

SCIENTIFIC NAME | *Carex scirpoidea* Michx. var. *curatorum* (Stacey) Cronq.

COMMON NAME | None, but sometimes called the Canyonland sedge. *Carex* is from the Latin word meaning cutter, from the sharp leaf and stem edges; *scirpoidea* means like *Scirpus*, another genus in the Sedge Family; and *curatorum*, honors Alice Eastwood, 1859-1953, and John Thomas Howell, 1903-1994, botanical curators at the herbarium of the California Academy of Sciences who first collected the variety.

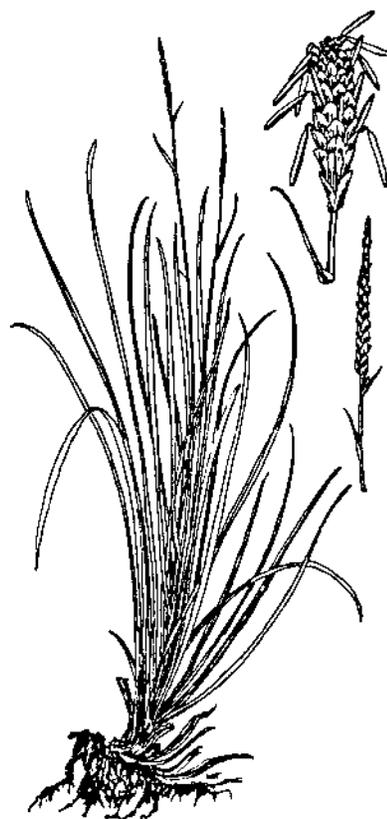
FAMILY (COMMON NAME) | Cyperaceae (Sedge Family)

SYNONYMS | *Carex curatorum* Stacey

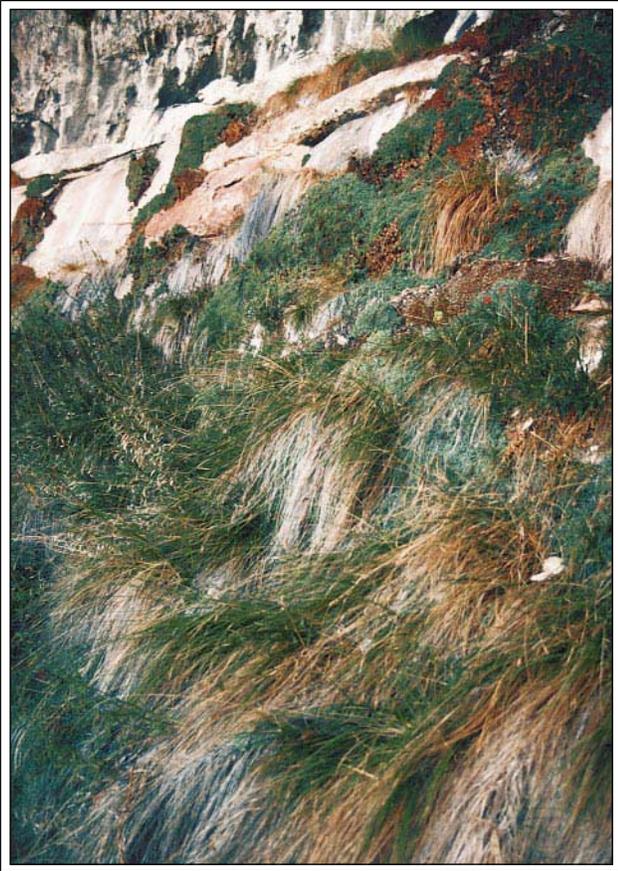
DISTRIBUTION | Utah and Coconino County, Arizona. In Grand Canyon NP it is found at Saddle Horse Springs, North Kaibab Trail above Roaring Springs, and hanging gardens or seeps at CRM 155.5 R and 166.5 R.

HABITAT | Perennial herb. Hanging gardens and seeps along the Colorado and San Juan Rivers, 3,770 to 4,400 feet, May to August.

LOOK-ALIKES | Similar in appearance to many sedges, but differs in having separate sexes (i.e., both male and female plants) and the pistillate scales shorter and narrower.



- Spikes 2.5 to 5 cm long solitary, unisexual
- Separate sexes
- Plants densely caespitose 21-40 cm tall
- Rhizomes lacking, or if present, stout and short



Habitat — BY N. BRIAN

SCIENTIFIC NAME | *Castilleja kaibabensis* N. Holmgren

COMMON NAME | None, but called the Kaibab paintbrush. *Castilleja* was dedicated in 1781 to honor Domingo Castillejo, a botanist of Cadiz, Spain, and *kaibabensis* means of or from the Kaibab Plateau.

FAMILY (COMMON NAME) | Schrophulariaceae (Figwort Family)

SYNONYMS | None

DISTRIBUTION | Endemic to 12 square miles on the Kaibab Plateau, Coconino County, Arizona. In Grand Canyon NP it is reported from Upper Little Park, North Rim.

HABITAT | Perennial herb. Fine silts and clays to rocky gravelly meadow soils derived from weathered Kaibab limestone, on low rounded ridgetops and small knolls, usually in the driest, most exposed sites in the open meadows, 8,200 to 9,000 feet, July to August. It readily colonizes disturbed sites and is considered an early to mid-successional species.

LOOK-ALIKES | Similar to *C. integra* and *C. lineariaefolia*, but differs in having bracts divided with fairly acute-tipped lobes and rounded tip, no white, wooly-hairs on stem, and more appressed leaves.



- Stems with bristly, reflexed hairs
- Flower bracts yellow to reddish-orange or salmon
- Calyx lobes cleft between outer lobes deeper than cleft between inner lobes





General view of *Castilleja kaibabensis*
— BY K. WARREN

SCIENTIFIC NAME | *Cheilanthes villosa* Davenp. ex Maxon.

COMMON NAME | Hairy lip fern. *Cheilanthes* is from a Greek word *cheilos* meaning lip and *anthos* meaning flower, in reference to the marginal location of the sporangia and *villosa* meaning bearing long and soft hairs which are not matted.

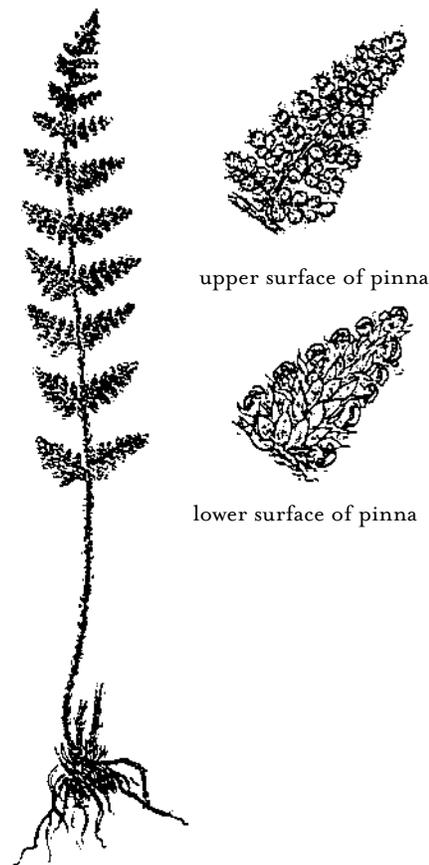
FAMILY (COMMON NAME) | Adiantaceae (Maidenhair Fern Family)

SYNONYMS | None

DISTRIBUTION | Western Texas to northern Mexico and southern Arizona. In Arizona, it is known from Coconino, Maricopa, Cochise, Pima, Santa Cruz and Yuma Counties. Although it is not known from Grand Canyon NP, it may be expected. It has been collected once from Mooney Falls (Blakely in 1952) in Havasu Canyon on Supai Tribal lands.

HABITAT | Perennial, evergreen fern. Mountains, granitic and limestone slopes and ledges, and dry, shaded limestone cliffs, and canyons, 2,000 to 4,000 feet.

LOOK-ALIKES | Other lip ferns of the genus *Cheilanthes*, but differs by the fronds coarsely, not finely, hairy on the top surface and triangular shaped scales on the bottom of the fronds.



- Several or numerous stems from a single taproot
- Narrowly oblong and clumped fronds
- Segments small, round, and bead-like
- Scales of lower side of leaves large, triangular, whitish, and ovate
- Scales conceal the segments
- Stalk of the frond, purplish-brown, shiny, and shorter than the blades

SCIENTIFIC NAME | *Crossosoma parviflorum* Robins & Fern.

COMMON NAME | None, but called ragged rock flower. *Crossosoma* is from a Greek word meaning fringe body in reference to the fringed, conspicuous aril, an appendage on the seed; and *parviflorum* literally means little, small, or puny flower.

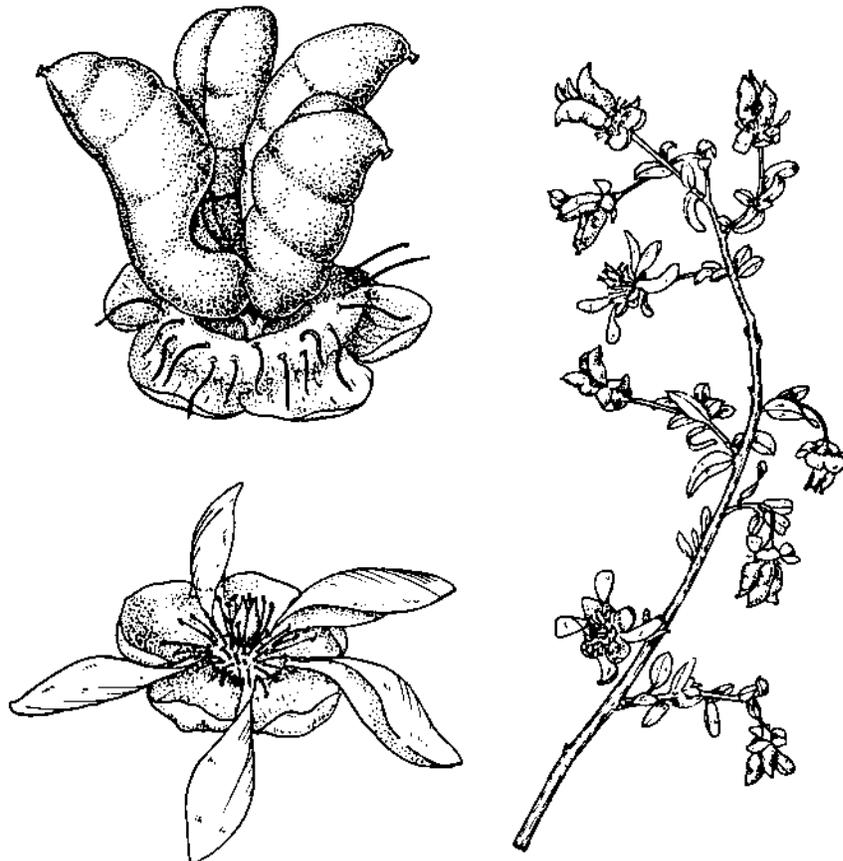
FAMILY (COMMON NAME) | Crossosomataceae (Crossosoma Family)

SYNONYMS | None

DISTRIBUTION | Mohave County, Arizona and Sonora, Mexico. In Grand Canyon NP it is recorded from CRM 275 R. It is also found outside the park boundaries at Whitmore Canyon, Quartermaster Canyon, and Snap Canyon.

HABITAT | Perennial shrub. Muav Limestone cliffs, ledges, and steep rock outcrops in desertscrub community, 5,000 feet, February to April.

LOOK-ALIKES | Similar to *C. bigelovii*, a more common species growing in western Grand Canyon but differs in having follicles about 6 mm long and abruptly short-beaked. Some taxonomists consider *C. parviflorum* a variety, calling it *C. bigelovii* var. *bigelovii*. The later entity is widespread in Yavapai, Mohave, Gila, Pinal, Maricopa, Pima, and Yuma Counties, Arizona, and California and Mexico.



- Fruits from each flower in group of 2 to 5
- Stalked petals 10 mm long
- Stamens 15-50 in number, spirally arranged on floral tube
- Flowers white and fragrant
Leaves smooth

SCIENTIFIC NAME | *Cryptantha capitata* (Eastw.) Johnst.

COMMON NAME | None, but sometimes called hermit catseye. *Cryptantha* is from the Greek word meaning hidden flowers, in reference to the cleistogamous, or self-fertilized without opening, nature of the flowers and *capitata* means head-shaped in reference to the flowers collected into a head-like cluster.

FAMILY (COMMON NAME) | Boraginaceae (Borage Family)

SYNONYMS | *Oreocarya capitata* Eastwood

DISTRIBUTION | Utah and Coconino County, Arizona. In Grand Canyon NP it is known from Hermit Canyon, Dripping Springs, Grandview, South Kaibab, and North Kaibab Trails, Nankoweap Canyon, and Deer Creek.

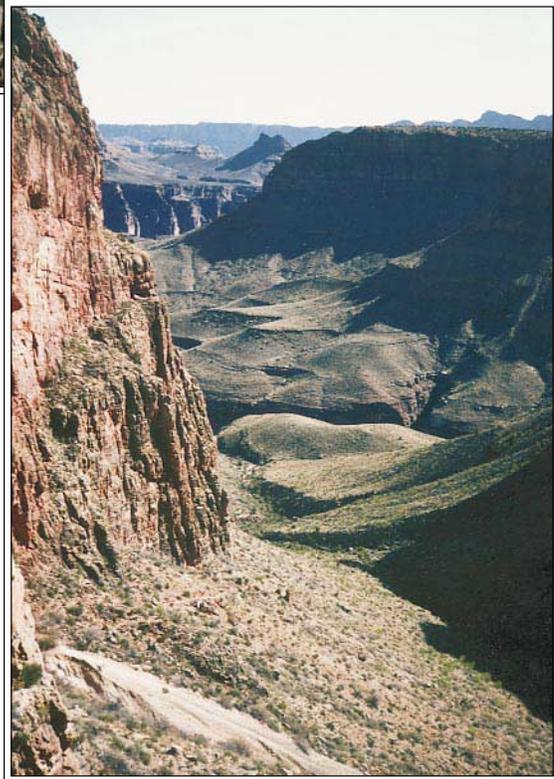
HABITAT | Perennial herb. Sandy to loamy soils in pinyon-juniper, sagebrush, and mountain brush communities, 5,600 to 8,300 feet, April to June.

LOOK-ALIKES | Related to *C. confertiflora*, but differs by small stature, white rather than yellow flowers, and more sparsely hairy, hence greener. *C. capitata* may be combined with *C. confertiflora* at some future date.

- *White flowers*
- *10-30 cm high*
- *Sparsely hairy*
- *Small, lateral flowers reduced or absent*
- *Flowers in a head-like cluster*



Closeup of *cryptantha capitata*
— BY N. BRIAN



Habitat — BY N. BRIAN



Plant sample from
herbarium sheet.

SCIENTIFIC NAME | *Draba asprella* Greene var. *kaibabensis* C. L. Hitchc.

COMMON NAME | None, but called Kaibab draba or sometimes called Kaibab whitlow-grass. *Draba* is from the Greek word for acrid, *asprella* means rough, uneven, harsh, or rugged, and *kaibabensis* means of or from the Kaibab Plateau.

FAMILY (COMMON NAME) | Cruciferae or Brassicaceae (Mustard Family)

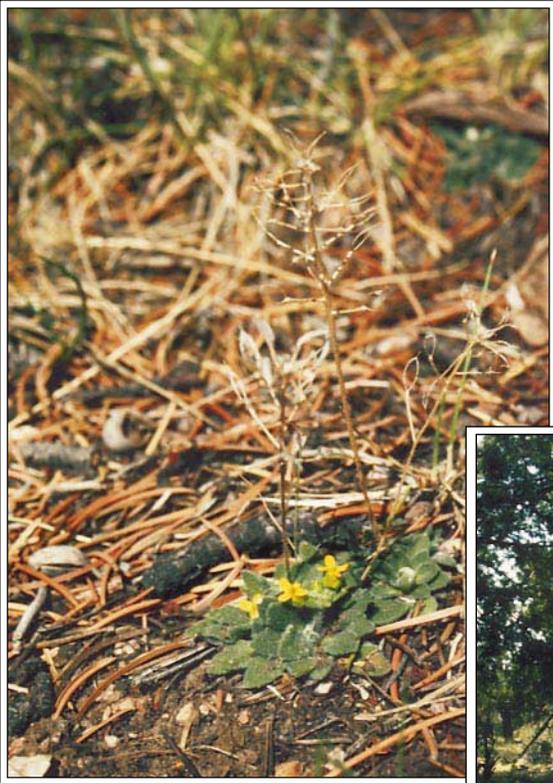
SYNONYMS | This variety may be recombined or submerged into *D. asprella* Greene var. *asprella* Greene.

DISTRIBUTION | Endemic to Grand Canyon NP, Coconino County, Arizona. In Grand Canyon NP it is reported from the Walhalla Plateau, Tiyo Point, Kaibab Trail to Roaring Springs, and elsewhere on the North Rim.

HABITAT | Perennial herb. Coniferous forests with ponderosa pine and Douglas fir, in shade and pine duff, 7,000 to 8,350 feet, June.

LOOK-ALIKES | Similar to *D. asprella* var. *stelligera*, but differs in having soft, forked, star-shaped hairs on the leaves.

- *Yellow petals*
- *Herb, 10-15 cm tall*
- *Pubescence of petioles and lower scapes soft and very dense*
- *Pubescence with branched or star-shaped hairs*
- *Leaves in basal rosettes*



General view of *Draba asperella* var.
kaibabensis — BY K. WARREN



Habitat — BY K. WARREN



Plant sample from
herbarium sheet.

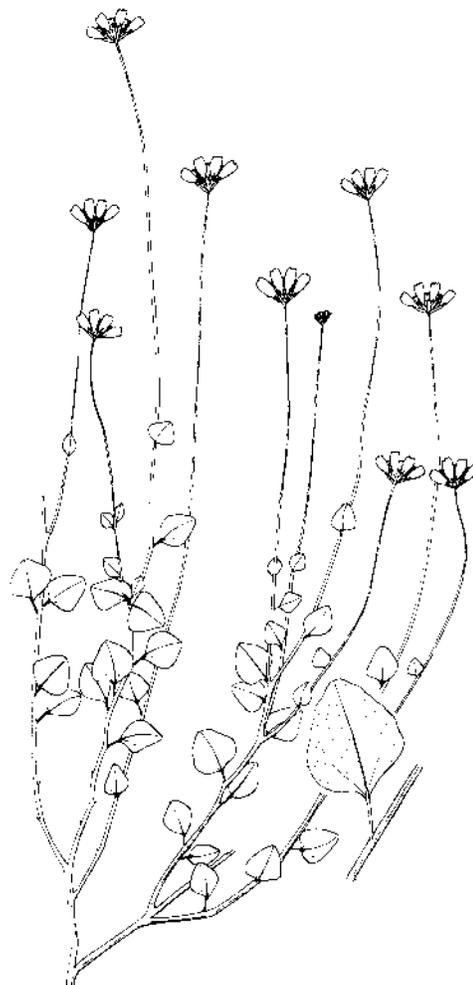
SCIENTIFIC NAME <i>Draba asprella</i> Greene var. <i>stelligera</i> O. E. Shulz
COMMON NAME None. <i>Draba</i> is from the Greek word for acrid, <i>asprella</i> means rough, uneven, harsh, or rugged, and <i>stelligera</i> means bearing stellately or star-shaped hairs.
FAMILY (COMMON NAME) Cruciferae or Brassicaceae (Mustard Family)
SYNONYMS None. This variety may be recombined or submerged into <i>D. asprella</i> Greene var. <i>asprella</i> Greene.
DISTRIBUTION Endemic to Yavapai and Coconino Counties, Arizona. In Grand Canyon NP it is reported from North Rim at Neal Spring, Thompson Canyon, Powell Saddle, and Transept Trail.
HABITAT Perennial herb. Sandy, wooded bluffs, pine forests, and chaparral hillsides, 5,300 to 8,000 feet, May.
LOOK-ALIKES Similar to <i>D. asprella</i> var. <i>kaibabensis</i> , but differs in having coarse, long, and stiff hairs on the leaves.

- *Yellow petals*
- *Leaves in basal rosettes*
- *Herb, 10–15 cm tall*
- *Pubescence of leaf blades and lower stems coarse and stiff*

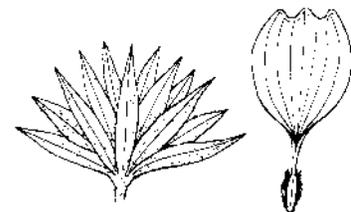


Plant sample from
herbarium sheet.

SCIENTIFIC NAME <i>Encelia frutescens</i> Gray var. <i>resinosus</i> Jones
COMMON NAME None. <i>Encelia</i> honors Christopher Encel, a writer on oak-galls in 1577, <i>frutescens</i> means becoming shrubby, and <i>resinosa</i> means resinous in reference to the sticky nature of the plant.
FAMILY (COMMON NAME) Compositae or Asteraceae (Sunflower Family)
SYNONYMS None
DISTRIBUTION Navajo and Coconino Counties, Arizona. In Grand Canyon NP it is reported from Saltwater Wash (CRM 11.9 L), Marble Canyon Dam Site (CRM 40 R), National Canyon (CRM 166.5 L), near Lava Falls (CRM 179), and on cinder cones at Tuweep.
HABITAT Perennial shrub. Rocky slopes and mesas, 1,200 to 5,500 feet, March to June.
LOOK-ALIKES Similar to <i>E. frutescens</i> , but differs in having conspicuous yellow ray petals in addition to the disk flowers and densely glandular flower bracts and stalks.



- Heads solitary at the end of pubescent stalks
- Leaves green and rough-hairy
- Yellow ray and disk flowers present in flowers
- Rounded, much-branched, white-barked shrub





Example of one habitat – BY K. WARREN

SCIENTIFIC NAME | *Epipactis gigantea* Douglas ex Hook.

COMMON NAME | Giant helleborine. *Epipactis* is probably from the Greek word epipaktis, an ancient name for the Eurasian, poisonous hellebore plant, and *gigantea* means gigantic.

FAMILY (COMMON NAME) | Orchidaceae (Orchid Family)

SYNONYMS | *Limodorum giganteum* Kuntze, *Peramium giganteum* J.M. Coulter, *Serapias gigantea* A. A. Eat., *Helleborine gigantea* Druce, *Amesia gigantea* Nels. & Macbr.

DISTRIBUTION | North America. In Arizona, it is known from Coconino, Mohave, Cochise, and Pima Counties. In Grand Canyon NP it is not truly "rare" as it is commonly found from Vasey's Paradise (CRM 32) downstream to the Grand Wash Cliffs (CRM 277), and from North Kaibab Trail, Cliff Spring, Powell Spring, and Saddle Horse Spring. It is also found at Mooney Falls in Havasu Canyon, on Supai Tribal lands.

HABITAT | Perennial herb. Wet places and moist soil on seepage slopes, bases of cliffs, along rivers, also in hanging gardens and seeps in desert areas, 3,000 to 8,000 feet, April to July.

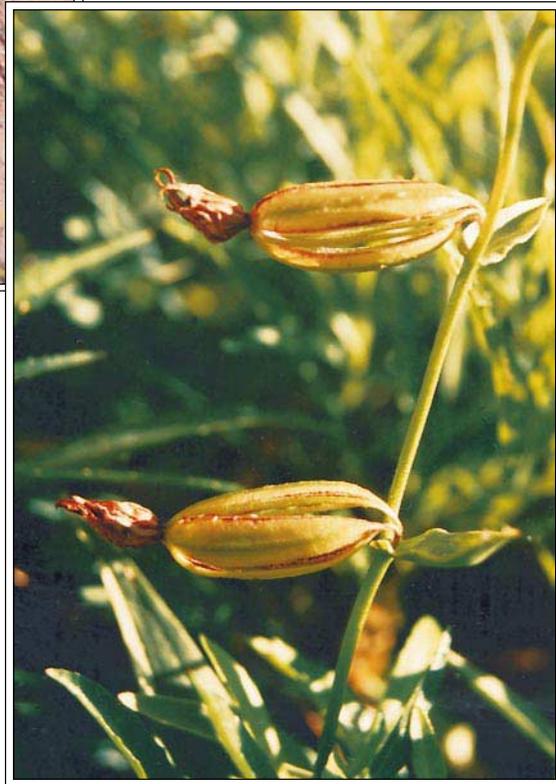
LOOK-ALIKES | None, but could be confused with other orchids, but differs by having leafy stems and 3-7 showy flowers usually placed on one side of the stem.



- Flowers brownish purple with raised purplish lines and lobes yellowish
- Sepals with a greenish sheen
- Leaves with parallel veins



General view of *Epipactis gigantea*
— BY N. BRIAN



Closeup of fruit — BY K. WARREN

SCIENTIFIC NAME <i>Erigeron lobatus</i> A. Nels.
COMMON NAME None, but the genus is often called fleabane, in reference to the supposed ability of some species to rid one of fleas. <i>Erigeron</i> is from Greek words <i>eri</i> meaning early and <i>geron</i> meaning old age, or old man. It was also the ancient name of an early-flowering plant with hoary down. <i>Lobatus</i> means lobed, in reference to the leaves.
FAMILY (COMMON NAME) Compositae or Asteraceae (Sunflower Family)
SYNONYMS None
DISTRIBUTION Endemic to Coconino, Mohave, Graham, Pima, and Yuma Counties, Arizona. In Grand Canyon NP it is reported along the Colorado River from CRM 15 to 237.
HABITAT Biennial or short-lived perennial herb. Plains, mesas, rocky slopes, side canyons, and beaches in sandy soils, generally 1,500 to 3,500 feet, but can be found to 7,000 feet, February to May or October to June.
LOOK-ALIKES Similar to <i>E. divergens</i> , but differs by the pinnately lobed leaves and long pilose pubescence of the stem and leaves. Also, similar to <i>Aster subulatus</i> (= <i>A. exilis</i>) which has phyllaries or flower bracts in 3-4 series.

- Stout, somewhat woody, short prostrate stems on or below the ground which root at nodes and produce shoots
- Leaves hairy with white, spreading, glandular hairs
- Leaf blades pinnately lobed or dentate, 3-6 cm long
- Ray flowers purple or lavender on long, naked stalks
- Flower bracts green with a faint brown midvein
- Small disk flowers, 2-3 mm long



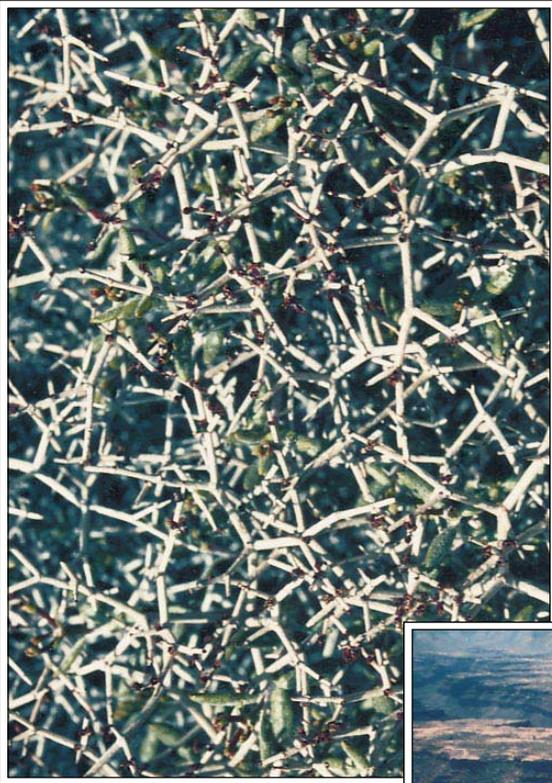
Plant sample from herbarium sheet.



Plant sample from herbarium sheet.

SCIENTIFIC NAME <i>Eriogonum heermannii</i> Dur. & Hilg. var. <i>subracemosum</i> (S. Stokes) Reveal
COMMON NAME None, but called Heermann wild buckwheat. <i>Eriogonum</i> is from a Greek word meaning wooly knees, from the hairy nodes on some species, <i>heermannii</i> honors Adolphus Lewis Heermann, 1827-1865, an ornithologist and surgeon-naturalist who collected plants in California; and <i>subracemosum</i> referst to the tendency of the flowers to be collected in an elongated cluster or raceme.
FAMILY (COMMON NAME) Polygonaceae (Buckwheat Family)
SYNONYMS <i>Eriogonum howellii</i> Stokes var. <i>subracemosum</i> Stokes
DISTRIBUTION Endemic to Coconino, Mohave, and Navajo Counties, Arizona. In Grand Canyon NP it is recorded from Horseshoe Mesa, near Rampart Cave, Grama Point, SB Point, Vasey's Paradise, and Little Colorado River confluence.
HABITAT Perennial shrub. Limestone and sandstone ledges, steep dry slopes, and canyon rims in the Great Basin desertscrub and pinyon-juniper woodland, 2,000 to 8,400 feet, August to September.
LOOK-ALIKES Similar to <i>E. heermannii</i> var. <i>sulcatum</i> , but differs by the stems not being deeply angled or grooved.

- Stout branches
- Yellowish flowers
- Lanceolate leaves with thick tomentum on underside of leaves
- Epidermis crusted and with nipple-shaped projections



Closeup of *Eriogonum heermannii*
var. *subracemosum* — BY K. WARREN



Habitat — BY K. WARREN



Plant sample from
herbarium sheet.

SCIENTIFIC NAME <i>Eriogonum zionis</i> J. T. Howell var. <i>coccineum</i> J. T. Howell
COMMON NAME None, but many Eriogonums are called wild-buckwheats. <i>Eriogonum</i> is from a Greek word meaning wooly knees, from the hairy nodes on some species, <i>zionis</i> means of or from Zion in reference to the plant first being collected in Zion National Park, and <i>coccineum</i> means red, in reference to the scarlet or crimson flowers.
FAMILY (COMMON NAME) Polygonaceae (Buckwheat Family)
SYNONYMS <i>Eriogonum racemosum</i> var. <i>coccineum</i> (J.T. Howell) Welsh
DISTRIBUTION Endemic to Coconino and Mohave Counties, Arizona. In Grand Canyon NP it is reported from South Bass Trail, Darwin Plateau, Hermit Trail, Point Sublime, and the Kanab Canyon rim.
HABITAT Perennial herb. Limestone and sandstone substrate on steep, north-facing slopes, often in the shade in the pinyon-juniper woodland, 4,600 to 7,400 feet, July to September.
LOOK-ALIKES The red flower easily separates this variety from other perennial, scapose, wild-buckwheats.

- *Small, bright red flowers*
- *Leaves are wooly-hairy underneath*
- *Basal leaves with rounded tip and wedge-shaped base*



Closeup of *Eriogonum zionis* var. *coccineum*
— BY K. WARREN



Plant sample from
herbarium sheet.

SCIENTIFIC NAME | *Euphorbia aaron-rossii* A. & N. Holmgren

COMMON NAME | None. *Euphorbia* is a Latin word honoring Euphorbus, a physician to the King of Mauritania, an ancient northwest African kingdom during the 1st century. The species name, *aaron-rossii*, honors the plant's discoverer, Dr. Aaron B. Ross (1917-1973). Ross was a physician of Ogden, Utah, an avid boatman, and naturalist, who made many Colorado River boat trips.

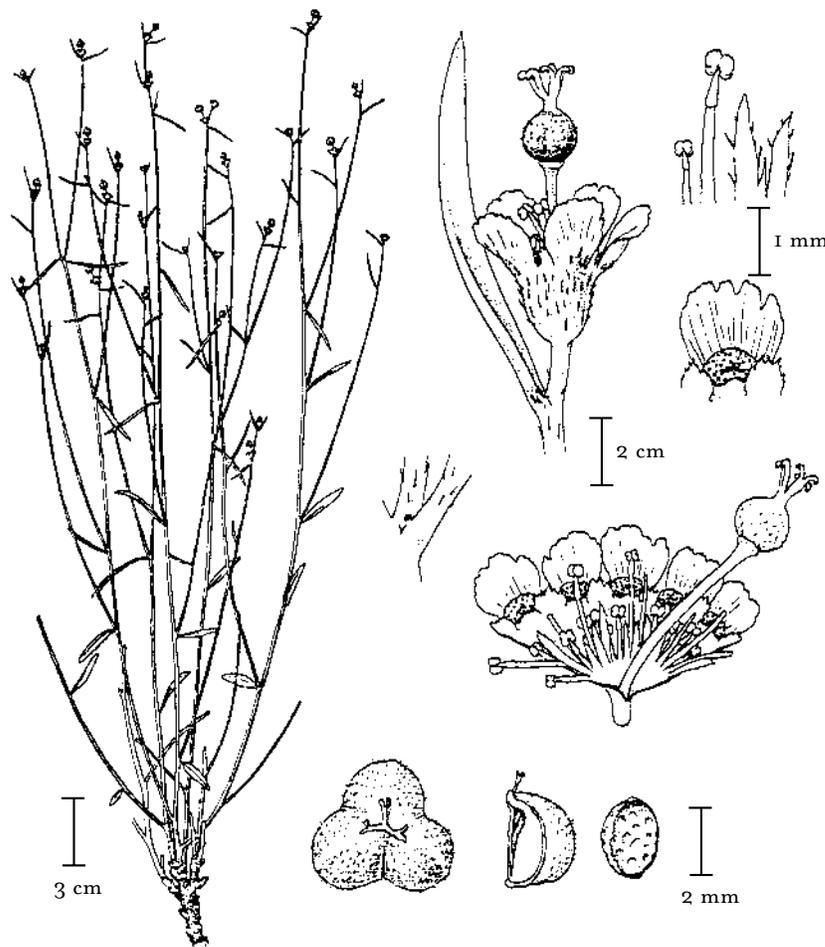
FAMILY (COMMON NAME) | Euphorbiaceae (Spurge Family)

SYNONYMS | None

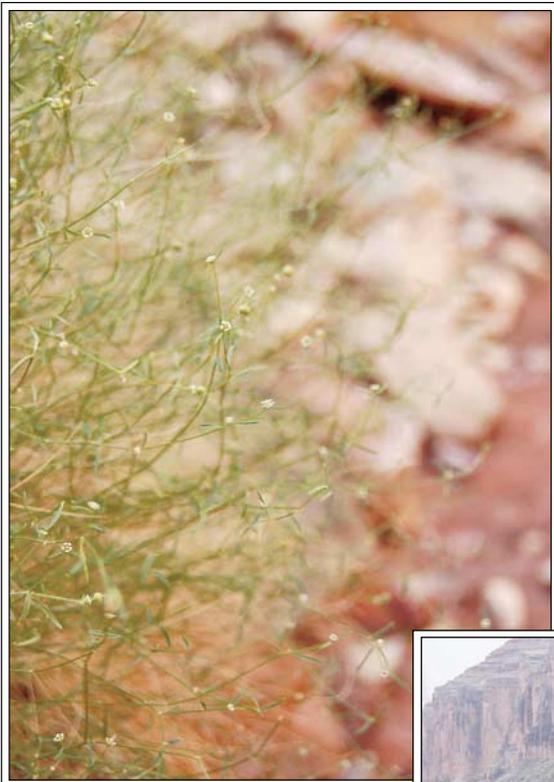
DISTRIBUTION | Endemic to Coconino County, Arizona. In Grand Canyon NP it is known from CRM 4.5 to Nankoweap Canyon (CRM 53) and Forster Canyon (CRM 123).

HABITAT | Perennial sub-shrub, somewhat woody at the base. Loose sandy soils of old river bars and dunes, occasionally on rocky limestone and sandstone slopes, 2,075 to 3,300 feet, April to October.

LOOK-ALIKES | None



- Alternate lower and upper leaves
- Cut stems exude white latex
- Leaves ovate to lanceolate and margins entire
- Wiry stems include dead ones from past seasons
- Five appendaged glands per flower
- Flowers solitary at the tips of branches, whitish-green or with a reddish tinge



Closeup of *Euphorbia aaron-rossii*
— BY D. ROTH



Habitat — BY D. ROTH

SCIENTIFIC NAME | *Flaveria mcdougallii* Theroux, Pinkava & Keil

COMMON NAME | None, but called McDougall's flaveria. *Flaveria* is from the Latin word *flavus* meaning yellow, in reference to the yellow flowers, and *mcdougallii* honors Dr. Walter B. McDougall, 1883-1980, a forest ecologist who wrote many floral manuals for both Yellowstone and Grand Canyon National Parks and northern Arizona.

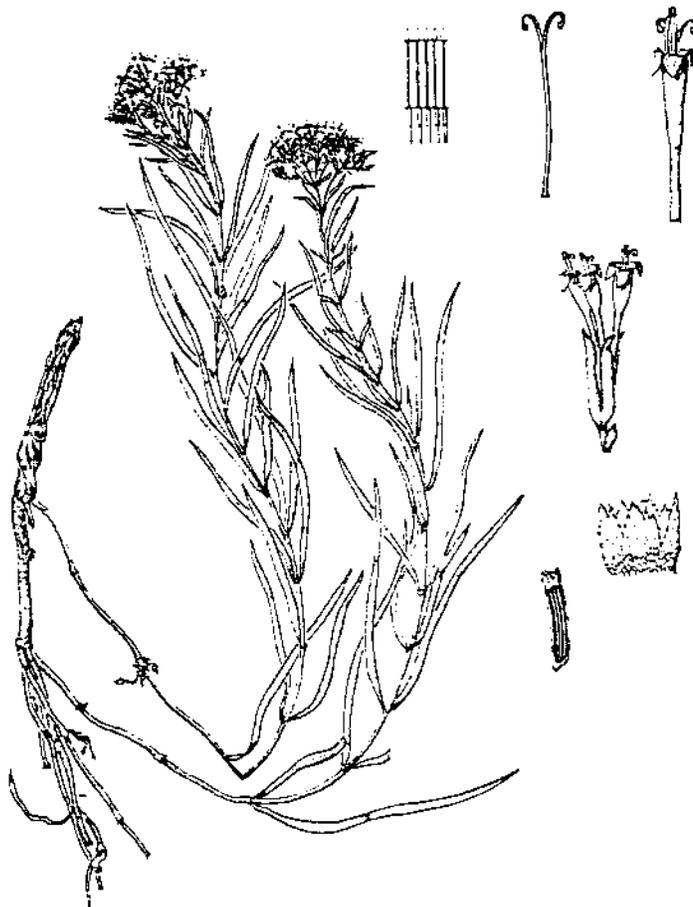
FAMILY (COMMON NAME) | Compositae or Asteraceae (Sunflower Family)

SYNONYMS | None

DISTRIBUTION | Endemic to Coconino and Mohave Counties, Arizona. In Grand Canyon NP it is reported from CRM 147.5R, Matkatamiba Canyon (CRM 148), Ledges Camp (CRM 152), CRM 155.5, Tuckup Canyon (CRM 164.5), CRM 166.5R, Fern Glen (CRM 168), and Cove Canyon (CRM 174). It is also found from CRM 160.5 to 178 in left bank seeps on Hualapai Tribal lands.

HABITAT | Perennial, clonal sub-shrub. Moist saline seeps and open slopes and benches above the Colorado River in the Muav Limestone and Bright Angel Shale, 1,800 to 1,670 feet, September to November.

LOOK-ALIKES | None



- Flat-topped to convex inflorescence
- Opposite, narrowly linear leaves with entire margins
- No ray flowers
- Yellow disk flowers number 3-6
- Woody, horizontal prostrate stems on or below the ground which root at nodes and produce shoots



Closeup of *Flaveria mcdougallii*
— BY K. WARREN

SCIENTIFIC NAME | *Fraxinus cuspidata* Torr. var. *macropetala* (Eastw.) Rehd.

COMMON NAME | Fragrant ash. *Fraxinus* is an ancient Latin word, *cuspidata* means cuspidate or tipped with a cusp or a sharp, short, rigid point, and *macropetala* means large petals, in reference to the presence of showy petals.

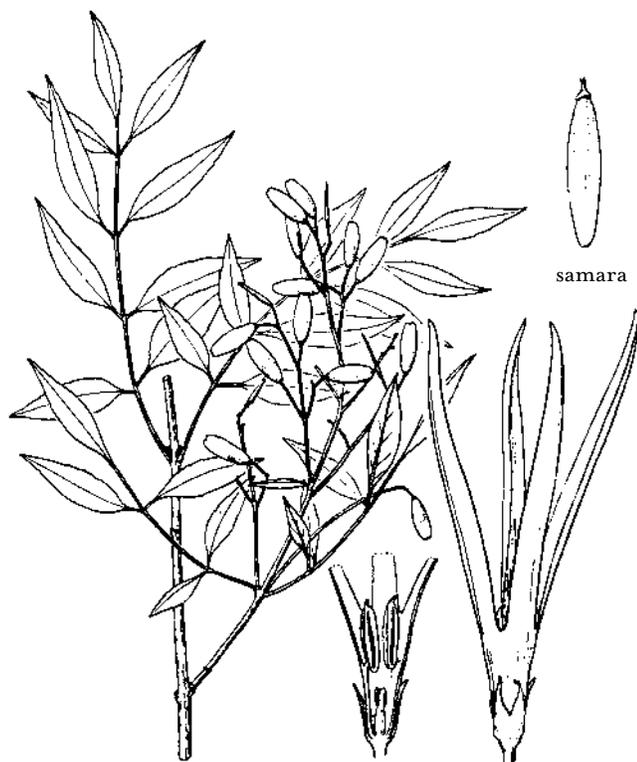
FAMILY (COMMON NAME) | Oleaceae (Olive Family)

SYNONYMS | None

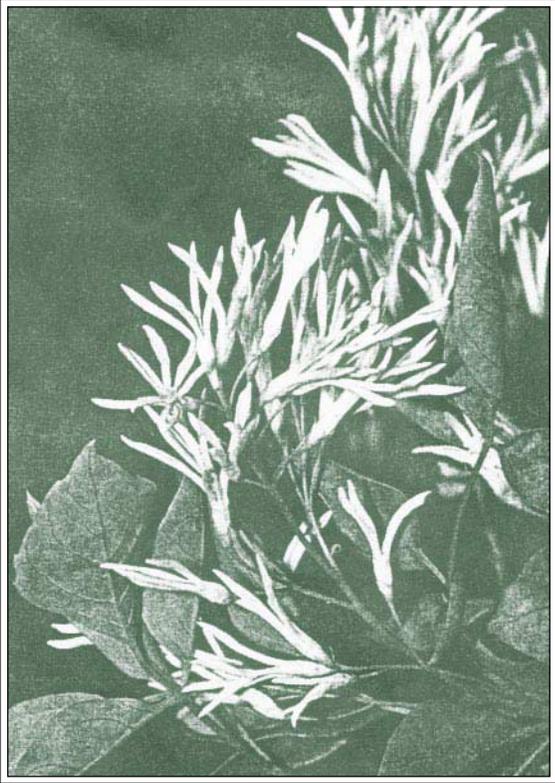
DISTRIBUTION | Endemic to Navajo, Coconino, and Mohave Counties, Arizona. In Grand Canyon NP it is recorded from North Rim (no definite locality), Tuckup Canyon, rims above Kanab Canyon, Hack Canyon, Water Canyon Point, 150 Mile Canyon, Manakacha Point, Bright Angel Trail, Hermit Trail, Dripping Springs Trail, Huxley Terrace, Havasu Canyon, Parashant Canyon, Trail Canyon, Tuckup Canyon, and Upper Grand Wash Cliffs.

HABITAT | Perennial tree or small shrub. Steep, rocky slopes, ledges, crevices, and at cliff bases in canyons, often within Kaibab Limestone and Redwall Limestone outcrops (but also recorded on sandstone, basalt, and Chinle shale soils), often in shaded areas, 4,000 to 7,500 feet, April to June.

LOOK-ALIKES | None. The conspicuous, fragrant flowers are diagnostic. Without flowers, it could be confused with *F. pennsylvanica* ssp. *velutina* (velvet ash), but differs by not having toothed edges to the leaflets and not being found in riparian areas. *F. anomala* (single-leaf ash) has single, not pinnate, somewhat heart-shaped leaves. Fragrant ash can easily be distinguished from *Ptelea trifoliata* (hoptree), by not having odiferous leaves and bark.



- Flowers with four, white petals
- Blossom fragrant
- Leaflets fewer and broader than the typical species
- Shrub or small tree 1 to 7 m tall
- Leaves with 3-7 leaflets
- Stamens shorter than petals
- Fruit with wing (a samara) about 12 mm long



Closeup of *Fraxinus cuspidata* var. *macropetala*

SCIENTIFIC NAME | *Galium bifolium* Wats.

COMMON NAME | None, but often called bedstraw, as some species were used in the past to stuff mattresses. *Galium* is from a Greek word *gala* meaning milk, which is curdled by some species of the genus and *bifolium* meaning two or twinleaf, in reference to the leaves sometimes being reduced to one pair.

FAMILY (COMMON NAME) | Rubiaceae (Madder Family)

SYNONYMS | None

DISTRIBUTION | British Columbia, Montana, Colorado, California, and Coconino County, Arizona. In Grand Canyon NP it is known from Greenland Lake on the Walhalla Plateau and from Mt. Emma on the Uinkaret Plateau.

HABITAT | Annual herb. Mountain brush, sagebrush, ponderosa pine, meadow, lodgepole pine, aspen, and spruce-fir communities, 6,200 to 10,600 feet, May to June.

LOOK-ALIKES | None

- *Leaves not hairy and very unequal in whorl*
- *Leaves sometimes reduced to one pair*
- *Flowers white and solitary on stems arising from leaf axils*
- *Cotyledons persistent*



Plant sample from
herbarium sheet.

SCIENTIFIC NAME | *Haplopappus cervinus* Wats.

COMMON NAME | None, but sometimes called tawny turpentine bush or antelope goldenbush. *Haplopappus* means simple or single pappus, the apical tuft of hair or bristles on a the seeds of the sunflower family and *cervinus* is a Latin word meaning relating to, resembling, or typical of a deer or antelope, as per the common name.

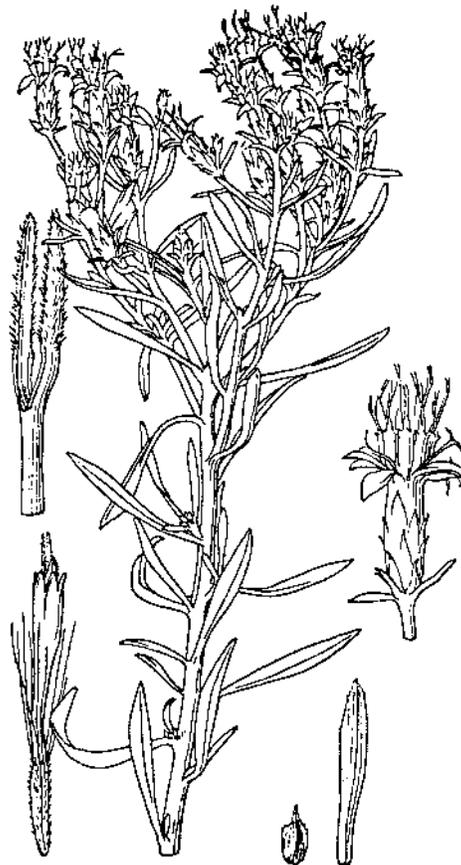
FAMILY (COMMON NAME) | Compositae or Asteraceae (Sunflower Family)

SYNONYMS | *Ericameria cervina* (Wats.) Rydb., *Haplopappus nanus* (Nutt.) D. C. Eaton var. *cervinus* Gray, *Aplopappus cervinus* Wats.

DISTRIBUTION | Utah, Nevada, and Coconino and Mohave Counties, Arizona. In Grand Canyon NP it is recorded from Boysag Point, Grandview Trail, Kanab Canyon, and Bright Angel Trailhead.

HABITAT | Perennial subshrub. Rocky canyons in limestone, dolomite, less commonly on ash-flow or granitic soils, in the pinyon-juniper woodland and ponderosa pine forests (but also found in black sagebrush, shadscale, mountain brush, and Douglas fir-bristlecone pine communities in Utah), 5,000 to 7,500 feet, June to October.

LOOK-ALIKES | Could be confused with *H. scopulorum* and *H. watsonii*, but differs by lower stature, no stipitate glands on leaves, sticky-resinous flower heads, and ovate leaves with smooth margins.



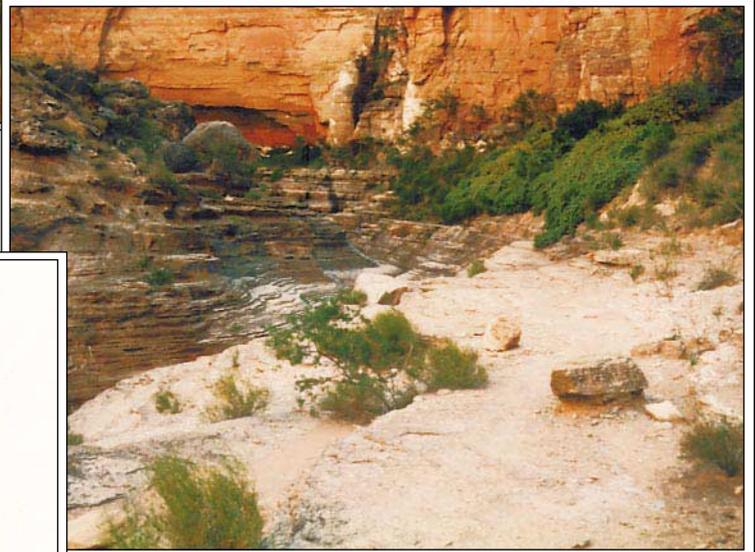
- Low shrub, about 15 cm
- Involucre bracts about 25 in about 5 series
- No stalked glands on leaves
- Leaves with smooth margins or slightly uneven and wavy
- Sticky-resinous flower heads
- Few ray petals, mostly disk flowers

SCIENTIFIC NAME <i>Haplopappus salicinus</i> Blake
COMMON NAME None, but translates as salty goldenweed, sometimes called burroweed. <i>Haplopappus</i> means simple or single pappus and <i>salicinus</i> means salty.
FAMILY (COMMON NAME) Compositae or Asteraceae (Sunflower Family)
SYNONYMS <i>Aplopappus salicinus</i> Blake
DISTRIBUTION Endemic to Grand Canyon NP, in Coconino and Mohave Counties, Arizona. In Grand Canyon NP it is recorded from Kwagunt Canyon (CRM 26 R), Tatahatso Camp (RM 38 L), Marble Canyon Dam site (CRM 40 R), Grandview Trail, Clear Creek (CRM 84 R), Bright Angel Trail, South Bass Trail, Elves Chasm (CRM 116.5 L), Matkatamiba Canyon (CRM 148 L), 185 Mile Canyon, and above Columbine Falls (CRM 274 L).
HABITAT Perennial shrub. Shaded limestone (Muav and Redwall Limestones) walls, seeps, and boulders, 1,200 to 4,700 feet, September to November.
LOOK-ALIKES Could be confused when using an identification key with <i>Hesperodoria scopulorum</i> (= <i>Haplopappus scopulorum</i>) or <i>H. heterophyllus</i> , but differs in having densely impressed-punctate leaves which are not resinous and heads not numerous in dense, terminal cymes.

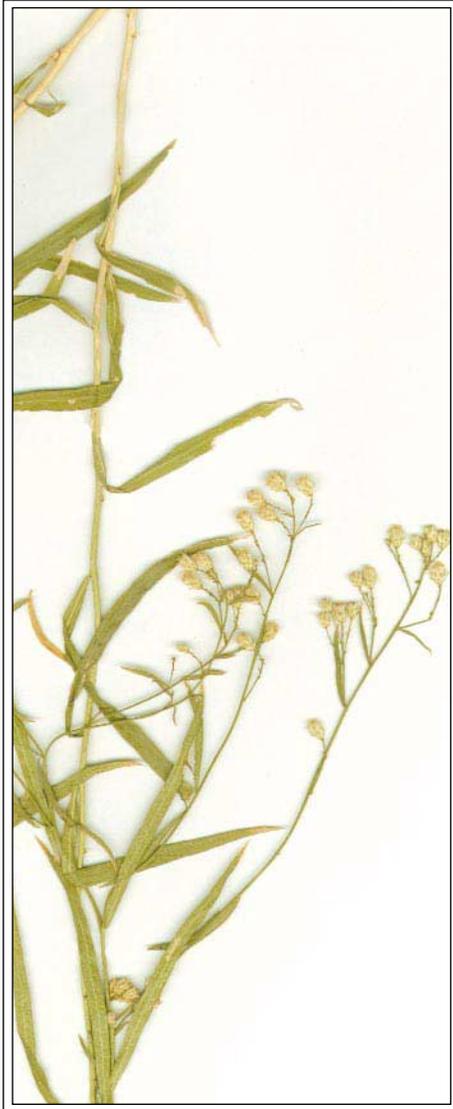
- *Leaves densely impressed-punctate*
- *Leaves linear-lanceolate and 3-ribbed*
- *Shrubby plants with woody base*
- *Small, disk flowers only*



Closeup of *Haplopappus salicinus*
— BY K. WARREN



Habitat — BY K. WARREN



Plant sample from
herbarium sheet.

SCIENTIFIC NAME | *Hesperodoria scopulorum* (M.E. Jones) Greene var. *scopulorum* (M.E. Jones) Greene

COMMON NAME | None, but sometimes called spindly goldenbush, goldenweed, rock hesperodoria, and Grand Canyon evening daisy. The meaning of *Hesperodoria* is obscure. It may be derived from the Greek words meaning evening or relating to the west, or it may relate to the planet Venus (Hesperus) in its appearance as the evening star. Or it may be related to the Greek myth of the Hesperides, the nymphs who together with a dragon watch over a garden that produces golden apples. *Scopulorum* means of rocky places, cliffs, or crags.

FAMILY (COMMON NAME) | Compositae or Asteraceae (Sunflower Family)

SYNONYMS | *Haplopappus scopulorum* (Jones) Blake, *Bigelovia menziesii* M. E. Jones var. *scopulorum* M. E. Jones, *H. scopulorum* (M.E. Jones) Greene var. *hirtellus* Blake, *Isocoma scopulorum* (M. E. Jones) Rydberg

DISTRIBUTION | Utah and Coconino and Mohave Counties, Arizona. In Grand Canyon NP it is reported from North and South Rims without definite locality, and Grandview, Bright Angel, and South Bass Trails.

HABITAT | Perennial shrub. Rocky, sandy or loam soils in mixed desert shrub, hanging garden, mountain brush, ponderosa pine and pinyon-juniper woodlands in sandstone or limestone derived soils in the Coconino Sandstone and Muav Limestone, 3,700 to 6,700 feet, June to October.

LOOK-ALIKES | None, but could be confused with *Haplopappus salicinus*, but differs by not having impressed-punctate leaves and larger flower heads.



- Branches slender, willowy subshrub
- Bark smooth, white, and shining
- Principle leaves 3-nerved, linear-lanceolate to grass-like
- 10-20 yellow disk flowers (no ray flowers)
- Pappus hairs very fine, soft, and white
- Leaf margins fringed with very short hairs

SCIENTIFIC NAME | *Hymenoxys subintegra* Ckl.

COMMON NAME | None, but sometimes called bitterweed and perky Sue. *Hymenoxys* is from a Greek word meaning sharp membrane, in reference to the membranous, often awn-tipped scales of the pappus of the fruit, while *subintegra* means almost entire.

FAMILY (COMMON NAME) | Compositae or Asteraceae (Sunflower Family)

SYNONYMS | *Actinea subintegra* (Ckl.) Blake

DISTRIBUTION | tah and Coconino County, Arizona. In Grand Canyon NP it is reported from North Rim, Cape Royal, Point Sublime, Harvey Meadow, gravel pit north of Marble Flats, mouth of Big Spring Canyon, Kanabownits Spring, Fawn Spring, Swamp Lake, Upper Little Park, and below Neal Spring.

HABITAT | Perennial or biennial herb. Edge of ponderosa pine and spruce-fir forests in subalpine meadows, juniper-sagebrush community, and in disturbed soils bordering roadsides, full sun, 6,000 to 9,000 feet, July and August. It is considered an invader species which colonizes degraded or disturbed soils.

LOOK-ALIKES | Could be confused with *H. cooperi*, but differs by pale, gray pubescent leaves which are either broadly linear or divided into three linear lobes, each greater than two mm wide.

- Stout taproot
- Leaves basal, pale, and hoary with gray pubescence
- Leaves either broadly linear and entire or divided into 3 linear lobes
- Solitary stems branched above, 10–60 cm tall
- Yellow ray and disk flowers
- Basal rosette of wooly bracts subtend the flower



Closeup of *Hymenoxys subintegra*
— BY K. WARREN



General view — BY K. WARREN



Habitat — BY K. WARREN

SCIENTIFIC NAME | *Imperata brevifolia* Vasey

COMMON NAME | Satintail. *Imperata* honors Ferrante Imperato, an Italian naturalist of the 1500's and *brevifolia* means short leaf.

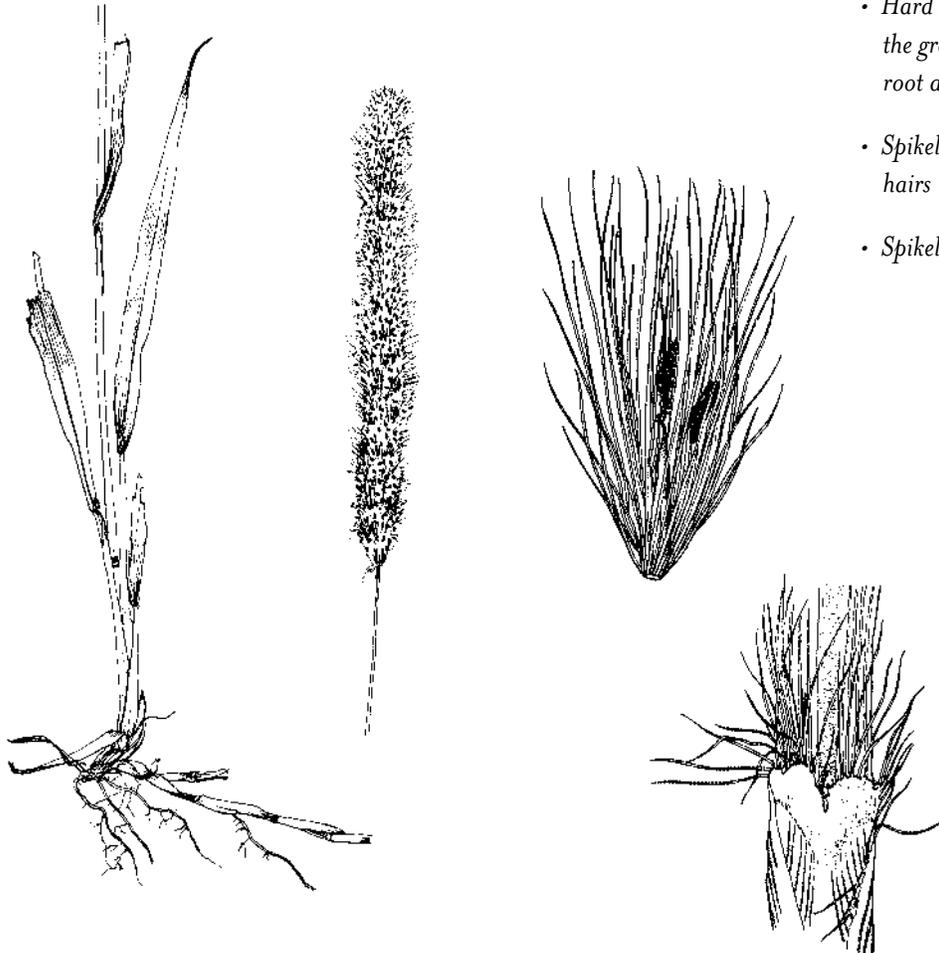
FAMILY (COMMON NAME) | Gramineae or Poaceae (Grass Family)

SYNONYMS | *Imperata hookeri* Rupr. ex Hack.

DISTRIBUTION | Texas to Utah, Nevada, California, Mexico, and Coconino, Mohave, Yavapai, Santa Cruz, and Pima Counties, Arizona. In Grand Canyon NP it is found along the Colorado River from Clear Creek (CRM 83.5) to Diamond Creek (CRM 225), Pipe Creek, Bright Angel Creek, Stone Creek, Thunder River, Tapeats Creek, and Havasu Canyon. It was once common in Glen Canyon, prior to Glen Canyon Dam creating Lake Powell.

HABITAT | Perennial grass. Rocky desert canyons and wet places, 1,200 to 6,000 feet, May to October.

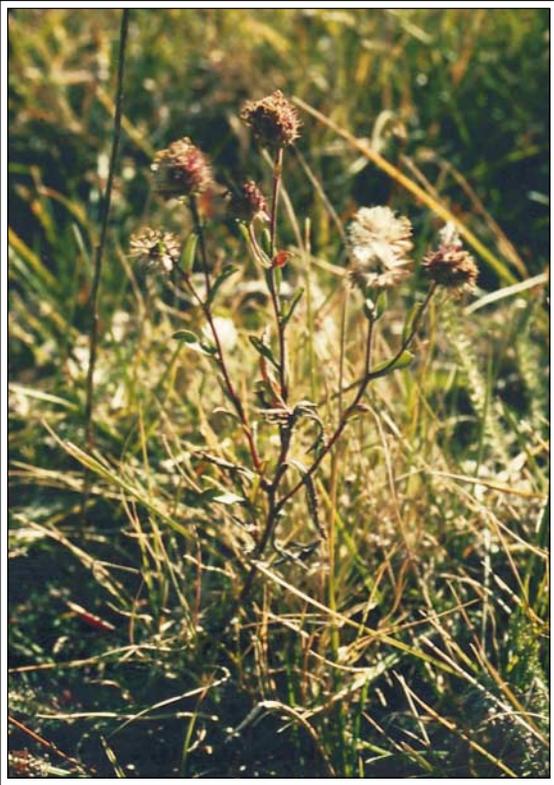
LOOK-ALIKES | None



- Hard scaly prostrate stems on or below the ground surface or underground which root at the nodes and produce shoots
- Spikelets with soft, long, white or tawny hairs
- Spikelets fall from the rachis when ripe

SCIENTIFIC NAME <i>Machaeranthera mucronata</i> Greene
COMMON NAME None, but sometimes called Kaibab saber daisy. <i>Machaeranthera</i> is from the Greek word for sword-like anthers and <i>mucronata</i> means tipped with a short abrupt tip.
FAMILY (COMMON NAME) Compositae or Asteraceae (Sunflower Family)
SYNONYMS <i>Aster adenolepis</i> Blake
DISTRIBUTION Endemic to Kaibab Plateau, Coconino County, Arizona. In Grand Canyon NP it is reported from Robber's Roost, Cape Royal, Fuller Canyon, and Thompson Canyon.
HABITAT Perennial herb. Subalpine meadows and roadside, in spruce-fir forest, in loamy soil overlying Kaibab Limestone, 8,000 to 9,000 feet, July to September.
LOOK-ALIKES Other <i>Aster</i> or <i>Machaeranthera</i> species with purple flowers, but differs by presence of spreading phyllaries and glandular hairs on the phyllaries and stems.

- Perennial herb 10-40 cm tall
- Stems red-tinged
- Herbage hoary with gray pubescence
- Linear leaves 1-4 cm long, less than 5 mm wide
- Purple flowers solitary at ends of branches
- Phyllaries narrow with spreading tips



Closeup of *Machaeranthera mucronata*
— BY K. WARREN

SCIENTIFIC NAME | *Mortonia scabrella* Gray var. *utahensis* Coville

COMMON NAME | None, but commonly called sandpaper-bush or Utah sandpaper-bush. *Mortonia* honors S. G. Morton, a 19th century North American naturalist; *scabrella* means minutely rough, gritty, scurfy or scabrous in reference to the leaf surfaces; and *utahensis* means of or from Utah.

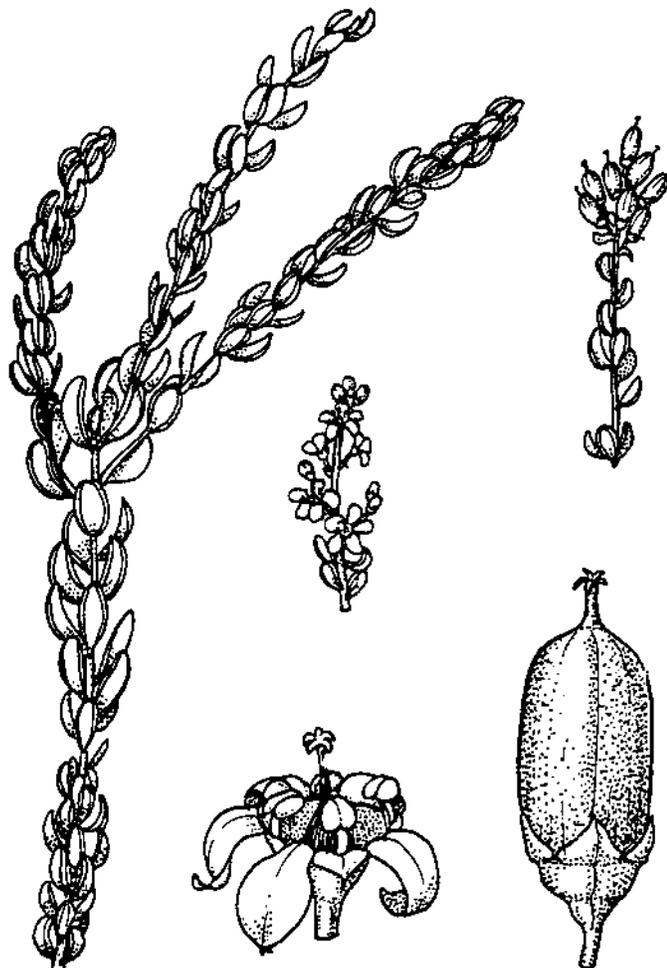
FAMILY (COMMON NAME) | Celastraceae (Bitter Sweet or Staff-Tree Family)

SYNONYMS | *Mortonia utahensis* A. Nelson

DISTRIBUTION | Utah, Nevada, California, and Coconino and Mohave Counties, Arizona. In Grand Canyon NP it is recorded from Havasu Canyon (CRM 156.6) downstream to Grand Wash Cliffs (CRM 277), upper Tuckup Canyon, and the Shivwitz Plateau.

HABITAT | Perennial, evergreen shrub. Dry plains, steep slopes, canyon bottoms, and mesas, often on limestone in the creosote bush or desertscrub community, 1,200 to 4,600 feet, March to September.

LOOK-ALIKES | None



- Plants yellowish-green with stiff, erect branches
- Leaves alternate, thick, stiff, curved, and leathery with thickened margins
- Minute and rough bristles on leaves
- Flowers with five white petals

SCIENTIFIC NAME | *Opuntia basilaris* Engelm. & Bigel. var. *longiareolata* (Clover & Jotter) L. Benson

COMMON NAME | Grand Canyon beavertail. *Opuntia* may be named for a spiny plant of Opus, Greece, or possibly from a Papago Indian word opun for this food plant; *basilaris* means basal or arising from the base, and *longiareolata* means elongated areole. An areole is a complex structure formed in the axil above the ephemeral leaves which give rise to clusters of tiny spines and or bristles, called glochids.

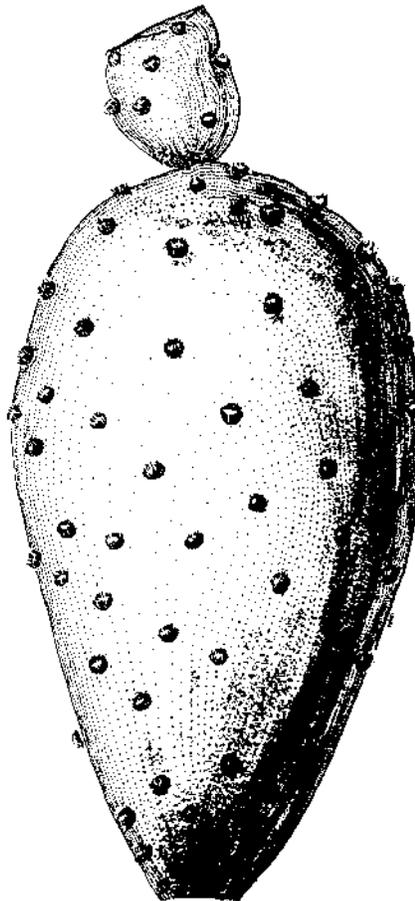
FAMILY (COMMON NAME) | Cactaceae (Cactus Family)

SYNONYMS | None

DISTRIBUTION | Variety is endemic to Grand Canyon NP, Coconino County, Arizona, where it is reported from Clear Creek and Bright Angel Canyon. It was originally collected from Granite Rapids at Monument Creek, but has yet to be re-documented at the type locality.

HABITAT | Succulent perennial cactus. Gravelly or rocky soils of talus slopes of the Granite Gorge, 2,350 to 4,000 feet, March to May.

LOOK-ALIKES | Similar to *Opuntia basilaris* var. *basilaris*, but differs in having spatulate joints, and elongated, not circular, areoles.

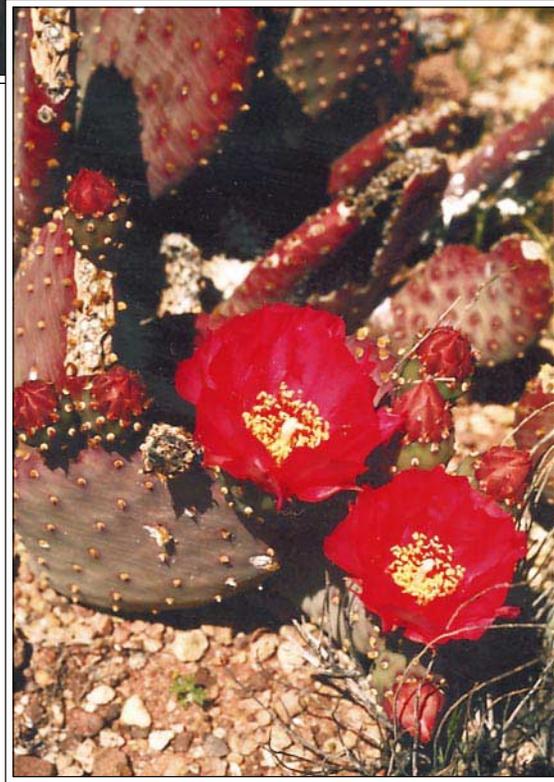


- Flowers light cerise to vivid purplish red
- Areoles elongate, 3mm long by 1 mm broad
- Joints spatulate
- No spines, only glochids

Drawing by Wendy Hodgson



General view of *Opuntia basilaris* var. *longiareolata*
— BY W. HODGSON



General view of *Opuntia basilaris* var. *longiareolata*
— BY W. HODGSON

SCIENTIFIC NAME | *Opuntia phaeacantha* Engelm. var. *mojavensis* Fosberg

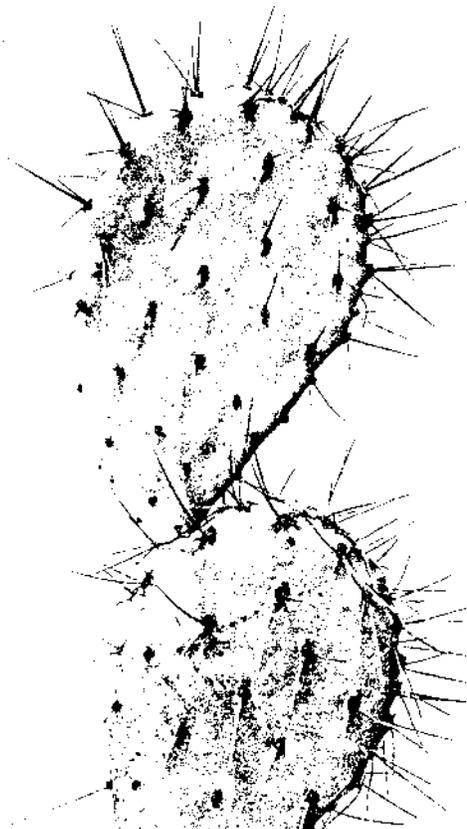
COMMON NAME | None, but sometimes called Mohave prickly pear. *Opuntia* may be named for a spiny plant of Opus, Greece, or possibly from a Papago Indian word opun for this food plant; *phaeacantha* means dark, dusky, or dun-colored spines or thorns from *phaea* meaning dark and *cantho* meaning thorn; and *mojavensis* means of or from Mohave, meaning the Mohave Desert.

FAMILY (COMMON NAME) | Cactaceae (Cactus Family)

SYNONYMS | *O. phaeacantha* var. *major*, *O. engelmannii* var. *cyclodes*, *O. linderheimeri* var. *cyclodes*, *O. cyclodes*, *O. mojavensis*, *O. phaeacantha* var. *brunnea*, *O. arizonica*, *O. gilvescens*, *O. toumeyi*, *O. blakeana*, *O. gregoriana*, *O. confusa*, *O. expansa*, *O. curvospina*, *O. flavescens*, *O. engelmannii* var. *flavescens*. Most taxonomic treatments list this variety as being *O. phaeacantha* var. *major*.

DISTRIBUTION | California, southern Nevada, southern Utah, southern Colorado, southern New Mexico, South Dakota, western Kansas, western Oklahoma, Texas Panhandle, Sonora and Chihuahua, Mexico, and Mohave, Pima, and Yuma Counties, Arizona. In Grand Canyon NP it is reported from Inner Canyon at river level the length of the Colorado River, Havasu Canyon, Cape Royal, and Moran Point, 1,200 to 7,900 feet, April to June.

LOOK-ALIKES | Other species of *Opuntia* and varieties of *O. phaeacantha*, but differs by the spreading, moderately long, brown spines restricted largely to the upper portion of the joint. When present, those on the flat sides of the joints tend to be shorter, fewer, and lighter in color.



- 1-3 spines per areole
- Petals yellow often with red streaks
- Dark brown spines on upper portion of pads
- Joints broadly obovate or nearly orbiculate