Velvet ash 62
Virgin River brittlebush 18

W

Water jacket 82
Western tansymustard 29
White bursage 12
White ratany 53
Whitestem blazingstar 57
Widow's milkvetch 44

X

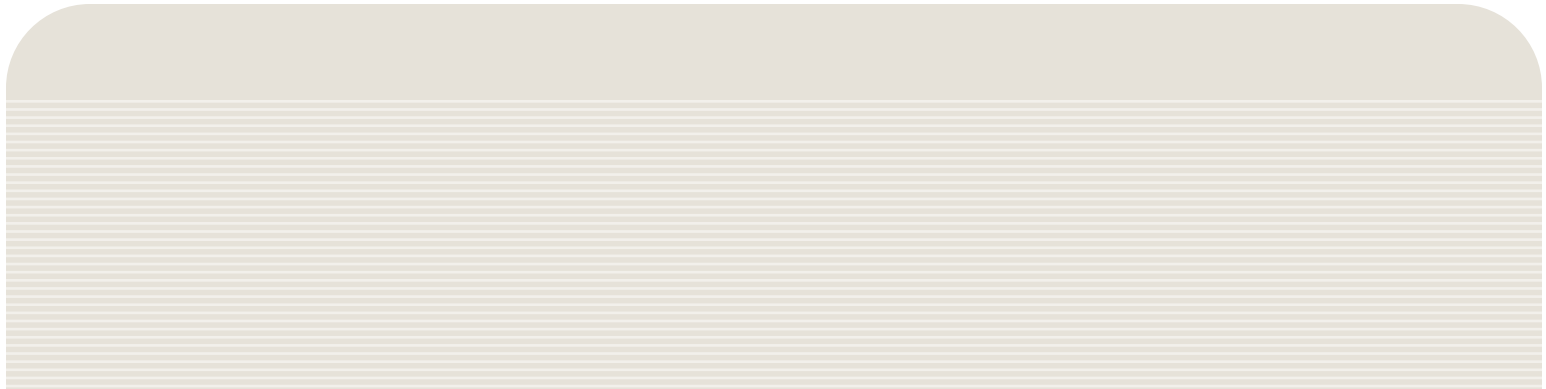
Xylorhiza tortifolia 25

Y

Yellow cups 64
Yucca brevifolia var. jaegeriana 9
Yucca schidigera 10

Z

Zygophyllaceae (caltrop family) 86







www.blm.gov



www.dri.edu