Utah State University Extension
electronic publishing

DESERT PLANTS OF UTAH

Original booklet and drawings by
Berniece A. Andersen

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FOREWORD

The original Desert Plants of Utah by Berniece A. Andersen has been a remarkably popular book, serving as a tribute to both her botanical knowledge of the region and to her enthusiastic manner. For these reasons, we have tried to retain as much of the original work, in both content and style, as possible. Some modifications were necessary. We have updated scientific names in accordance with changes that have occurred since the time of the first publication and we have also incorporated new geographic distributional data that have accrued with additional years of botanical exploration. The most obvious difference pertains to the organization of species. In the original version, species were organized phylogenetically, reflecting the predominant concepts of evolutionary relationships among plant families at that time. In an effort to make this version more user-friendly for the beginner, we have chosen to arrange the plants primarily by flower color. We hope that these changes will not diminish the enjoyment gained by anyone familiar with the original. We would also like to thank Larry A. Rupp, Extension Horticulture Specialist, for critical review of the draft and for the cover photo.

Linda Allen, Assistant Curator, Intermountain Herbarium
Donna H. Falkenborg, Extension Editor

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THE NATURE OF DESERTS

Deserts are areas characterized by limited water and unlimited sunshine. Most of them consist of vast stretches of open land with weather-sculptured rocks and hard bare earth called desert pavement. Only a few areas have the shifting dunes that are romanticized in literature.

There is no luxuriant plant growth in the desert, but the land is tufted at intervals with healthy and persistent plants that are well adapted to their habitat. Desert plants are restricted in size as well as numbers, leaving the landscape open to distant vistas and blue sky by day, and to an unparalleled panorama of brilliant stars by night.

All the world's deserts have at least one period of time each year when the sun's heat and glare are intense and the humidity is very low. In some geographic locations, deserts have cold seasons during which time they are covered with snow and ice.

The word "desert" is derived from "deserted" but, in truth, this land abounds with plants and animals. In the shimmering heat of summer daylight, it seems motionless except for the unceasing wind. From sundown to sunrise, as the earth cools, multitudes of nocturnal rodents come out of hiding to look for plants to eat. Hawks, owls, eagles, coyotes and other predators search for rodents. Most desert flowers are pollinated by insects. Their fruits and seeds, and the insect pollinators, become food for birds and animals. In a closely knit chain of life, one depends upon another for survival.

Desert climates are, on the whole, hostile to human habitation since they fail to provide our basic requirements of food, water and temperature. This, however, does not hold true for the plants and animals that are adapted to the desert habitat. Any appreciable change from their normal pattern would make it incompatible to them.

Oases

Within the confines of all large deserts, there are small oases or microhabitats that have more water than the surrounding areas. These are created by mountains that influence the temperature and rainfall patterns; or by ground water in the form of springs, aquifers, or weeping rocks. Such isolated habitats are found in Zion National Park, Arches National Monument and numerous other desert canyons in southern Utah. The plants native to these moist places are quite different from their desert neighbors and have no need of special drought-resisting adaptations.

Except for rivers of remote origin, water is rare in the flat areas of the desert and usually consists of springs that may be just water holes or may run short distances as small streams. Often they contain quantities of minerals that render them unusable for most plants and animals.

While kangaroo rats require only the water which they obtain from their food sources, most desert animals depend upon drinking water for survival. The desert is laced with small, much worn footpaths leading to water.

Water

Most of our desert areas receive from 5 to 10 inches of rainfall annually; but this in itself is only one of the factors involved in the amount of moisture that is available and how much is sufficient to support life. Temperature, duration of season, and elevation are all of vital

importance. At our high elevations, where there is a wide fluctuation in daytime and night-time temperatures, the condensation of moisture from the air in the form of dew can add substantially to the water supply.

Summer storms in the desert are infrequent but intense. They come suddenly and may drop relatively large quantities of rain in a few minutes. This water rushes down the bare ravines into dry stream beds (arroyos) filling them with torrents of muddy water and swirling foam. In a few hours they become dry again. The run-off from such storms is so rapid that only the surface soil becomes wet. Most of this evaporates before it can be utilized by the plants.

Even less water would be available to them were it not for the burrowing of small animals and insects. By making a network of tunnels beneath the surface of the earth they inadvertently make water available to plant roots.

Rainfall is a major factor in determining the patterns of erosion. Streams cut deep, vertical-sided canyons that, in desert areas, tend to retain this form. (On the other hand, liberal rainfall tends to level uneven terrain into broad valleys.) Rainfall also becomes significant in obliterating scars from the landscape. Because there is so little desert rain, trails made by pioneer wagons over a hundred years ago are still intact, and the shorelines along the Wasatch Front, made by waves on old Lake Bonneville more than 25,000 years ago, are in many places still clearly visible.

All these physical features characterize the desert, but there are less tangible things too: signals that alert the senses. There is the soft smell of wind mingled with alkali, the sharp smell of earth soaked with salt and newly fallen rain, the sweetness of wind-blown pollen, and the tangy pungence of sagebrush, rabbit brush, and resinous creosote.

In the continuous search of man's mind for freedom and tranquility, the desert offers boundless horizons. There is restfulness in its silence and its gray-tan monotony, luxury in its uncluttered space, and fulfillment in its solitude. Here we, like the prophets of old, can find soul-stretching awareness and spiritual sanctuary.

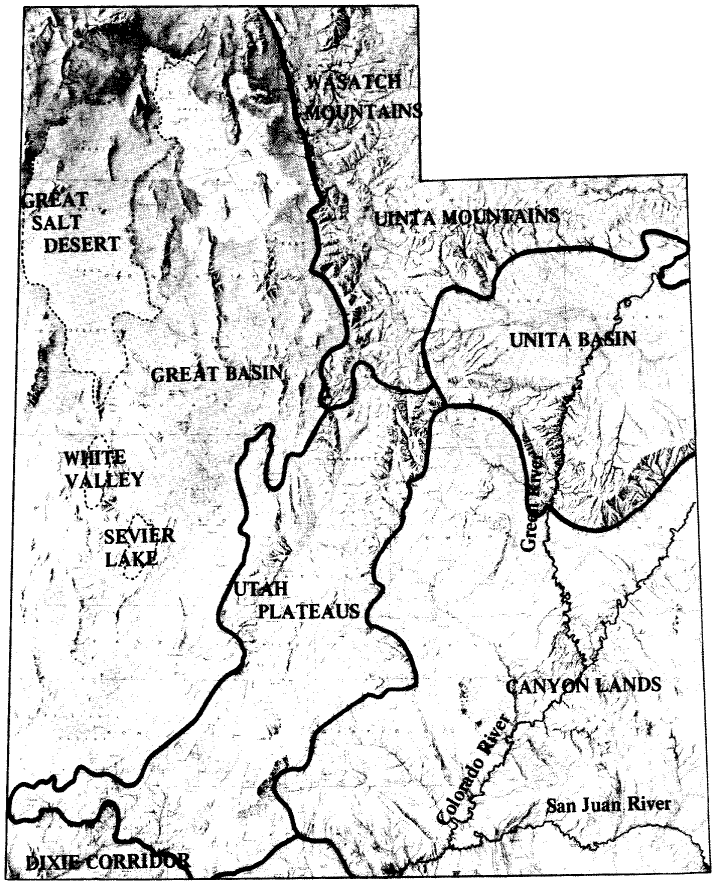
UTAH'S DESERTS

Utah's desert areas generally occur in valleys and plateaus at elevations between 2500 and 5000 feet. This relatively high elevation, in combination with a continental climate and a northern latitude, give rise to a cold desert environment. Snow is common during winter, while summer temperatures are hot, but less extreme than adjacent deserts to the south. Utah's deserts, however, are far from uniform. Substantial variation in topographic relief and geologic history results in four diverse arid regions that are defined and segregated by mountainous landscape features.

The Great Basin Desert extends from Nevada into much of western Utah. Bounded on the east and separated from the remainder of the state by the Wasatch Mountains and the High Plateaus, the Great Basin is characterized by an interior drainage system. The Great Salt Lake Desert occupies much of the region west of the Great Salt Lake on the saline flats of an ancient lakebed. For thousands of years Lake Bonneville contributed to mineral accumulations in the soils. Consequently, plants now growing in this region must tolerate high levels of soil alkalinity and salinity. In some areas vast playas encrusted with salt deposits exclude all vegetation. Precipitation levels average less than 10 inches annually, with rain occurring in the three

monthly peaks of May, August, and October.

The Southwestern corner of Utah has the lowest elevations and overall warmest temperatures in the state. Its regional name, the Dixie Corridor, attests to the mild winters. Supporting a vegetation more commonly found in deserts of adjacent Arizona and eastern California, it is classified as an extension of the Mohave Desert. A number of otherwise widespread desert plants occur within Utah only in the Dixie Corridor. Most of the meager precipitation of this region falls during the fall and winter seasons, with lesser accumulations during summer thunderstorms.



Utah's Deserts

To the east of the backbone created by the Wasatch Mountains and High Plateaus, the desert areas are divided into the Uinta Basin and the Colorado Plateau/Canyonlands. The majority of precipitation in the eastern half of the state results from summer thunderstorm activity. The Uinta Basin, bounded by the tall Uinta Mountains to the north and the Roan Cliffs to the south, has broad alluvial flats and rolling hills at a general elevation of about 5000 feet. The regional soils are predominantly fine-textured clays, silts, mudstones, and shales. To the south, the Colorado Plateau/Canyonlands region is distinguished by an excavated landscape of drainage systems associated with the Colorado and San Juan Rivers with mesas and plateaus stranded in between. It is characterized by spectacular sandstone rock formations and deep, sheer-walled canyons with brilliant geologic color.

In addition to soil type, elevation exerts a strong influence over the distribution of plants in Utah. It affects two significant limiting factors for desert plant survival: precipitation and soil salinity. Low elevation saline playas are practically barren. With small increases in elevation, salinity levels in the soil decline enough to sustain a few species of plants that can tolerate high concentrations of salts. The vegetation of these areas, Salt Desert Scrub, comprises many members of the Goosefoot Family (Chenopodiaceae) including low woody perennials, succulent herbaceous perennials, and annuals. As the effects of salinity become ameliorated by elevational gains to between 4500 and 6000 feet, deeper soils and precipitation that averages 8 to 14 inches, support a vegetation type known as Shrub Steppe. This widespread vegetation type is composed of various species of shrubs, commonly sagebrush, and grasses. Steeper slopes with shallower soils and higher elevations support Desert Woodlands. These often occur at elevations between

5000 and 8000 feet and receive more than 12 inches of precipitation annually. Pinyon pines and junipers constitute the dominant vegetation, and are subtended by a variety of low shrubs, herbaceous perennials, and annuals.

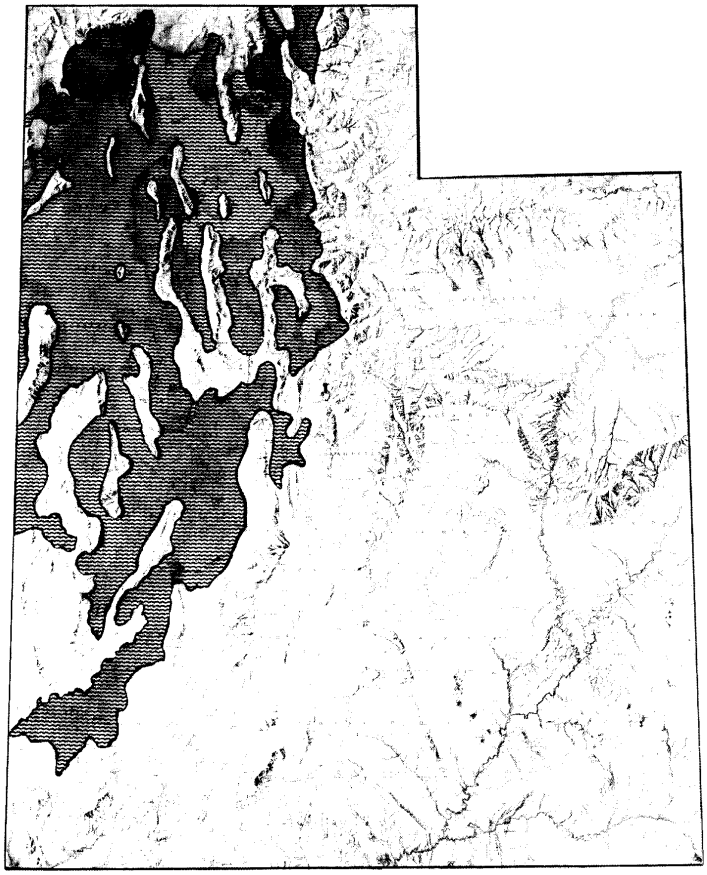
LAKE BONNEVILLE

In prehistoric times, western Utah and a strip along the eastern edge of Nevada were covered by a fresh water lake. It probably existed for many thousands of years before climate and other factors began to diminish its size. Today, all that remains of old Lake Bonneville are the shore line marks and the residual Great Salt Lake.

Geologists have traced its size and the fluctuations of its water levels and have speculated on its history. Some believe that about 25,000 years ago the water broke through its north bank at Red Rock Pass (about 30 miles north of the Utah-Idaho state line at the north end of Cache Valley), thus making a channel toward the Columbia River and on to the Pacific Ocean. This, they believe, marked the beginning of the end of America's largest prehistoric lake.

The shore lines are especially evident along the Wasatch Front where three, and sometimes four levels can be seen. In areas where the terrain rises abruptly, even large fluctuations in the water level made insignificant lateral differences to the location of the shore line. But, on relatively flat land such as that in the southern part of the Great Basin, a change of a few feet in water depth dramatically altered the location of the water's edge.

Our map delineates the probable shore line as it existed at its highest level.



Lake Bonneville

PLANTS IN THE DESERT

Water is a dominant factor limiting the survival of plants in the desert. On a regional scale plant distributions are influenced not only by total amount of annual precipitation, but also by its seasonal pattern of distribution. On a local scale a number of physical factors, such as topography, substrate, soil type, and orientation to the sun, contribute to the distribution of plants through the formation of microhabitats.

There are a variety of ways that plants survive in arid environments. All plants that persist in a desert climate have some mechanism that allows them to cope with water stress. Some plants avoid drought by growing only in response to precipitation and available soil moisture. Annual plants grow rapidly when the soil moisture is at a maximum. These can produce brilliant, if short-lived, carpets of bloom that deserts are famous for. By the time soil moisture has been depleted, these plants have set seed and withered, thus, avoiding the long dry season in a dormant seed stage.

Unlike annuals, perennials survive in the desert throughout the year. Some develop root systems that penetrate to great depths in order to tap into subterranean water. Yucca has been measured to reach 40 feet below the surface, while mesquite *(Prosopis)* roots can reach 100 feet in depth. Cacti spread a network of shallow roots, making a circular catch-basin, that can take advantage of even scanty amounts of precipitation. The open nature of deserts with widely-spaced shrubs reflects the low quantity of available moisture and suggests a pattern of extensive underground roots. Some perennials grow in the desert only in those habitats where water is available throughout the year, such as desert oases resulting from seeps, springs, or creeks. Hanging gardens are odd verdant anomalies perched among the otherwise dry, and nearly barren, sheer-walled canyons of southern Utah.

There are various structures that slow water loss from plant tissues. Waxy or resinous coatings on the stems of cacti and the leaves of creosote bush serve to reduce evaporation and reflect heat. The leaves of some plants such as *Incienso* are densely-covered with fine hairs that have a similar effect. The white bark of some shrubs helps to lower stem temperatures. Even the spines of cacti produce enough shade to lower stem temperatures.

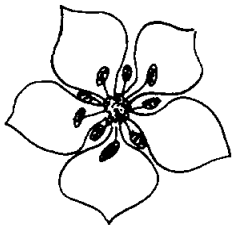
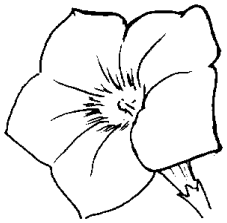
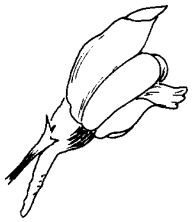
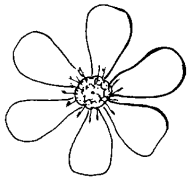
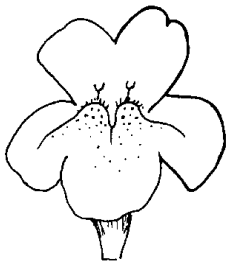
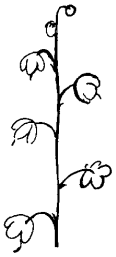
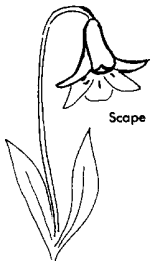
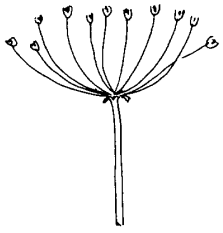
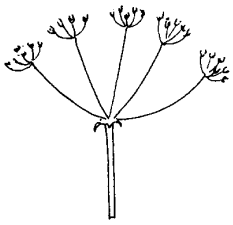
Many desert woody perennials are drought-deciduous to varying degrees. During dry seasons, when soil moisture is no longer available, leaves are shed, thus reducing the amount of surface area that is subject to water loss. Herbaceous perennials may sacrifice both leaves and epiterranean stems during drought, perennating as underground organs until the next favorable season with adequate moisture. Sego lily *(Calochortus)* and wild onions *(Allium)* remain dormant as bulbs, while breadroots *(Pediomelum)* persist from deep-seated tuberous roots.

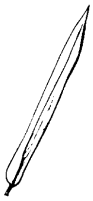
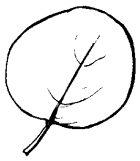
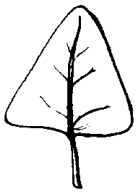
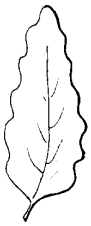
Water storage allows some plants to remain metabolically active even after the depletion of soil moisture. Cacti are able to absorb water quickly and store it in their succulent stems, as evidenced by the change in their stem diameters between moist and dry seasons. The large succulent leaves of century plants (*Agave*) contain ample moisture.

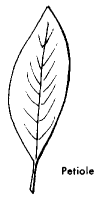
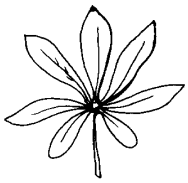
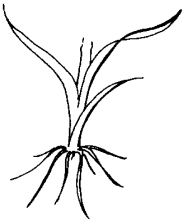
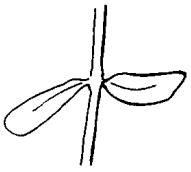
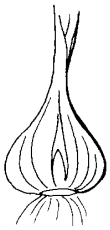
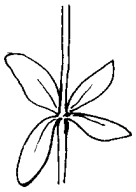
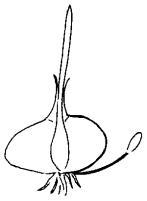
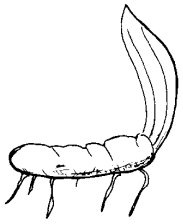
PICTURE GLOSSARY

The vocabulary describing flowering plant characteristics

FLOWERS AND INFLORESCENCES

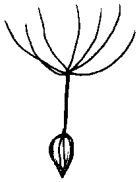
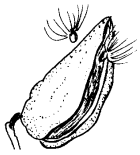
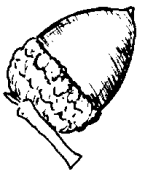
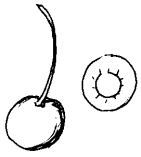
 Separate petals.	 United petals; fused corolla.	 Spurred: A spur is a hollow, tubular projection on a flower.	 Regular flower radially symmetric.
 Irregular flower bilaterally symmetric.	 Spike: An elongated cluster of stalkless flowers.	 Catkin: The scaly spike or raceme of a birch or willow.	 Panicle: A branching or compound raceme.
 Raceme: An elongated flower cluster with single flowers on stems arranged along a stalk.	 Terminal: Single blossom at the top of a stem or scape.	 Umbel: A flower cluster in which all flower stalks arise from a common terminal point.	 Compound umbel.

VARIATIONS IN LEAF SHAPE			
 Linear: Long and narrow with parallel sides.	 Lanceolate: Much longer than wide and tapering upwards from the middle.	 Oblong: Longer than broad with parallel sides.	 Elliptical: Broadest in the middle, equally rounded at the ends.
 Orbicular: Round.	 Ovate: Egg-shaped, broadest near the base.	 Obovate: Egg-shaped with broadest end at the top.	 Cordate: Heart-shaped.
 Deltoid: Triangular.	 Sagittate.	 Cuneate.	 Frond: The highly specialized leaf of a fern.
VARIATIONS IN LEAF MARGIN			
 Entire: The margin not in anyway indented.	 Crenate: Wavy margins.	 Serrate: Toothed.	 Lobed: Cut so as to leave prominent projections.

LEAVES **Leaf Arrangement**		**ROOTS** **Root Types**	
 Simple leaf in one piece.	 Palmately compound: Spreading from the tip of the stem like fingers from the palm of a hand.	 Fibrous: Made up of primary and secondary roots of about the same size.	 Caudex: Upright underground stem which lives from year to year. Tap root: The primary root, which is much larger than the secondary roots.
 Pinnately compound: Leaflets arranged on both sides of the petiole.	 Opposite: Two leaves on a node.	 Rootstock or rhizomes of grass: An underground, more or less horizontal stem. Stolon: A horizontal stem usually at the surface of the ground.	 Section of a bulb: A short thickened stem bearing many fleshy or scale-like leaves, as in *Allium*.
 Whorl: A circle of leaves or flowers at the same joint or node.	 Alternate: One leaf to a node.	 Section of a corm or solid bulb: A fleshy enlarged base of a stem with few or no scales.	 Fleshy rhizome of an *Iris*.

FRUIT

Fruit is the product of the ripened ovary or pistil with accessory parts.

			
Simple Achene	With hairy appendage for wind distribution.	Barbed for animal distribution.	Winged for wind distribution.
Achene: A dry, hard, one seeded fruit, with or without appendages to aid in their distribution.			
			
Follicle: A fruit with a single chamber opening on one side at maturity.	Capsule: A dry fruit of more than one carpel and opening at maturity.	Legume pod. The fruit of the Leguminosae. It splits open on two lines.	Nut: A one seeded fruit with thick hard shell which does not split open at maturity. It usually has two compartments.
			
Berry: A fruit with a pulpy pericarp. A pericarp is the ripened walls of the ovary.	Drupe: A fruit with a fleshy outer coat covering a single seed.	Pome: An apple-like fruit.	Aggregate: A fruit from one flower crowded into a dense cluster but not joined.

COMMON BOTANICAL TERMS

Annual — A plant maturing and producing seed in one year.
Axillary — Borne at an axil.
Biennial – Of two years duration.
Bearded — With long or stiff hairs.
Carpel — A modified leaf forming the ovary.
Corymb — A flat topped raceme in which the outermost flowers open first.
Cyme — A flat topped raceme in which the innermost flowers open first.
Decumbent — The base of the plant resting on the ground with the upper part rising.
Dicotyledon — Any plant having a double first or seed leaf.
Ecology — Study of habits and modes of life of plants and animals.
Exfoliating — Coming off in layers.
Gland — Small round bodies, sessile or on raised stalks that secrete some substance.
Glabrous — Smooth, without hair.
Glutinous — Sticky.
Herb — A plant with the above-ground stems living only one season; a non-woody plant.
Imperfect flower — Lacking either stamens or pistils.
Monocotyledon — Any plant having a single first or seed leaf.
Needles — The leaves of members of the pine family.
Panicle — A branching or compound raceme.
Pappus — The plumose, bristle-like or scaly appendage on the seeds of members of the sunflower family.
Parasitic — Living on and deriving nourishment from other living organisms.
Perennial — A plant that lives for two or more years.
Perfect flower – Having both stamens and pistils.
Procumbent — Trailing on the ground.
Pubescent — Covered with hair.
Raceme — An elongated flower cluster with single flowers on stems arranged along a stalk.
Saprophyte — A plant living on dead organic matter.
Scape — A leafless flowering stem.
Shrub — A woody perennial without a trunk but with several main branches.

Transfer of the **pollen** from the **anther** to the **stigma** constitutes **pollination**. This is accomplished by insects (mostly bees), wind, animals or within the plant itself.

Fertilization, which is the fusion of sperm and egg, is necessary for seed development in most plants. A few plants are an exception to this rule and develop seed without fertilization. This process is called **apomixis**.

FERNS

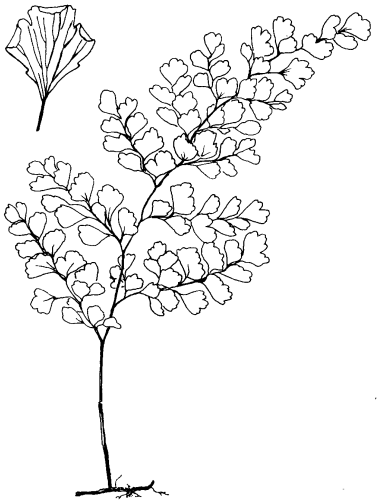
While most ferns are not associated with desert environments, some ferns are adapted to desert climates. They survive by growing either where there is adequate year-round moisture such as in seeps and springs, or sheltered in rock crevices, growing actively only during seasons with adequate precipitation and then becoming dormant once moisture has been depleted.

Maiden hair or **Venus hair fern**

(Adiantum capillus-veneris)

MAIDENHAIR FERN FAMILY (PTERIDACEAE)

Maiden hair or **Venus hair fern** is a plant of warm climates in North America and Europe and is a common foliage plant in florists' shops. It grows from scaly brown underground stems with stalks that are wirelike, dark red-brown, and highly polished. The bright green blades are delicate, thin and droop gracefully. *Adiantum* means "difficult to wet" and refers to the water-shedding qualities of the leaves. It grows in southern Utah in seeps, and in other areas where there is a constant supply of fresh water. Stands are especially abundant in some box canyons where they occur on both sandstone and limestone.



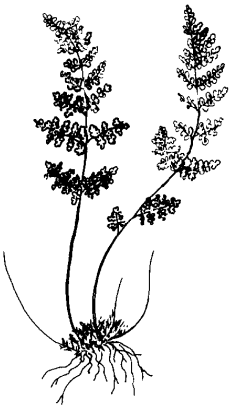
MAIDEN HAIR FERN

Inset: Note the flap-like fold along the margin of the blades where the sori are developed.

Slender lip fern *(Cheilanthes feei)*

MAIDENHAIR FERN FAMILY (PTERIDACEAE)

Slender lip fern is Utah's most prevalent desert fern. Known from cliffs and ledges throughout the southern and eastern part of the state, it is especially common on limestone along the Colorado drainage. The fronds arise from a brown scaly base on dark wiry stalks. The leaves are much divided, slightly rolled at the edges, firm, evergreen and entirely covered with thick curly hairs. In Utah it seldom grows more than 6 inches high, but in other areas may be twice this size. The sori are borne along the turned edge or lip of the blade, thus the common name.

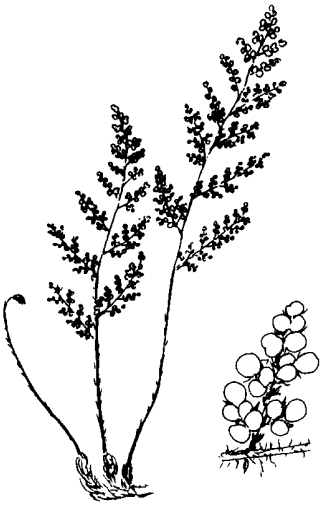


SLENDER LIP FERN

Coville's lip fern *(Cheilanthes covillei)*

MAIDENHAIR FERN FAMILY (PTERIDACEAE)

Bead fern or **Coville's lip fern** has a distribution in Utah that is restricted to the extreme southwest, occurring more widely in Arizona, Nevada and California. It is distinguished from the **slender lip fern** by a slightly larger size and the absence of thick curly hairs on the fronds. Scales along the rooted base are initially white and darken with age. The tops of the frond segments are green and, when dry, resemble close-set beads. The underside of the fronds are covered with whitish to rusty-colored scales.



BEAD FERN

PARRY'S CLOAK FERN

Parry's cloak fern *(Notholaena parryi/Cheilanthes p.)*

MAIDENHAIR FERN FAMILY (PTERIDACEAE)

Parry's cloak fern grows up to about 8 inches tall. The leaves are not at all bead-like and are so densely covered with hairs and scales that they have a felt-like appearance. They are whitish above and brown beneath. This fern is common in southwest Utah where it grows in rock crevices and in dry soil under rocks.

CONIFERS

Two needled pinyon pine or **nut pine** *(Pinus edulis)*

PINE FAMILY (PINACEAE)

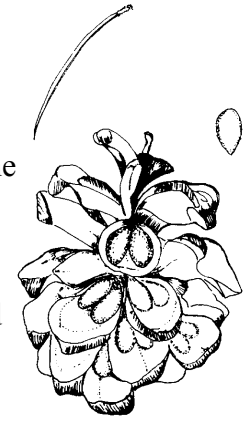
Two needled pinyon pine or **nut pine** is a common desert tree known in Utah generally from the Wasatch Range–High Plateau backbone eastward. These are slow growing trees that take 75 to 100 years to mature. If left undisturbed they will live 500 years or more. The brown, hard shelled nuts have fed native Americans for centuries and now are an important crop for domestic markets. They are about ½ inch long and are borne in cones that are about 2 inches wide when open. This is the state tree of New Mexico.

TWO NEEDLED PINYON PINE

Single needled nut pine or **pinyon pine** *(Pinus monophylla)*

PINE FAMILY (PINACEAE)

Single needled nut pine or **pinyon pine** is more common west of the Wasatch Range into Nevada, with the largest stands occurring along the Utah-Nevada border and in Washington County. When young these trees have a dense branching pattern, but with maturity a more open habit develops. Their life span may reach 700 years. The nuts are thin shelled and about ¾ inch long. The cones are a little larger than those of *Pinus edulis* and the flavor of the nuts is different.

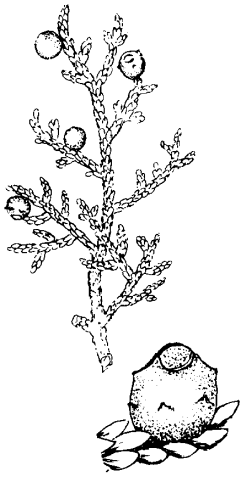


SINGLE NEEDLED PINYON PINE

Utah juniper or **cedar** *(Juniperus osteosperma)*

CYPRESS FAMILY (CUPRESSACEAE)

Utah juniper or **cedar** is the most abundant tree in Utah's desert woodland, often co-occurring with pinyon pines. It has an erect dense habit of growth and is much branched from the base. Its scale-like leaves are evergreen. The small round cones take 2 years to mature and change from gray-green to a rusty brown. The bark is grayish white and tends to become scaly and stringy. In modern commerce Utah juniper has little value except as "cedar" posts. For this they are excellent since their resins act as a natural deterrent for soil bacteria and insects.



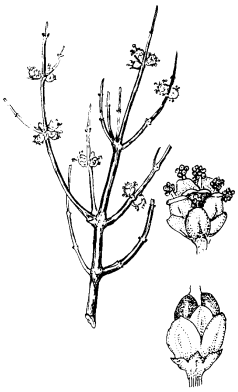
UTAH JUNIPER

JOINT-FIRS

Joint-firs *(Ephedra)*

EPHEDRA FAMILY (EPHEDRACEAE)

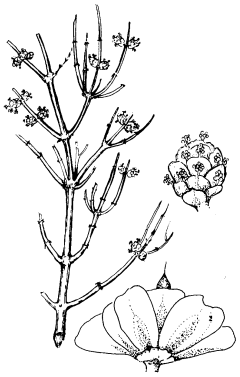
Joint-firs, also called **Brigham tea** and **Mormon tea**, are rather coarse desert shrubs, that surprisingly enough, are closely related to the Pine family. Their bare, ridged, finely fluted branches grow clustered tightly at the joints. The leaves are reduced, scale-like, structures that dry up soon after appearing. Like their relatives, they do not have flowers, but instead their reproductive parts are cone-like, although small and inconspicuous. Species of joint fir occur in dry areas of Asia and Europe as well as in the Americas. For centuries they have been valued for their medicinal properties. An Asian species is the source of ephedrine. Most of them contain tannins and alkaloids. A popular beverage is made by boiling and seeping either dried or fresh twigs.



NEVADA JOINT-FIR

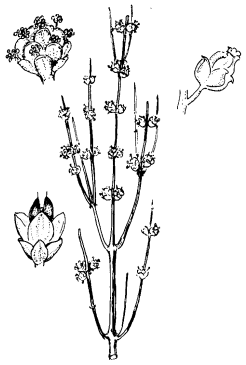
Nevada joint-fir *(Ephedra nevadensis)* has an open spreading growth habit and reaches 4 feet in height. The branches are gray-green with a white-blue cast. The small deciduous leaves have bases that are gray. It is found throughout central and southwestern Utah.

Torrey joint-fir *(Ephedra torreyana)* occurs in southern and eastern Utah and is rather uncommon. It most closely resembles Nevada joint-fir but has slightly larger fruits, arranged singly or in threes. The rather large and numerous bracts on the fruits have thin papery edges.



TORREY JOINT-FIR

Green joint-fir *(Ephedra viridis)* is most readily distinguished by its slender, bright green branches and upright habit. In pure stands it resembles a field of grass. It is absent from the most northern portion of Utah.



GREEN JOINT-FIR

GREEN OR INCONSPICUOUS FLOWERS

Arrowgrass *(Triglochin maritima)*

ARROWGRASS FAMILY (JUNCAGINACEAE)

Arrowgrass is an erect grass-like perennial, of fresh, saline or alkaline marshes. It is common throughout the western hemisphere. It is poisonous to livestock. New plants are developed from strong, short, underground stems, as well as from seed. The flowering stalks are up to 3 ½ feet tall and rise above the slender leaves. Close-set greenish blossoms cover more than half of the stalk. The long, oval-shaped capsules have six sections. Each produces one seed.

ARROWGRASS

Grasses dominate much of the desert environments in Utah. Our diverse climates provide habitats for the two major physiological adaptations in grasses: cool versus warm season types. Cool season grasses grow in response to moisture available in spring from snowmelt or spring rains before temperatures become excessively hot. Cool season annuals survive hot summers as seeds, while cool season perennials undergo varying degrees of dormancy. Common cool season grasses include the bluegrasses (*Poa*), bromes (*Bromus*), fescues (*Festuca*), and wheatgrasses (*Elymus*). Warm season grasses green-up in response to rising temperatures with summer rainfall that is especially pronounced in southern and eastern Utah. These include such groups as the grama grasses (*Bouteloua*), three-awns (*Aristida*), lovegrasses (*Eragrostis*), and dropseeds (*Sporobolus*), which become increasingly common further south.

Crested wheatgrass *(Agropyron cristatum)*

GRASS FAMILY (GRAMINEAE/POACEAE)

Crested wheatgrass is a long-lived bunch grass that can grow in semi-arid and alkaline areas and tolerate poor soil. It is a Eurasian species that was introduced as a forage plant. Plants vary in height from 6 inches to 3 feet, depending upon the environmental conditions of the site. It is common in the mountains as well as in the desert.

CRESTED
WHEATGRASS

Red three-awn grass *(Aristida purpurea)*

GRASS FAMILY (GRAMINEAE/POACEAE)

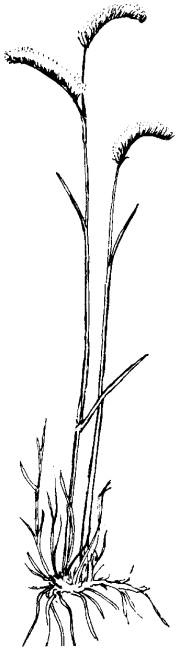
Red three-awn grass is a native perennial that grows as large tufts. It may be as much as 20 inches tall, but in desert country, is generally much shorter. The leaves are narrow and mostly basal. The sharp, stiff awns of the mature fruit cause injury to grazing animals, thus limiting its forage value. It grows in rocky soil, on dry plains and foothills.

RED THREE-AWN GRASS

Blue grama *(Bouteloua gracilis)*

GRASS FAMILY (GRAMINEAE/POACEAE)

Blue grama is perhaps the most important of all the grasses that grow in Utah's deserts. It is a large densely tufted perennial that forms a rough sod. Its curved leaves are 3 to 5 inches long and grow from the base of the plant. The seed stalks are from 8 to 20 inches tall and usually have two one-sided, purple tinged spikes.

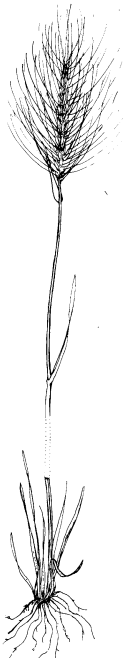


BLUE GRAMA

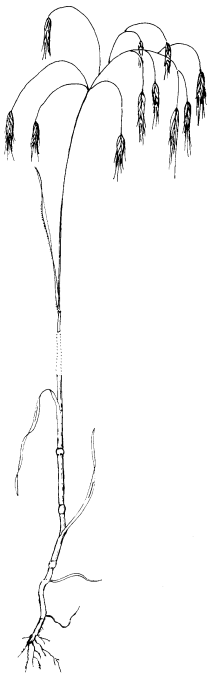
Foxtail chess *(Bromus rubens)* and **Cheatgrass** *(Bromus tectorum)*

GRASS FAMILY (GRAMINEAE/POACEAE)

Foxtail chess and **cheatgrass** were both introduced from the old world. They are winter annual grasses that germinate in late fall and mature from spring to early summer. They produce soft, vivid, green leaves that are followed soon by flowering stalks. They then become dry, bearing harsh stiff fruiting heads that are injurious to an animal's mouth, feet, eyes and ears. Many people become aware of them when they find their socks full of the sharp awns. **Foxtail chess** is normally the shorter of the two grasses and has thicker set, upright, reddish or purplish heads. **Cheatgrass** has nodding-pendulous green heads that become reddish-brown at maturity. In favored locations, cheatgrass may be as much as 15 inches tall, but it can complete its life cycle and reach no more than 2 inches in height. When dry, both these grasses are a serious fire hazard. The seeds seem to remain uninjured by fire. Their tender young leaves make excellent winter feed for grazing animals.



FOXTAIL CHESS

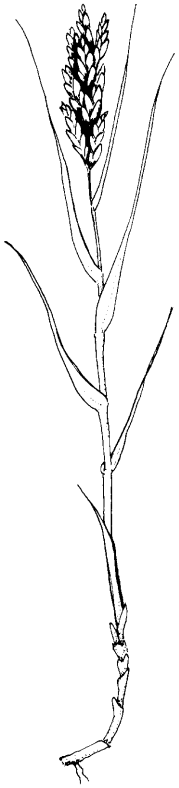


CHEATGRASS

Desert saltgrass *(Distichlis spicata)*

GRASS FAMILY (GRAMINEAE/POACEAE)

Desert saltgrass is a native grass that grows in damp saline areas such as the shore of the Great Salt Lake and alkali soaked playas. It is a low, sod-forming gray-green perennial with narrow, harsh curved leaves, usually less than 4 inches long. Reproducing vegetatively from vigorous, hard, white underground stems, new shoots emerge every few inches. It rates low as a forage plant, but may be browsed if nothing else is available.



DESERT SALTGRASS

Galleta (*Hilaria jamesii/Pleuraphis j.*)

GRASS FAMILY (GRAMINEAE/POACEAE)

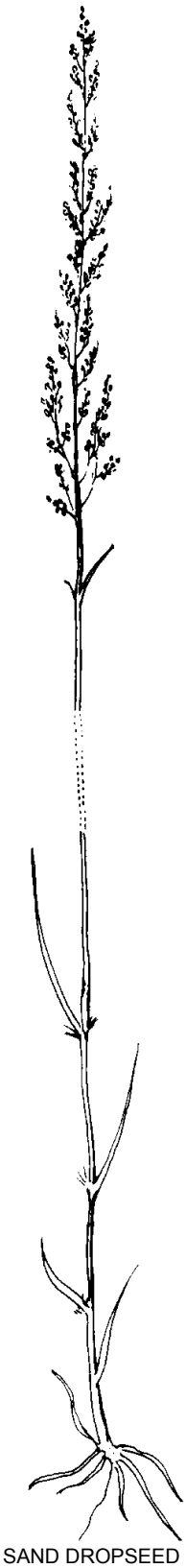
Galleta is a stiff tough perennial with persistent thick scaly rhizomes. It grows 8 to 20 inches tall and is characterized by numerous twisted and curled leaves growing from the plant's base. Spikelets are arranged in groups of three on a zig-zagged stem that remains after the spikelets have fallen. It grows in either fresh or saline soil and is a valuable forage crop when it is green early in the season.

GALLETA

Sand dropseed (*Sporobolus cryptandrus*)

GRASS FAMILY (GRAMINEAE/POACEAE)

Sand dropseed is a tufted perennial grass 1 to 3 feet high that grows in coarse or sandy soil in desert sagebrush areas. It tolerates quite high concentrations of salt and is very resilient to overgrazing and drought. The seeds are profuse and are borne on fine silky hairs at the apex and axils of the stems. The stems are leafy and often spread at the base.



SAND DROPSEED

Fremont cottonwood or **Fremont poplar** (*Populus fremontii*)

WILLOW FAMILY (SALICACEAE)

The **Fremont cottonwood** or **Fremont poplar** is a handsome tree that, like other members of its family, produces catkin flowers before its leaves appear. Soon thereafter, the seeds develop and are released on long silky hairs that resemble cotton. Since male and female flowers are produced on separate trees, seed and "cotton" are dispersed only from the female trees. New trees are readily reproduced from cuttings. It grows beside streams and in other places where water is available. It often reaches 50 feet in height and may sometimes be twice that tall. The thick gray furrowed trunk supports a wide flat-topped crown. Its broad smooth, triangular leaves are dark green and rustle in the wind. In the autumn, they turn gold before falling.

FREMONT POPLAR

Sandbar or **coyote willow** (*Salix exigua*)

WILLOW FAMILY (SALICACEAE)

Several willows are common along desert washes and streams. **Sandbar** or **coyote willow** is one of the most prevalent. It is a slender and flexible shrub that reaches a height of about 8 feet. Narrow long leaves that are soft and gray-green make it quite recognizable. The roots form a tight mat which effectively retards soil erosion. Like the **Fremont poplar,** it has seeds that are dispersed with cotton-like long white hairs; but it also produces new plants by underground stems. It blooms in spring with loose greenish catkins about 2 inches long.

SANDBAR WILLOW

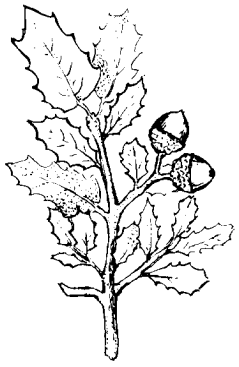
Oak (*Quercus*)

BEECH FAMILY (FAGACEAE)

We have three oaks native to Utah's deserts. They are all **scrub oaks** which form thickets from underground stems. They have large resilient roots that can sustain them during dry periods or regenerate growth if the top dies. These roots are estimated by botanists to be hundreds or even thousands of years old, and are good soil binders. Our **oaks** vary greatly within the species and hybridize readily. Their leaves are thick and leathery. **Gambel oak** (*Quercus gambelii*) is the only one that attains more than shrub size. It grows at higher elevations and its range extends farther north than the others. In favored locations it may be 50 feet tall, although it is commonly about 25 feet. It is deciduous. **Wavyleaf oak** (*Q. undulata*, or in some references *Q. harvardii*) is a deciduous shrub that forms large clones and is restricted within Utah to the southeastern region. **Turban oak** (*Q. turbinella*) has small, evergreen, spinose, holly-like leaves and occurs more commonly in southwestern Utah with a few scattered localities known in southeastern Utah. The specific epithet, *turbinella*, refers to the turban shape of the acorn.

GAMBEL OAK

WAVYLEAF OAK



TURBAN OAK

Netleaf hackberry (*Celtis reticulata*)

ELM FAMILY (ULMACEAE)

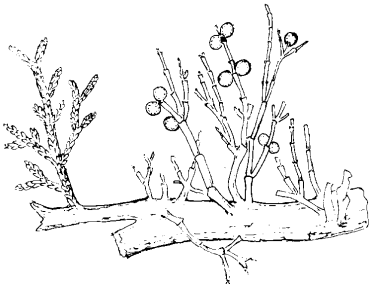
Netleaf hackberry is a shrubby tree, 10 to 30 feet tall, that grows along open hillsides or, more often, near streams. Its limbs are rather slender and reddish-gray. The branch ends are quite delicate. The leaves are rough, more or less strongly netted, and often quite deformed by insects. Its fruit was once used as food by Indians.

NETLEAF HACKBERRY

Mistletoe (*Phoradendron*)

MISTLETOE FAMILY (VISCACEAE)

Juniper mistletoe (*Phoradendron juniperinum*) is a parasitic plant on **juniper** and is quite common where there are large stands of these trees. It has rather stout jointed stems and small scale-like leaves. It is readily seen because it grows in dense clumps and is a brighter yellow-green than the trees on which it grows. Male and female flowers are borne on different plants. All the flowers are greenish and quite inconspicuous. The whitish, rather sticky, berries grow from the joints and are relished by birds that inadvertently spread them from tree to tree. Mistletoes live on the sap of the host plant and may cause its death.



JUNIPER MISTLETOE

California mistletoe (*Phoradendron californicum*) is rather similar in appearance to **juniper mistletoes**, but has a slightly red color at the joints and grows on **desert catclaw** (*Acacia greggii*). It produces an abundant supply of coral red berries that are an important winter-food source for birds. In Utah, it grows only at our southernmost border.

CALIFORNIA MISTLETOE

Veined dock or **wild begonia** (*Rumex venosus*)
Canaigre (*Rumex hymenosepalus*)

BUCKWHEAT FAMILY (POLYGONACEAE)

Two plants that are close relatives to our domestic rhubarb grow in sandy areas in the desert and are conspicuous for their showy red fruit. The most common one is **veined dock** or **wild begonia** and the other is **canaigre**. They look very much alike. **Veined dock** has the largest fruit, but **canaigre** grows up to 2 feet tall and its fruit clusters are more elongated. The roots of **canaigre** are tuberous and contain large quantities of tannin. They were a source of yellow dye for Indian rug weavers. The leaves of both species were used as food by the Indians. **Veined dock** often grows alone or in pure stands, surrounded by only wind blown sand. It is a very handsome plant in these settings.

WILD BEGONIA

No individual plant belonging to the goosefoot (*Chenopodiaceae*) family has beautiful or showy flowers. Many of these plants, however, are very interesting. Some occur in such large numbers that they become conspicuous or economically important. Plants of this family are usually tolerant of salt and therefore dominate some of our mineral saturated areas.

Iodine bush (*Allenrolfea occidentalis*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Iodine bush grows in moist places, some of which are so saline that no other plant can tolerate the habitat. This shrub is rarely more than 4 feet tall and has round, succulent, gray-green, jointed stems that ascend from a woody root. Leaves are reduced and scale-like. Its older branches turn dark purplish brown. The stems have an interesting tart, salty flavor. Inconspicuous flowers are produced on short scaly spikes.

IODINE BUSH

Most of our desert species of *Atriplex* are shrubs or subshrubs. They are among the most common plants in our dry regions where the land is salty or alkaline. All of them are dioecious, which means that male and female blossoms are borne on different plants. They are distinguished by their gray color.

Four-wing saltbush (*Atriplex canescens*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Four-wing saltbush is the most widely distributed *Atriplex* in North America and is common in well drained, sandy areas over most of the western United States. It is often 6 feet tall and nearly three times as broad. Its larger size and the conspicuous four-winged bracts on its mature fruit readily distinguish it from other Utah species. Its branches are stout, flexible and have exfoliating bark. The leaves are evergreen and gray-scurfy. It blooms from May to July. It is a valuable grazing species although mildly toxic. It does well as a cultivated ornamental.

FOUR-WING SALTBUSH

Shadscale (*Atriplex confertifolia*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Shadscale is widely distributed in all our desert areas, but prefers open sandy soil. It is a rounded, dense, woody, evergreen shrub, with gray-scurfy leaves and branches. It grows up to 60 inches tall and twice as wide. The branches are ridged and develop dry spiny ends that distinguish it from other shrubby atriplexes.

SHADSCALE

Gardner's saltbush (*Atriplex gardneri*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

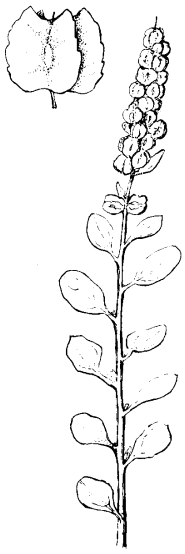
Gardner's saltbush is a variable species complex that occurs commonly throughout Utah in fine textured saline substrates. Plants range from subshrubs to woody shrubs. The leaves are pale gray-green and densely scurfy.

GARDNER'S SALTBUSH

Garrett saltbush (*Atriplex garrettii*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Garrett saltbush is a low spreading plant that is endemic to the Colorado River area in the southeastern corner of Utah. It has four-winged fruit, but because of its growing habit, is not likely to be confused with **four-wing saltbush**. It flowers from April through May and again after heavy summer rains.



GARRETT SALTBUSH

Winterfat

(*Ceratoides lanata/Eurotia l./Krascheninnikovia l.*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Winterfat is the most common plant of western desert plains and the most valuable for winter grazing. It has numerous upright herbaceous stems from a woody base. A deep taproot enables it to grow in dryer areas than most other plants. It has narrow linear leaves arranged in clusters on the stems and covered with dense hairs. It produces numerous inconspicuous flowers at the axils of the leaves on stems that are 1 to 3 feet high. These blossoms are soon followed by very conspicuous, fluffy, hair-covered fruits that are white or rusty white in color. An area dominated by mature **winterfat** resembles a field of snow.

WINTERFAT

Spiny hop-sage (*Grayia spinosa*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

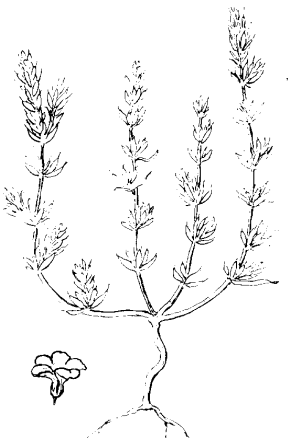
Spiny hop-sage is a round shrub 1 to 3 feet high, that grows on foothills and in desert valleys, where soil is alkaline. It has gray striated bark and numerous spinose twigs. Its leaves are somewhat fleshy with fine hair that gives them a gray appearance. Its winged fruit matures to a whitish or rose-red color and sets it apart from other plants of similar appearance. It blooms from April to June.

SPINY HOP-SAGE

Halogeton (*Halogeton glomeratus*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Halogeton is an imported annual weed of rather recent introduction. It is already taking over some of the salt deserts in western Utah. It is apparently poisonous to all grazing animals, but in our state, sheep have been the most seriously affected. In its early growth stages, it is a gray-green, rather prostrate plant with numerous thick leaves, one-half inch long, each resembling a small sausage with a sharp point. Its blossoms are inconspicuous. However, by the time the fruit is mature, in September, many stems are a foot tall and densely covered with semi-transparent bracts that range in color from red to white. In large stands the effect is rather spectacular, especially with backlighting.

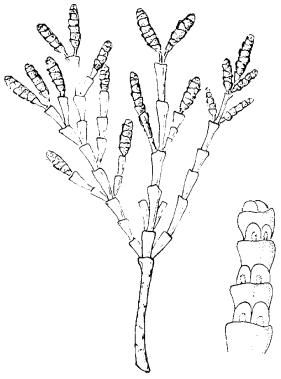


HALOGETON

Samphires, glassworts or **pickleweeds** (*Salicornia*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Samphires, glassworts or **pickleweeds** are marsh plants that grow in thick stands on higher spots around the Great Salt Lake and in other areas where there are high concentrations of salt. The salt that accumulates in their tissues gives them an interesting pickle-like flavor. **Marshfire** (*S. europaea*) is an erect, bushy annual 5 to 10 inches tall with jointed stems and scale-like leaves. As it matures, its color turns from green to a dark red. **Utah samphire** (*S. utahensis*) is much like it, but is a perennial that grows up to a foot in height and has fewer branches. It retains its green color.



MARSHFIRE

Russian thistle or **tumbleweed** (*Salsola*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

Russian thistle or **tumbleweed** is an annual or winter annual that is a native of Eurasia. It has become a noxious weed in open fields and desert areas in Utah, where it is quite tolerant to alkali soils. Upon first encounter it seems quite unlovely. The whole plant is armed with needle-like prickles that can inspire instant prejudice. Very young plants lie close to the ground and are a pleasant, vivid green. They soon develop a well-rounded hemispheric shape, made up largely of ridged branches. They may be as much as 3 feet in diameter. Mature plants have a dull green color. The branches, however, are marked with tidy red lines that are quite pretty. The scale-like leaves and small transparent blossoms are inconspicuous. The autumn and winter winds dislodge the plants from the earth and tumble them across the fields, scattering seed as they go.

RUSSIAN THISTLE

Greasewood (*Sarcobatus vermiculatus*)

GOOSEFOOT FAMILY (CHENOPODIACEAE)

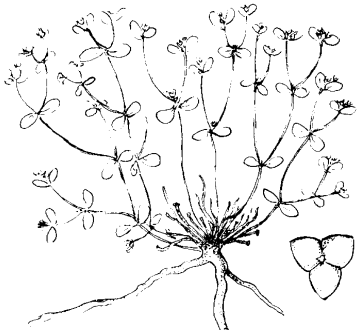
Greasewood is a spine-tipped shrub, usually less than 7 feet tall, that dominates many areas where the soil is heavy and alkaline. Its fleshy, linear green leaves and white bark contrast sharply with the more common gray-tan foliage of the desert. The staminate (male) flowers are clustered on densely crowded spikes. The female plants bear winged green fruit. This plant is poisonous to sheep.

GREASEWOOD

Fendler spurge (*Euphorbia fendleri*)

SPURGE FAMILY (EUPHORBIACEAE)

Fendler spurge is a much branched, low growing, perennial plant with small reddish leaves and milky juice. The flowers and fruit are inconspicuous. It is common in sandy or gravelly soil over most of our desert areas. The spurge family enjoys greater diversity in more tropical regions and is known for the ornamental poinsettia (*Euphorbia pulcherrima*) and the crops such as rubber (*Hevea, Manihot, Micandra*) and cassava (*Manihot*).

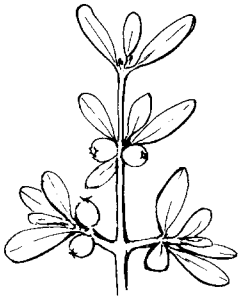


FENDLER SPURGE

Buffaloberry (*Shepherdia*)

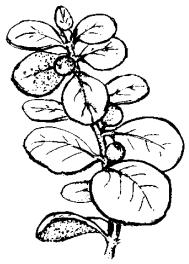
OLEASTER FAMILY (ELAEAGNACEAE)

Buffaloberries are conspicuous for the silvery scurfy appearance of their leaves and for their bright fruits that ripen in late summer. The flowers have no petals and are quite inconspicuous. Male and female blossoms are borne on separate plants. **Silver buffaloberry** (*Shepherdia argentea*) is a somewhat open spiny shrub that forms thickets up to 18 feet high along stream banks in southern and eastern Utah. The leaves are thin textured and deciduous. Its fruits are scarlet-red and highly edible. They make excellent jelly. Indians traditionally cooked them with buffalo meat and dried them for winter use.



SILVER BUFFALOBERRY

Round-leaf buffaloberry (*S. rotundifolia*) is a compact evergreen shrub that is less than 4 feet high. It grows in southern and southeastern Utah on rocky hillsides or at the base of cliffs. The leaves are thick, silvery above and yellowish woolly beneath. The ripe fruit is scurfy, yellow and rather sweet.



ROUND-LEAF BUFFALOBERRY

Silk tassel, **quinine bush** or **coffeeberry bush** (*Garrya flavescens*)

SILK TASSEL FAMILY (GARRYACEAE)

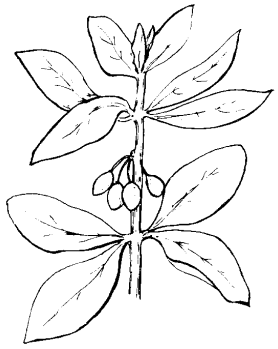
Silk tassel, **quinine bush** or **coffeeberry bush** occurs only in our warmest desert. It is an attractive, bushy shrub 5 to 8 feet tall that grows on dry slopes. The catkin-like flowers, bracts, new branches and the underside of its leaves are all densely covered with silky hairs. Its evergreen leaves vary from gray-green to yellowish, are intensely bitter and contain alkaloids. Even so, they are sometimes browsed. Male and female yellow flowers are borne on different trees and appear in early spring. The fruit is a rather dry berry.

SILK TASSEL

Desert olive or **New Mexico forestiera** (*Forestiera pubescens*)

OLIVE or ASH FAMILY (OLEACEAE)

Desert olive or **New Mexico forestiera** is a species of southern deserts, commonly found on stream banks or in areas where ground water is rather near the surface. Ours grow 6 to 9 feet tall and are spiny. The mature branches are smooth and gray but the new growth tends to be yellowish. The leaves are thick and leathery. It blooms in March and April with blossoms that are most conspicuous for the yellow bracts that subtend them. Male and female flowers are produced on separate trees.

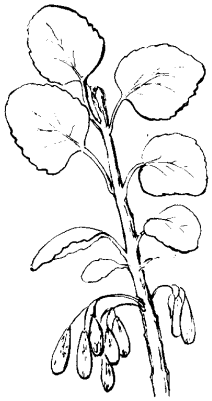


DESERT OLIVE

Single-leaf ash (*Fraxinus anomala*)

OLIVE or ASH FAMILY (OLEACEAE)

Single-leaf ash is the most important deciduous tree that grows in Utah's pinyon-juniper forest. It is a shrubby tree that grows up to about 20 feet tall and usually stands alone. Bright green foliage contrasts sharply against the rest of the desert vegetation. Its thin, tough, rather dry leaves are admirably adapted to survival in their desert climate, but when drought really sets in, they become yellow and fall off. The small green blossoms come in early spring and are soon followed by bunches of flat winged fruit. Those who are familiar with other species of *Fraxinus* will have little difficulty in identifying single-leaf ash as one of the group.

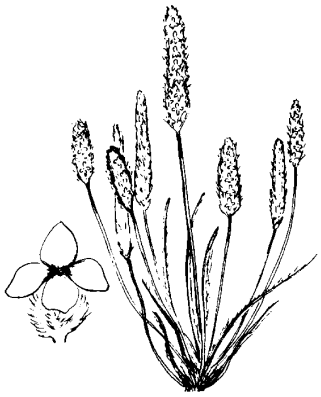


SINGLE-LEAF ASH

Indian wheat (*Plantago patagonica*)

PLANTAIN FAMILY (PLANTAGINACEAE)

Indian wheat becomes conspicuous by its numbers. It is a small tufted annual that carpets many of our sandy desert floors. Its stems and leaves are gray-green and covered with soft white hair. In spring and summer it produces close-set blossoms up slender scapes. The flowers are very small and are best seen with the aid of a lens. They are delicate and nearly colorless.



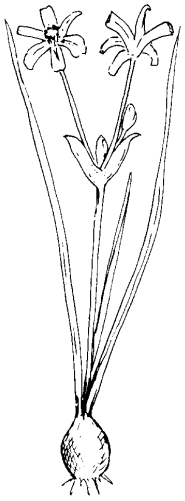
INDIAN WHEAT

WHITE-CREAM FLOWERS

Funnellily (*Androstephium breviflorum*)

LILY FAMILY (LILIACEAE)

Funnellily grows in some of the same sandy areas where onions are found. Its blossoms are often as much as an inch in diameter and are white with pale lavender markings. Its bulbs, like textile onions, have a fabric-like coating. **Funnellily** blooms from March through May. The whole plant is from 4 inches to 1 foot high.



FUNNELLILY

Sego lily (*Calochortus nuttallii*)

LILY FAMILY (LILIACEAE)

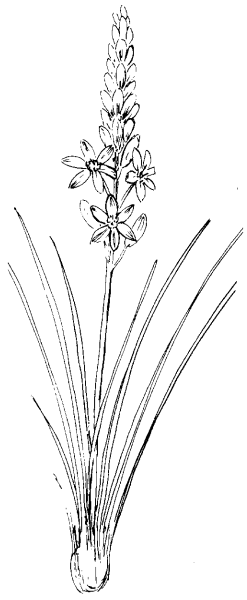
Sego lily, the state flower, is prevalent throughout Utah deserts. Thin, fragile stems support large goblet-shaped flowers with white petals the texture of satin, each bearing red and yellow blotches on the insides. The bulbs were an important component in the diet of the native peoples.

SEGO LILY

Desert lily (*Eremocrinum albomarginatum*)

LILY FAMILY (LILIACEAE)

Desert lily has blossoms arranged up a central stalk that may be as much as 12 inches tall. The individual flowers are about three-fourths of an inch across. Each petal is marked with three fine green lines. It grows in sandy areas of southeastern Utah and blooms from April to June.



DESERT LILY

Star lily or **Sand lily** (*Leucocrinum montanum*)

LILY FAMILY (LILIACEAE)

Star lily or **Sand lily** has numerous stemless tubular flowers arising from the base of the plant. They are about twice as large as the blossoms of desert lily and are pure white. The entire plant is only about 6 inches tall. They can be seen blooming in April in southwestern Utah.

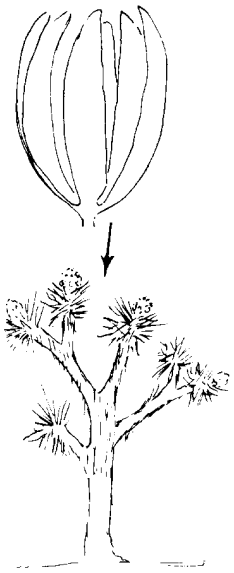
STAR LILY

Yuccas (*Yucca*)

AGAVE FAMILY (AGAVACEAE)

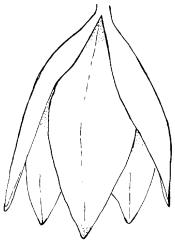
Several species of yucca are native to Utah. Considered among the showiest flowers in the desert, their creamy white blossoms are clustered on tall stalks in spring. Each flower is tulip-like, thick textured, and fragrant. The leaves stand out protectively and are armed with very hard sharp points. Many have loose thread-like fibers that curl from their edges. Yuccas are pollinated at night by small whitish moths that push pollen onto the stigmas of the blossoms and deposit their eggs at the same time. Although the young moths eat some of the developing seed, some remains, thus, the process benefits both the moth and the plant.

All species of yucca played an important role in the economy of the native peoples. Stalks, buds, flowers, and some fruits served as food, roots as a soap and a laxative, and leaf fibers as cordage and weaving material. Yucca is the state flower of New Mexico.



JOSHUA-TREE

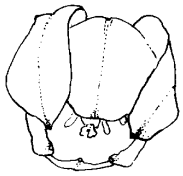
Joshua-tree (*Yucca brevifolia*) is our only tree-sized yucca. At maturity it can reach 30 feet in height. The northernmost edge of its geographic range brings it just into southwestern Utah. It blooms from March to May with short stalks of greenish white flowers at the end of its branches.



DATIL YUCCA

Datil yucca (*Y. baccata*), found in southern and southeastern Utah, is also known as the banana yucca for its 4 inch edible fleshly fruits. Unlike most yuccas, its inflorescence is barely taller than its 2–3 feet long leaves.

Narrow-leaved yucca (*Y. angustissima*), by contrast, has blossom spikes 5 feet tall, protruding well above the basal tuft of stiff leaves. This species grows in southeastern Utah.



NARROW-LEAVED YUCCA

Bog orchid (*Habenaria sparsiflora*)

ORCHID FAMILY (ORCHIDACEAE)

All orchids need a moist habitat. The two members of this group that are native to our deserts survive only because they inhabit the springs, seeps and weeping walls of the desert canyons. In this microhabitat, they thrive along with ferns, columbines, monkey flowers, tiny primroses and other plants that need abundant water. **Bog orchid** has small whitish flowers on a single upright stem 4 to 30 inches tall. It blooms May to August.

BOG ORCHID

Yerba mansa (*Anemopsis californica*)

LIZARD-TAIL FAMILY (SAURURACEAE)

Yerba mansa can be locally common in wet alkaline areas of extreme southwestern Utah. It grows up to 20 inches tall from thick, creeping root-stalks that have a pungent, spicy aroma. Southern Indians and early Californians of Spanish descent used an infusion made from this plant for skin disorders. Bits of the root were chewed to relieve toothache. The deep green leaves are mostly basal. From March to August, it bears numerous blossoms on rough spikes that are subtended by white or pinkish, petal-like bracts.

YERBA MANSA

Buckwheats (*Erigonum*)

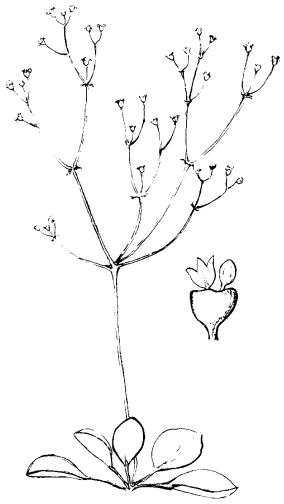
BUCKWHEAT FAMILY (POLYGONACEAE)

The diversity exhibited by the buckwheats in Utah is broad. They vary in size and life form from delicate annuals to long-lived woody shrubs. Their flowers are consistently small-sized, but are clustered together so densely that they often create an intensely colorful display.

Red-root buckwheat (*Eriogonum racemosum*) has one or more tall (up to 3½ feet) erect, almost leafless stems from a reddish, perennial root. The leaves are woolly and grayish. The white bell-shaped blossoms are clustered on the upper stem and have veins that give them a striped appearance. They vary in color from white to pink.

Gordon's buckwheat (*E. gordonii*) is a very common annual in eastern Utah. It is a spreading plant which grows between 4 and 18 inches high and has round basal leaves. The much branched stems bear tiny blossoms at the tips. Its leaves are mostly smooth.

Corymb buckwheat (*E. corymbosum*) is an open shrub 2 or 3 feet high. The woody base has shredded bark, but the upper branches and leaves are covered with dense gray hair. The white blossoms are very small and are marked with pink or greenish veins; rarely, they are brownish or yellow. It grows in eastern and southern Utah. It resembles **Slenderbush buckwheat**.

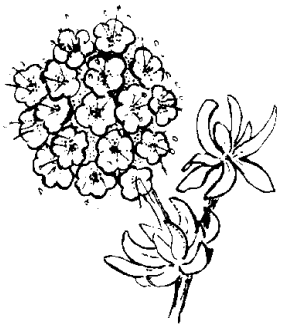


GORDON'S BUCKWHEAT

Slenderbush buckwheat (*E. microthecum*) resembles the corymb buckwheat in size and habit of growth. This is a highly variable species that occurs widely in Utah. Its tiny blossoms are white with orange, pink or yellow markings. They are borne in flat-topped clusters. Its leaves grow along the stems, are slender, and much longer than wide. The edges are slightly rolled under and darker on top.

SLENDERBUSH BUCKWHEAT

Bunch-leaved buckwheat (E. *fasciculatum*) is a woody shrub that grows in southwestern Utah. It is 1 to 5 feet in height and is conspicuous for its drooping branches tipped with thick bunches of leaves. It blooms from March to November with very attractive white, pink, or red blossoms.



BUNCH-LEAVED BUCKWHEAT

SNOWBALL SAND VERBENA

Snowball or **sand verbena** (*Abronia fragrans*)

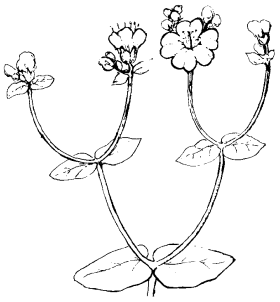
FOUR-O'CLOCK FAMILY (NYCTAGINACEAE)

Snowball or **sand verbena** is an attractive, low trailing perennial herb of sandy places found throughout Utah deserts. The rather thick leaves with glandular hairs often catch windblown sand. The fragrant white to pinkish flowers occur in dense clusters.

Wishbone plant (*Mirabilis bigelovii*)

FOUR-O'CLOCK FAMILY (NYCTAGINACEAE)

Wishbone plant produces weak straggling stems with a double branching habit that makes them resemble "wishbones." The flowers are white and usually less than an inch in diameter. This species, which is more common in adjacent warmer deserts to the south, barely enters Utah in the southwest corner known as the Dixie Corridor.



WISHBONE PLANT

MOON POD

Moon pod (*Selinocarpus diffusus*)

FOUR-O'CLOCK FAMILY (NYCTAGINACEAE)

Moon pod is another warm desert plant that occurs in Utah only within its southwestern corner. It is a low, clump-forming perennial with rough-textured leaves and stems. In May and June it bears very fragrant, long tubular white flowers that are about one-half inch wide. The fruit is winged and turns brown at maturity.

DESERT SANDWORT

Desert sandwort (*Arenaria macradenia*)

PINK FAMILY (CARYOPHYLLACEAE)

Desert sandwort is a perennial which is much branched from the root, sometimes forming a mat, but more often, shrub-like. Its stems are slender and up to 18 inches long. It has numerous leaves near its base and a few scattered up the stems. They are needle-like and opposite each other. The flowers come on fine branches at the ends of the stems and have white petals longer than the sepals. It grows on rocky hillsides and ledges in southwestern Utah and northward in the High Plateaus and Wastch Range.

Small flowered columbine (*Aquilegia micrantha*)

BUTTERCUP or CROWFOOT FAMILY (RANUNCULACEAE)

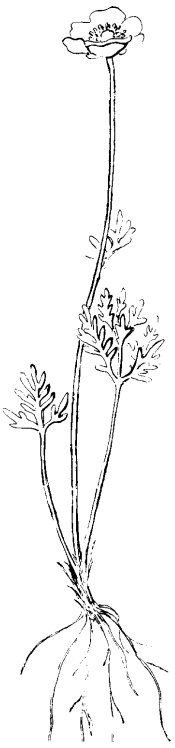
One of the handsomest plants of the desert is the delicate **Small flowered columbine** that grows with ferns, primroses, orchids and monkey flowers along the seeps and hanging gardens of the desert canyons of southeastern Utah. It blooms all summer with creamy flowers that are often tinged with rose, lavender, or yellow. The slender stems arise from the woody base that is thickly clothed with dried leaves left over from past seasons.

SMALL FLOWERED COLUMBINE

Desert buttercup (*Ranunculus andersonii*)

BUTTERCUP or CROWFOOT FAMILY (RANUNCULACEAE)

Desert buttercup is a fibrous rooted perennial that grows on sagebrush slopes or in open juniper and pine woods. It has basal leaves and one or two flowers at the top of scapes 2 to 12 inches tall. The flowers are one-half to three-quarter inches across with five greenish sepals and five petals that are creamy white when they open, but become pink, red, or lavender-tinged with age. They bloom from April to June. This buttercup grows in the western half of Utah, commonly in rock crevices.



DESERT BUTTERCUP

Prickly poppies (*Argemone*)

POPPY FAMILY (PAPAVERACEAE)

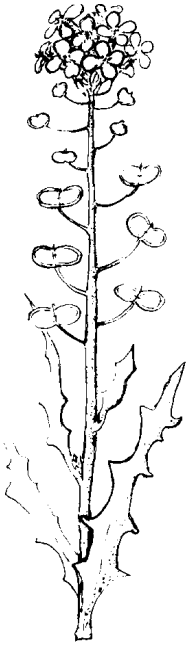
Prickly poppies are robust and quite showy herbaceous perennials. Erect stems to 3 feet in height are blue-gray with thistle-like wavy leaves and generously armed with protective coarse white to yellow spines. Their blossoms are remarkably beautiful and fragrant, ranging from 2 to 5 inches in diameter with white petals that are tissue-paper thin and have a crinkled look. In the center are numerous rich yellow stamens. The seed and acrish yellowish sap have some medicinal properties. *Argemone corymbosa* grows in open sandy areas of southeastern Utah while *Argemone munita* has a more common distribution in western Utah.

PRICKLY POPPY

Spectacle pod (*Dithyrea wislizenii*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Spectacle pod is named for its interesting double fruit that resembles a pair of spectacles. It is an annual plant that adjusts its growth to the available water; thus it may bloom and mature in a very short period of time and be only a few inches tall, or, in more favorable habitats, become 18 inches tall, much branched and bloom from February through October. The blossoms are white and fragrant. Its leaves are mostly basal.



SPECTACLE POD

Desert peppergrass (*Lepidium fremontii*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Desert peppergrass is a freely branched, woody-based low shrub that forms dense, round plants up to 2 feet tall. It bears large quantities of small, white, very fragrant blossoms, that contrast well with the fresh green color of the stems and leaves. In Utah it is known only from the southwestern region that harbors other warm desert plants.

DESERT PEPPERGRASS

Annual twistflower (*Streptanthella longirostris*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

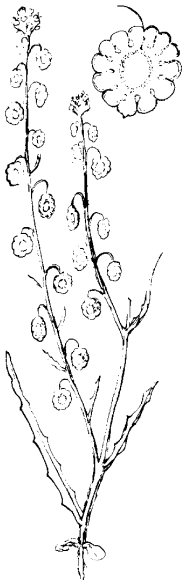
Annual twistflower is abundant in sandy soils of juniper-pinyon communities. It blooms from March to May with small white or yellow flowers that are sometimes tinged with purple. These are followed by long capsules that turn downward. It grows 5 to 20 inches tall and is commonly found growing up through shrubs.

ANNUAL TWISTFLOWER

Lace-pod or **fringe-pod** (*Thysanocarpus curvipes*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Lace-pod or **fringe-pod** is a slender stemmed, simple or freely branched annual of open gravelly hillsides. Depending upon the season, it grows from 6 to 24 inches high. Its flowers are small, white to purple, and quite inconspicuous. The whole plant would be undistinguished except for its numerous and beautiful seed capsules. They vary from being marked and ruffled, to having a pierced, lace-like pattern. Each mature capsule is about one-quarter inch in diameter and bears one seed. They develop in early summer and remain on the plant into winter.



LACE-POD

Clammyweed (*Polanisia dodecandra*)

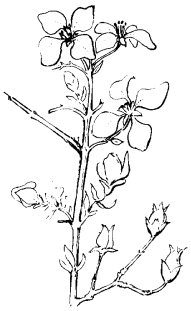
CAPER FAMILY (CAPPARACEAE)

Clammyweed is an annual with very glandular sticky leaves that give off a strong and offensive odor. Its flowers are creamy white with long exerted purple stamens. It grows 6 inches to 3 feet tall in dry sandy washes.

CLAMMYWEED

Fendlerbush (*Fendlera rupicola*)

MOCK ORANGE FAMILY (PHILADELPHACEAE)



FENDLERBUSH

UTAH FENDLERELLA

Fendlerbush grows on rocky slopes, cliffs and canyon rims in southeastern Utah. It is a rather loosely branched shrub that grows up to 7 feet tall and has pale gray, striped bark. Its leaves are gray-green. In May it blooms with large quantities of fragrant fluffy white blossoms, each with four clawed petals and eight stamens. The buds and the backs of the petals are rose-purple. These are followed by four parted capsules containing dark brown seed.

Utah fendlerella (*Fendlerella utahensis*)

MOCK ORANGE FAMILY (PHILADELPHACEAE)

Utah fendlerella grows in rocky crevices at scattered localities in Utah and the west. It is a low, leafy, much branched shrub, 8 inches to 3 feet high, that blooms from June to September. Inconspicuous white flowers occur in clusters at the ends of the branches.

CLIFF-BUSH

Cliff-bush or **waxflower** (*Jamesia americana*)

MOCK ORANGE FAMILY (PHILADELPHACEAE)

Cliff-bush or **waxflower** grows in our southern mountains and along the walls of the canyons. It is sometimes cultivated as an ornamental. It is a shrub 7 to 8 feet tall with gray-brown shreddy bark. The leaves are gray and velvety beneath and green on top; in autumn they turn bright red. The five petaled flowers are creamy white, tinged and pink and are fragrant. They bloom in July.

Littleleaf mockorange (*Philadelphus microphyllus*)

MOCK ORANGE FAMILY (PHILADELPHACEAE)

LITTLELEAF MOCKORANGE

Littleleaf mockorange rather resembles the mockorange of our gardens but is smaller. It is a twiggy, round shrub that is rarely more than 5 feet tall. Its leaves are small, numerous and pale colored. In southern Utah it grows on mountain sides and cliffs all the way from high elevations to the very edge of the desert. Its blooming season is from May to July, depending mostly upon the elevation of its habitat. Delightfully fragrant flowers have white petals and an abundance of yellow stamens.

Utah serviceberry or **sarviceberry** (*Amelanchier utahensis*)

ROSE FAMILY (ROSACEAE)

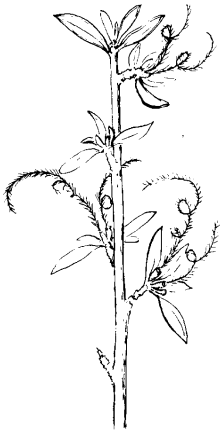
Utah serviceberry or **sarviceberry** is a shrubby tree up to 10 feet tall that grows on dry hillsides. It closely resembles the streamside serviceberry of our canyons, varying in flower size and degree of hairiness. It has fragrant white blossoms in April and May. Its fruit is eaten by wildlife and it is a valuable browse plant. *Amelanchier* is an alternate host for juniper rust.

UTAH SERVICEBERRY

Mountain mahogany (*Cercocarpus*)

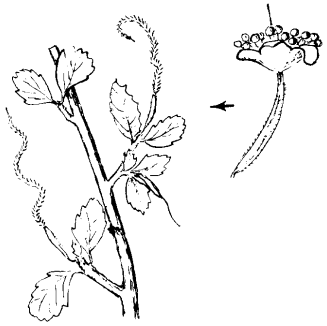
ROSE FAMILY (ROSACEAE)

Curlyleaf mountain mahogany (*Cercocarpus ledifolius*) is a small erect tree that grows on mountain sides and deserts. Its thick, leathery leaves are rather aromatic, roll back on the edges, and are dark green on top with grayish-green beneath. The blossoms consist of velvet textured pink sepals that appear from April to June. Western Indians made effective digging tools from the straight hard limbs. *C. ledifolius* var. *intricatus* is smaller and its leaves are rolled under more. It is especially prevalent in southeastern Utah.



MOUNTAIN MAHOGANY

Alderleaf mountain mahogany (*C. montanus*) is more spreading in overall shape. The leaves are distinctive in that they are broader in shape, their edges are toothed and do not curl under tightly, and they are deciduous, whereas the others are evergreen.



ALDERLEAF MOUNTAIN MAHOGANY

Fern bush or **tansy-bush** (*Chamaebatiaria millefolium*)

ROSE FAMILY (ROSACEAE)

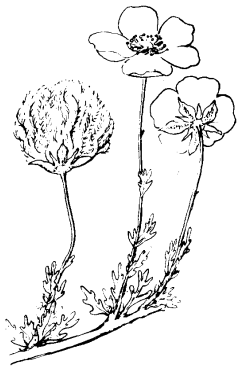
Fern bush or **tansy-bush** is a handsome semi-evergreen shrub that grows on dry rocky slopes in the pinyon-juniper belt. It is profusely branched and grows up to 6 feet tall. The bark is red and exfoliates from the larger branches. It blooms from June to August with numerous fragrant creamy-white flowers in elongated clusters. The foliage is thick, leathery, fern-like and aromatic.

FERN BUSH

Apache-plume (*Fallugia paradoxa*)

ROSE FAMILY (ROSACEAE)

Apache-plume is a handsome shrub in any season. It grows in dry rocky slopes and among pinyons and junipers. It is round and bushy and may be as much as 7 feet tall, but more commonly reaches only 4 to 5 feet. The bark is white and the leaves are evergreen. They are not aromatic. It is considered to be a good browse plant and soil binder. White, apple-like blossoms are borne on the ends of long slender stems in April and May, with a few blossoms produced throughout the summer. Its fruit is white plumed, tinged with purple or rust color.

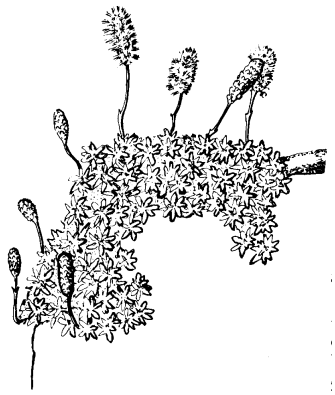


APACHE-PLUME

Rockmat (*Petrophytum caespitosum*)

ROSE FAMILY (ROSACEAE)

Rockmat is found on dry rock ledges and cliffs. It is a low rock-hugging evergreen shrub that roots in crevices and forms thick gnarled mats 3 feet or more in diameter. Its leaves are small and gray-green. The blossom stalks bear numerous cream colored blossoms with exerted stamens that make them look lacy. They bloom from June to October.

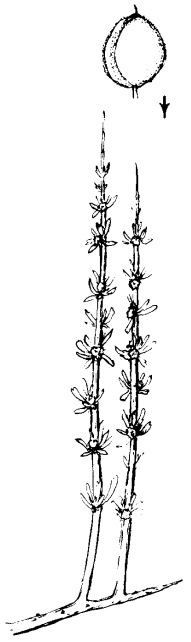


ROCKMAT

Desert almond (*Prunus fasciculata*)

ROSE FAMILY (ROSACEAE)

Desert almond is a straight-branched gray-barked shrub reaching 8 feet in height that grows in clumps and thickets along the rocky slopes of the southern Great Basin and westward into Arizona, Nevada, and California. The leaves are small and clustered in bundles. From March to May it blooms with tiny white flowers that grow from the leaf axils. These are followed with gray-green almond-like fruits that are about one-third inch long and covered with fine hair. They are split along one side.



DESERT ALMOND

Great rushy milk-vetch (*Astragalus lonchocarpus*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Great rushy milk-vetch is a distinctive plant with stout hollow stems up to 2 feet long and sparse rather soft, grass-like foliage. The blossoms hang gracefully along the stem and are white or cream-colored. The pods are tan, sometimes tinged with red.

GREAT RUSHY MILK-VETCH

Prairie clover (*Dalea*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Several handsome **prairie clovers** (*Dalea*) are native to the deserts of southeastern Utah, occurring on sandy sites, gravelly hillsides, and rock ledges. These are perennials that send up leaves and blossoms from a long woody root. Small dark glands dot their stems and leaves. **White prairie clover** (*D. candida*) and **canyonlands** or **Kanab prairie clover** (*D. flavescens)* both have dense cones of white flowers at the ends of 2 foot tall leafy stems, visible from late spring through summer. When crushed the fresh foliage of **canyonlands prairie clover** has a lemon fragrance.

CANYONLANDS PRAIRIE CLOVER

WHITE PRAIRIE CLOVER

Lance-leaf, dune or **lemon scurf-pea**
(*Psoralidium lanceolatum*)
PEA FAMILY (LEGUMINOSAE/FABACEAE)

Scurf-pea is an herbaceous perennial about 20 inches tall. It is common in dry sandy areas. Spreading readily from strong creeping rootstocks, it is an effective soil binder. The leaves are three-parted and thickly dotted with glands. The small flowers are densely clustered at the ends of stems and can vary in color from creamy-white to blue.

SCURF-PEA

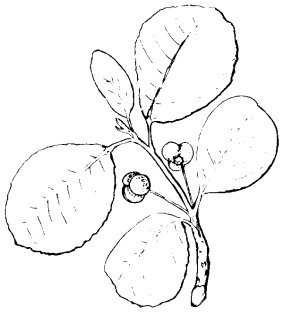
Mortonia (*Mortonia scabrella*)
STAFF-TREE FAMILY (CELASTRACEAE)

Mortonia is a stiff, much-branched shrub 2 to 5 feet high. Just entering Utah in the southwestern corner of the state where the low elevation warm desert vegetation occurs, it is often found on limestone and dry rocky slopes in creosote bush communities. Its numerous, close-set leaves are yellow-green, thick, leathery and rough to the touch. It blooms from April to June with small white flowers at the ends of the branches.

MORTONIA

Buckthorn (*Rhamnus betulifolia*)
BUCKTHORN FAMILY (RHAMNACEAE)

Buckthorn is a straggling desert bush that inhabits washes, canyon bottoms and moist places at the base of cliffs throughout southern Utah. In relatively arid situations it grows to 3 or 4 feet, but where more moisture is available, it may be as much as 16 feet tall. In May it bears small white flowers that are followed with reddish-black fruit. It is conspicuous for its beautiful leaves.

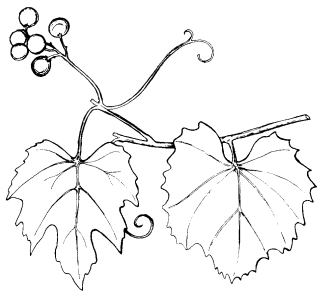


BUCKTHORN

Canyon grape (*Vitis arizonica*)

GRAPE FAMILY (VITACEAE)

Canyon grape, like our own garden grapes, has branches of juicy berries that make good juice or jelly or can be eaten fresh. Indians also chewed their tart leaves to allay thirst. This is a most attractive climbing or trailing plant with branches 15 to 20 feet long. It blooms from April to July with inconspicuous white flowers and ripens its dark blue fruit in late summer and fall. **Canyon grape** enters Utah only in the extreme southwestern region with other low elevation warm desert vegetation. Because its moisture requirements are greater than most desert plants, it is most frequently found in canyon bottoms, streamside, and near seeps or springs.

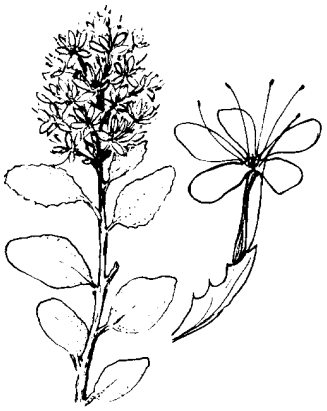


CANYON GRAPE

Sandpaper plant (*Petalonyx nitidus and P. parryi*)

BLAZING STAR FAMILY (LOASACEAE)

The **sandpaper plants** that grow in Utah are found only in our warm southwestern deserts. They are low round shrubs with white bark and pale green, white-edged leaves. They are covered with short, barbed hairs that give them a sandpaper texture. These plants have considerable variation within the species and at the same time quite closely resemble each other. **Parry sandpaper plant** *(P. parryi*) is about 3 feet high and woody. It has the larger flowers and blooms in April and May. *P. nitidus* is only about half as tall, tends to be herbaceous, and blooms from May to June. The flowers of both species come at the ends of the branches, are white or pale yellow, and sometimes bloom again in October.

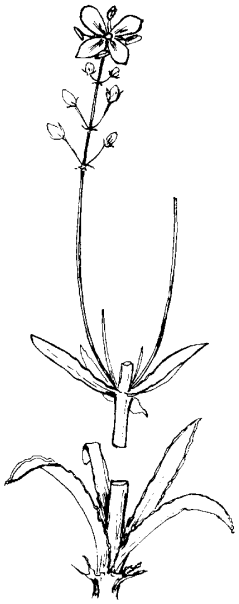


PARRY SANDPAPER PLANT

Whitemargin gentian (*Swertia albomarginata/Frasera a.*)

GENTIAN FAMILY (GENTIANACEAE)

Whitemargin gentian grows in southern Utah's pinyon-juniper woodland. It produces one to a few much branched stems 8 to 24 inches high, from a woody taproot. The numerous flowers have a greenish yellow or greenish white background color with markings of dark purple. The unusual leaves distinguish this species: they are pale green encircled with a narrow margin of white.



WHITEMARGIN GENTIAN

Evening primrose (*Oenothera*)

EVENING PRIMROSE FAMILY (ONAGRACEAE)

Our **evening primroses** (*Oenothera*) are herbaceous plants that inhabit sandy or gravelly hillsides. Their flowers are white or yellow,with four petals and four sepals. Most of them bloom at night and are pollinated by moths. They generally fade the next morning. Some are very fragrant. Our most common **evening primrose** (*O. caespitosa*) is also the most beautiful and fragrant. It is a low perennial plant that grows from a strong taproot and produces an abundance of basal leaves. The stemless blossoms extend above the foliage on long floral tubes. When they open, the flowers are snowy white, but they turn pink with age and fade when the morning sun strikes them. Each blossom is about 4 inches across.

EVENING PRIMROSE

White-stemmed evening primrose (*O. albicaulis*) and **Pale evening primrose** (*O. pallida*) are similar in general appearance. They both have with blossoms and white stems. Within Utah, **White-stemmed evening primrose** occurs only in the southeastern region and is distinguished by dimorphic leaves; leaves in the basal rosette are more or less shallowly lobed, whereas the stem leaves are deeply cleft. **Pale evening primrose** occurs throughout the state, has a stem with peeling epidermis, and leaves that are generally similar regardless of their position on the plant.

WHITE-STEMMED EVENING PRIMROSE

PALE EVENING PRIMROSE

Labriform milkweed (*Asclepias labriformis)*

MILKWEED FAMILY (ASCLEPIADACEAE)

Labriform milkweed grows in marshy areas or along dry sandy washes in eastern Utah. It has creeping roots. The erect stems are covered with long narrow leaves. Its summer blooming flowers come at the top of stems that may be as much as 3 feet tall. The flowers are a creamy white color and occur in dense clusters.

LABRIFORM MILKWEED

Alkali weed (*Cressa truxillensis*)

MORNING-GLORY FAMILY (CONVOLVULACEAE)

Alkali weed is a low, tufted, perennial plant 4 to 8 inches tall that grows in saline or alkaline soil near water courses or in salt-marsh areas. Small, but numerous, leaves are covered with short, white woolly hair. It blooms from May to October with white flowers that have dark colored exerted stamens.

ALKALI WEED

Ballhead gilia (*Gilia congesta*)

PHLOX FAMILY (POLEMONIACEAE)

Ballhead gilia (*Gilia congesta*) is an erect perennial having several stems 6 to 12 inches long and a compact head of white flowers at the top of each. It blooms from June to August. This species is widely scattered throughout central and southern Utah. It seems to be tolerant to a wide range of elevations as well as to saline soil. The leaves and stems are covered with fine white hairs.

BALLHEAD GILIA

Narrowleaf yerba santa or **mountain balm** (*Eriodictyon angustifolium)*

WATERLEAF FAMILY (HYDROPHYLLACEAE)

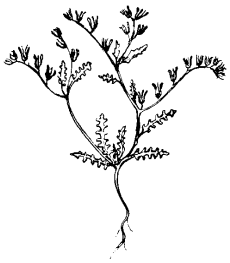
Narrowleaf yerba santa or **mountain balm** is an evergreen shrub of warm desert regions, that grows on sandy hills in southwestern Utah. It has underground roots that produce thickets of growth about 6½ feet tall. The leaves roll under at the edges. On the top they are dark green and resinous, while beneath, except for light green veins, they are densely hairy and grayish-white. In May and June it has numerous clusters of lilac-white blossoms at the ends of its branches. Several plants belonging to this genus have medicinal properties. A tea made from yerba santa leaves is said to be beneficial for a sore throat.

NARROWLEAF YERBA SANTA

Ives phacelia (*Phacelia ivesiana*)

WATERLEAF FAMILY (HYDROPHYLLACEAE)

Ives phacelia grows mostly in southern Utah but can also be found further north. It is an annual, 1 to 10 inches tall, and a spreading, decumbent plant with many thin leafy branches originating from its base. It blooms from March to June with small, rather inconspicuous flowers that are white with yellow throats.



IVES PHACELIA

Three hearts (*Tricardia watsonii*)

WATERLEAF FAMILY (HYDROPHYLLACEAE)

Three hearts, a rather rare desert perennial 4 to 12 inches tall, grows on dry, rocky slopes in extreme southwestern Utah with other warm desert vegetation. It attracts attention with showy, heart-shaped, pinkish green sepals that are each about one-half inch in diameter and surround the purplish-white flower. It blooms from April to June.

THREE HEARTS

Utah cryptantha (*Cryptantha utahensis*)
Purpleroot or **redroot cryptantha** (*C. micrantha*)

BORAGE FAMILY (BORAGINACEAE)

Utah cryptantha and **purpleroot** or **redroot cryptantha** are two white-flowered annuals typically found in dry open places in the deserts of southern Utah. They are both covered with short bristly hairs. **Utah cryptantha** occurs only in the warm desert of southwest Utah and is our only fragrant cryptantha. **Purpleroot cryptantha** is a smaller more delicate plant, with roots that produce a strong violet dye that stains nearly everything it touches, even when the plants are dry.

UTAH CRYPTANTHA

MORNING-GLORY
HELIOTROPE

Morning-glory heliotrope (*Heliotropium convolvulaceum*)

BORAGE FAMILY (BORAGINACEAE)

Morning-glory heliotrope is a loosely branched annual that may be 1 inch or 12 inches tall depending upon the season's rainfall. It flowers in April and May with small papery blossoms that resemble tiny morning glories. Each blossom is about one-half inch across and is sweetly scented. They open in late afternoon.

Sacred datura, **moon lily** or **jimsonweed** (*Datura wrightii*)

POTATO or NIGHTSHADE FAMILY (SOLANACEAE)

Sacred datura, **moon lily** or **jimsonweed** is a handsome annual plant that in favored spots grows to almost 5 feet tall and 4 feet wide. It is quite common in rocky soil and at the base of cliffs in southern and central Utah, but may also be found scattered over our other desert areas where the soil is salt-free. The stems and leaves are velvety gray-green and have a distinctly unpleasant odor. It blooms in the summer with magnificent, fragrant, trumpet-like flowers that come out in the evening and fade before noon the following day. They are usually snow white, but may be tinged with lavender. This plant is quite poisonous and has been used as a hallucinogenic drug.

SACRED DATURA

Wolfberry (*Lycium*)

POTATO or NIGHTSHADE FAMILY (SOLANACEAE)

Wolfberries or **thornbushes** are common inhabitants of the warm deserts to the south and west of Utah; within our state they are most prevalent in washes or dry rocky slopes along the southern border. These thorny shrubs bloom in the spring. Like a number of desert-adapted plants, they are drought-deciduous. They produce leaves in response to favorable conditions and drop them when water is unavailable. The small, tomato-like fruit has often been used as food by native peoples, but is not very palatable by modern standards.

Anderson's wolfberry (*Lycium andersonii*) has small trumpet-shaped white and lavender flowers. The fruit is red and fleshy. It is known from western and southern Utah. **Pale wolfberry** (*L. pallidum*) was so named for its pale green leaves. The numerous white to lavender flowers hang pendulously and produce a greenish purple fruit. This species does not extend far northward within Utah.

ANDERSON'S WOLFBERRY

PALE WOLFBERRY

Coyote tobacco (*Nicotiana attenuata*)

POTATO or NIGHTSHADE FAMILY (SOLANACEAE)

Coyote tobacco is common in sandy washes and open desert woodlands throughout Utah. Growing from 6 inches to about 3 feet tall, it is an erect, slender annual plant with green leaves that usually are covered with glands that make them sticky. It blooms all summer with whitish, night-blooming flowers that are very fragrant. This plant is narcotic-poisonous.

COYOTE TOBACCO

Bedstraw (*Galium*)

MADDER FAMILY (RUBIACEAE)

Two **bedstraws** (*Galium*) occur in the desert habitats of Utah. Both species are woody-based perennials 6 inches to 2 feet tall, with exfoliating shreddy bark, and small, but numerous, creamy white or yellow green flowers. The male and female parts appear in different flowers on the same plant. **Shrubby bedstraw** (*G. multiflorum*) occurs mainly in the rocky sites throughout the state and has creamy white flowers in summer. **Desert bedstraw** (*G. stellatum*) extends into Utah only in the warm desert region of the extreme southwest corner of the state. It is distinguished by its four-angled whitish stems, pale gray-green leaves and yellow green flowers that bloom in April and May.

SHRUBBY BEDSTRAW

White plectritis (*Plectritis macrocera*)

VALERIAN FAMILY (VALERIANACEAE)

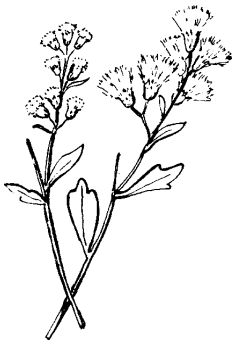
White plectritis is a highly variable annual that is usually found in moist places such as streambanks or only in early spring on open slopes in desert shrub in central Utah. It may be slender or robust and be 4 inches or 24 inches tall. In the spring it produces terminal clusters of flowers that are small and pale pink or white. It is most interesting for its rather fleshy leaves, which, when young, make a good salad.

WHITE PLECTRITIS

Emory baccharis (*Baccharis emoryi*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Emory baccharis is a large erect, loosely branched, woody shrub, that is common along moist stream banks in southern Utah. It is usually about 8 feet tall. The leaves are evergreen and somewhat resinous. **Baccharis** produces male and female blossoms separately. It blooms in the fall with numerous rather inconspicuous, whitish flowers. The female blossoms are soon followed by fruits surrounded by conspicuous white, shining and long hair-like bristles.



EMORY BACCHARIS

Brickellbush (*Brickellia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Brickellbushes constitute a large genus of plants that are characterized by the fine stripes on the bracts that encircle the blossoms. The species included here are all shrubs of rocky or sandy deserts. They have open ascending branches and glandular foliage. **Longleaf brickellbush** (*Brickellia longifolia*) is common in southern Utah. It is 3½ feet to 5 feet tall and has white, striated bark. It blooms in the fall with rather loosely arranged whitish blossoms. The leaves are shiny and sticky.

Rough brickellbush (*B. microphylla*) has numerous slender, intricate branches from a thick woody base. It grows into a rounded plant 16 to 32 inches high and just as wide. Its elongated flower heads are borne at the ends of the branches in late summer. They are white, tinged with purple. This plant is quite common in central and southern Utah.

ROUGH BRICKELLBUSH

LONG-LEAF BRICKELLBUSH

White tack-stem (*Calycoseris wrightii*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

White tack-stem grows in southwestern Utah and in neighboring states to the south and west. It makes an impressive floral display each spring. This is an erect branching annual up to about 1 foot high, with flowers at the ends of the stems. The blossoms' heads are white with pale yellow at the base and a pink-lavender stripe on the outside. Little pale green tack-shaped glands are scattered along the stem.

WHITE TACK-STEM

Pincushion (*Chaenactis*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

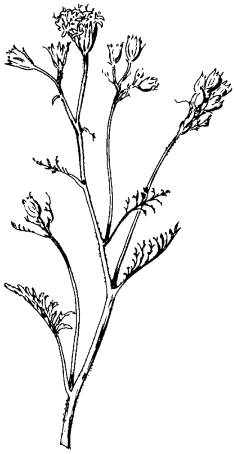
We have several species of *Chaenactis* that grow in Utah's arid lands. All of them are called pincushion flowers because their whitish-pink flower heads resemble that household item, complete with pins. All have gray-green foliage and produce only disk flowers.

Douglas pincushion (*C. douglasii*) is the largest of ours. It is a sturdy biennial or perennial with leafy stems up to 2 feet tall. It is found in all our pinyon-juniper woodlands and at a wide range of elevations. It blooms in summer.

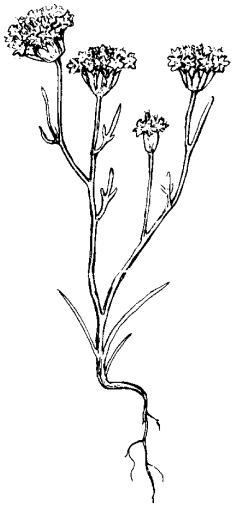
Fremont pincushion (*C. fremontii*) is an erect winter annual 2 to 16 inches high. It grows on open desert slopes in southwestern Utah and blooms with white flowers from March to May. Its leaves are bright green.

Esteve pincushion (*C. stevioides*) is a freely branched annual 2 inches to 8 inches high that is common on sandy desert floors in eastern and western Utah. It blooms in March with white flowers.

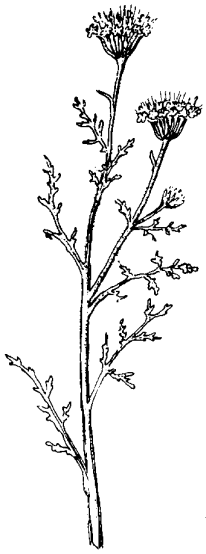
Mohave pincushion *(C. macrantha*) is the smallest of this group (2 to 8 inches) but its flowers are among the largest. It is a winter annual with whitish leaves, spreading branches and white to pinkish blossoms that open at night. It inhabits sandy, gravelly slopes in western and southeastern Utah and blooms in May and June.



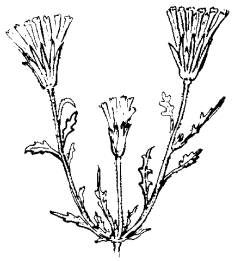
DOUGLAS PINCUSHION



FREMONT PINCUSHION



ESTEVE PINCUSHION



MOHAVE PINCUSHION

Stemless chamaechaenactis (*Chamaechaenactis scaposa*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Stemless chamaechaenactis is a densely hairy little perennial plant that grows up to 4 inches high from a thick taproot. All its leaves are basal; rolled under at the edge; gray-green on top and frosty-gray beneath. The flowers are white or flesh colored and have only ray flowers. It blooms in May and June and grows in open pinyon-juniper woodlands of east-central Utah.

STEMLESS CHAMAECHAENACTIS

Alkali rabbitbrush (*Chrysothamnus albidus*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

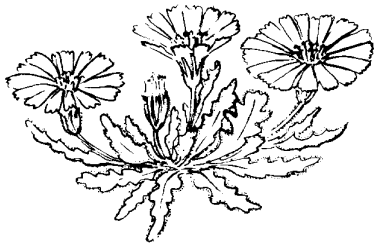
Alkali rabbitbrush has white flowers, white bark and grows to be 1 foot to 4 feet tall. It is most prevalent in areas of the Salt Lake desert where the soil is vernally moist such as seeps or seasonal meadows. It is unusual among rabbitbrushes for both its white flower color and tolerance of soil alkalinity.

ALKALI RABBITBRUSH

Keyesia (*Glyptopleura setulosa*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Keyesia is a beautiful little, low growing desert annual that reaches into sandy areas in southwestern Utah. It has numerous thick, succulent, lobed and ruffled basal leaves with prickly white, crusted edges. During its blooming season in April and May, it is completely covered with short-stemmed blossoms up to 1½ inches in diameter. They range in color from white, cream or yellow to pale lavender. All of them tend to turn pink with age. *G. marginata* is very similar but has deeper, more conspicuous margins and slightly smaller white flowers that age to red. It blooms from April to July and inhabits sandy areas in the southernmost counties. The leaves have a bitter odor when bruised.

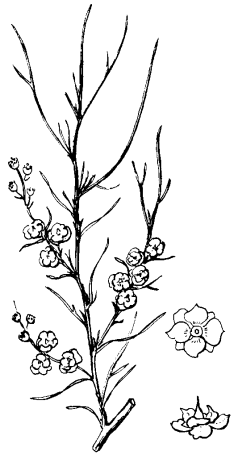


KEYESIA

Cheesebush or **white burrobush** (*Hymenoclea salsola*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Cheesebush or **white burrobush** occurs in southwestern Utah. It is a much branched little shrub 2 or 3 feet high that tends to form thickets in sandy alkaline soil along desert washes. It has bright green leaves 1 to 2 inches long that have a rather pleasant cheesy odor when crushed. It blooms in March and April. The male and female flower parts occur in different blossoms on the same plant. The fruit is subtended by thin silver-red scales that have a cone-like appearance and are much showier than the flowers.



CHEESEBUSH

Smooth woodyaster (*Xylorhiza glabriuscula*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

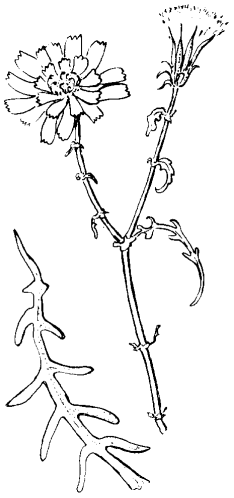
Smooth woodyaster is numerous on some barren clay slopes in the pinyon-juniper woodland of southeastern Utah. Its 3 to 6 inch stems are densely leafy on the lower half of their length. The flower heads are about 1¾ inches wide with white rays and yellow disk flowers. They spread with underground runners and make a showy display of bloom in summer.

SMOOTH WOODYASTER

Desert chicory (*Rafinesquia neomexicana*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Desert chicory is a slender, branching annual 10 inches to 18 inches high, with attractive very fragrant flower heads measuring up to 1½ inches in diameter. It makes its appearance soon after the winter rains and is frequently found growing up through low shrubs in the warm desert of southwestern Utah. It blooms from February to June. The rays are notched at the ends and snow white with a rose-lavender stripe on the underside. The pappus on the seed is snowy white.



DESERT CHICORY

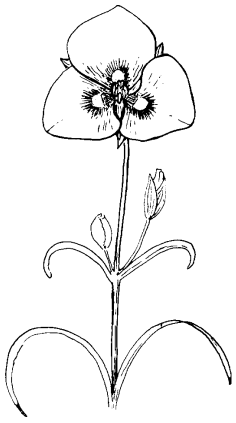
Hoary townsendia or **hoary easter daisy** (*Townsendia incana*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Hoary townsendia or **hoary easter daisy** is one of about 25 species of townsendias, which are native to western North America. This species can be found in the eastern half of Utah. It blooms from May to September with large flower heads at the upturned ends of branches that tend to be prostrate. The blossoms are lavender beneath and white above.

HOARY TOWNSENDIA

YELLOW FLOWERS

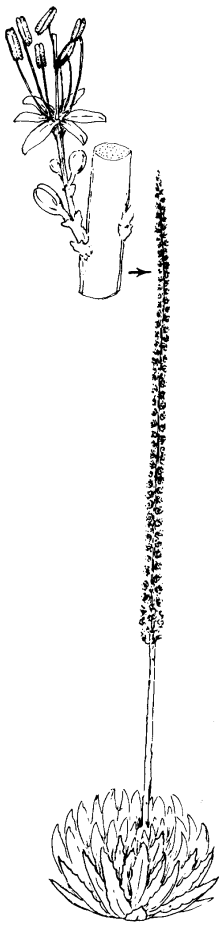


GOLDEN MARIPOSA

Golden mariposa (*Calochortus aureus*)

LILY FAMILY (LILIACEAE)

Golden mariposa has large golden yellow flowers with a purple blotch at the base of each petal. The flowers are supported by delicate stems that arise from deeply buried bulbs. Three grass-like leaves usually wither before the flowers open. In Utah its distribution is generally limited to the region between the Colorado Drainage and the High Plateaus.



UTAH CENTURY PLANT

Utah century plant (*Agave utahensis)*

AGAVE FAMILY (AGAVACEAE)

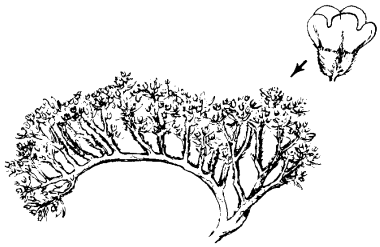
In Utah, **Utah century plant** grows in the St. George area. The thick, waxy, water storing leaves are about a foot long and form a tight basal rosette. They are gray-green, sharp-tipped and have hooked spines along the edge. When the plant is about 10 years old, it sends up a blossom spike 8 to 20 feet high. The blossoms are yellow and fleshy. Indians eat the roasted buds and stalk. They make an intoxicating drink, called tequila, from the plant juices.

Buckwheat (*Eriogonum*)

BUCKWHEAT FAMILY (POLYGONACEAE)

Many of the more than 100 species of **buckwheats** (*Eriogonum*) that grow in the open desert areas of the western states occur in Utah. They constitute a genus of great diversity. Some are woody spreading shrubs, others form ground-hugging mats, and some grow on solitary stems. A few rather consistent characteristics help to identify the genus. The branches are usually thin and wiry and grow at conspicuously divergent angles. Their foliage is usually (but not always) covered with fine hair that gives it a gray appearance. The smallish blossoms are bell-shaped and are encased in a circle of bracts (involucre) which vary in shape and may have one or many flowers in each. Blossoms are frequently so numerous that in spite of their small size they become showy. Their color ranges from white through yellow, pink and lavender. The name "buckwheat" is derived from German for "beech-wheat" since the three-sided seeds resemble beechnuts.

Stemless buckwheat (*E. shockleyi*) is one of the most attractive of our Utah species. The plants form cushions and, when blooming in early summer, they are small thick mounds less than 6 inches high and twice as wide, covered with cream to yellow blossoms. The leaves sheath the stems and are conspicuously woolly on the underside.



STEMLESS BUCKWHEAT

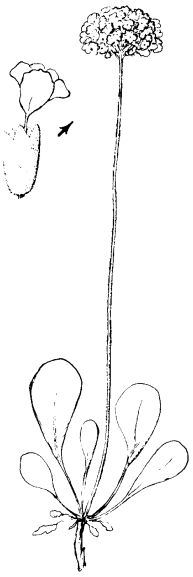
Matted buckwheat (*E. caespitosum*) is a low-growing plant with tight blossom heads on straight stalks. It blooms April to August with flowers that are yellow, rose or red. In Utah, this species may be found in the western and northern regions.

MATTED BUCKWHEAT

Our **desert buckwheat** (*E. brevicaule* var. *desertorum*) grows in northwestern Utah. Its mustard yellow blossom heads stand on leafless stems well above thick clustered woolly leaves. They form a loose low mound of bloom.

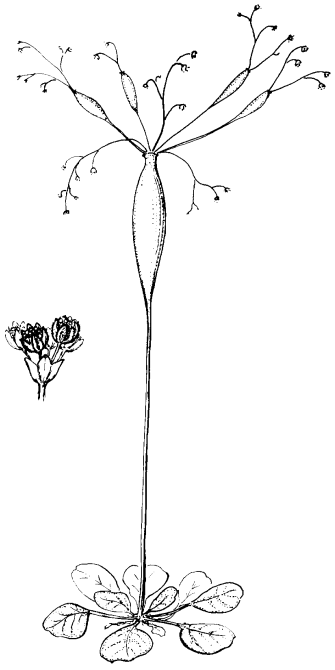
DESERT BUCKWHEAT

Cushion buckwheat (*E. ovalifolium*) has numerous woolly, gray, round leaves. The blossoms are borne in dense pompons on straight stems. They vary from creamy white with yellow or pink markings to solid yellow or pink. It is widely distributed in Utah's deserts and blooms from April to August.



CUSHION BUCKWHEAT

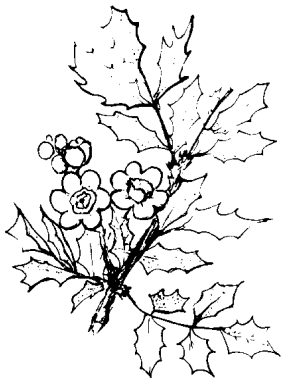
Desert trumpet (*E. inflatum*) is so named for its interesting waxy, bluish-green inflated stems. It was discovered by Fremont in 1844. It is an annual or perennial plant that grows from a woody taproot, and ranges from 4 to 40 inches in height. The branches are almost leafless; but it has flat, silvery green leaves at its base. The flowers are small and scattered; and are yellow with reddish markings. **Desert trumpet** grows in heavy soil in southern and eastern Utah. It blooms in late spring and dies as soon as the seed is matured. The dried plant remains standing for many months.



DESERT TRUMPET

Fremont barberry (*Berberis fremontii*)

BARBERRY FAMILY (BERBERIDACEAE)



FREMONT BARBERRY

Fremont barberry is a handsome evergreen shrub that grows up to 8 feet tall. Its holly-like foliage is awaxy gray-green and well fortified with prickles. Like other barberries its wood is a rich yellow color. The Hopi Indians extract a yellow dye from the roots and use its blue berries for painting their skin for ceremonies. Its fragrant yellow blossoms come in loose clusters from May to July. The fruit is relished by rodents and birds. It grows in southern and eastern Utah.

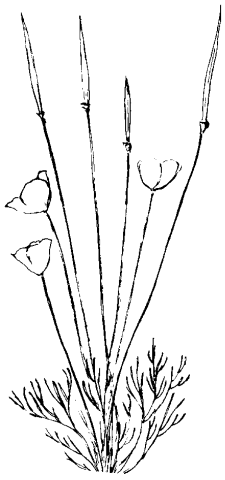
Golden poppy (*Eschscholzia*)

POPPY FAMILY (PAPAVERACEAE)

CALIFORNIA POPPY

The **California poppy** or **golden poppy** (*Eschscholzia californica*) is the state flower of California. It is not considered to be native to the state of Utah, but can often be seen here because of its extensive use in landscaping and revegetation. The early Spanish-Americans called the golden poppy "dormidera" or "sleepy one" because the flowers remain closed whenever the sun is not shining.

The **Mexican golden poppy** (*E. mexicana*) is the most showy of Utah's native golden poppies and strongly resembles the California poppy with finely dissected blue-green leaves and golden goblet shaped flowers.



DESERT GOLDEN POPPY

Little golden poppy (*E. minutiflora*), true to its name, has minute flowers with petals only one-quarter inch long.

Desert golden poppy *(E. glyptosperma*) has tufted basal leaves and a flower with three-quarter inch long petals at the end of each erect, leafless stem. The golden poppies occur throughout the southwestern region of Utah with other warm desert species.

Tansymustard (*Descurainia pinnata*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

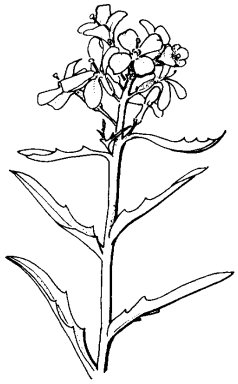
Following spring rains, **tansymustard** becomes abundant in most of our desert areas. It is an annual that grows rapidly to maturity and then disappears for another year. Its ferny green leaves have a peppery flavor. The flowers are greenish-yellow. It reaches a maximum height of about 14 inches.

TANSYMUSTARD

Wallflower (*Erysimum asperum*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Wallflower is a common and well known wild flower that grows in our mountains as well as our deserts. It is an unbranched plant 1 to 2 feet high. It may bloom anytime from March through September with flowers that range in color from lemon yellow to dark orange and have a pungent, spicy fragrance. Its shallow root system makes it especially vulnerable to being uprooted.

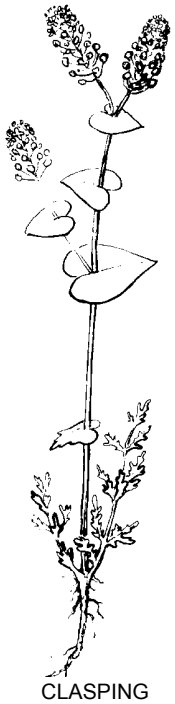


WALLFLOWER

Clasping peppergrass (*Lepidium perfoliatum*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Clasping peppergrass is a yellow-flowered annual weed of European origin which has become common in our deserts. It grows to about 2 feet high and is easily distinguished by its "perfoliate" leaves that clasp and surround the upper parts of its stems.



CLASPING
PEPPERGRASS

Bladderpod or **bead pod** (*Lesquerella)*

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

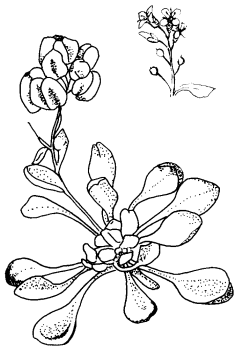
Bladderpod or **bead pod** are common names for several species of *Lesquerella* that grow in the sand deserts of eastern and southern Utah. Beginning in February, they produce solid carpets of gold blossoms. The beautiful star-like pubescence (hairs) on stems, fruits and leaves can be seen with the aid of a lens. Perennial bladder pods commonly found in Utah deserts include **king bladderpod** (*Lesquerella kingii)*, **silver bladderpod** (*L. ludoviciana*), and **Colorado bladderpod** (*L. rectipes*).

BLADDERPOD

Twinpod (*Physaria*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Twinpod (*Physaria*) is closely related to **bladderpod** (*Lesquerella*) and strongly resembles it. **Twinpod** tends to have a thicker basal rosette of leaves and is more apt to be prostrate. Following its yellow flowers it develops an inflated, double fruit capsule that has a papery quality and becomes tinged with red as it matures. Our most common desert species are **Chamber's twinpod** (*P. chambersii*), occurring throughout western Utah, and **Rydberg twinpod** (*P. acutifolia*) which is common to eastern Utah. Both bloom in early spring.

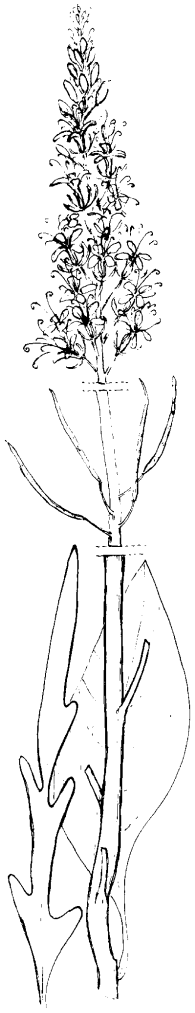


TWINPOD

Princeplume (*Stanleya pinnata*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Princeplume is our most glamorous member of the mustard family. Its spreading flower spikes are often 4 feet tall with numerous yellow flowers covering the upper half of this length. The delicate flowers have exerted stamens that add a lacy quality and contrast sharply with the dry rocky places where they grow. Bloom is from April to September. The leaves are gray-green with a waxy texture. These plants are poisonous because they take selenium from the soil. Even so, they are said to have been used as potherbs by early Indians.



PRINCEPLUME

Yellow bee flower or **spider flower** (*Cleome lutea*)

CAPER FAMILY (CAPPARACEAE)

Yellow bee flower or **spider flower** is an annual that becomes abundant in open areas following spring rains. Its height varies from a few inches to about 2 feet, depending upon how much moisture is available. Its attractive blossoms are borne in elongated, round-topped clusters. They are clear yellow and have long exerted stamens. Its leaves are five-to seven-parted.

Palmer's cleomella (*Cleomella palmerana*)

CAPER FAMILY (CAPPARACEAE)

Palmer's cleomella is a small annual that grows in sandy loam soil amongst salt desert scrub vegetation within the Colorado Plateau of eastern Utah. It has bright yellow flowers, each with a diameter of about one-half inch. **Twistseed cleomella** (*C. plocasperma*) has quite a similar look, but grows on the west side of the Wasatch mountain backbone that bisects Utah and has what is called a Great Basin distribution.

CLEOMELLA

BLACKBRUSH

Blackbrush (*Coleogyne ramosissima*)

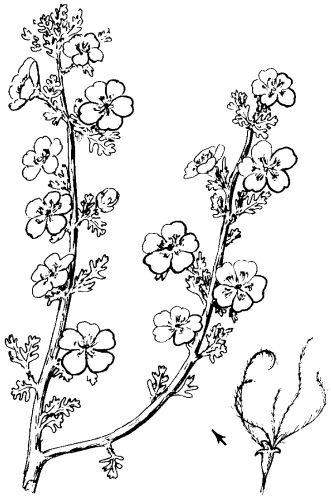
ROSE FAMILY (ROSACEAE)

Blackbrush is the dominant species in some open gravelly desert areas of southeastern Utah. The plants frequently grow close together in clear stands. **Blackbrush** is a dense, much-branched, medium sized shrub with dark evergreen leaves. In June its old leaves fall off, while newer ones remain. Branch ends have a tendency to become dry and sharp. On years when rainfall has been adequate, it bears numerous blossoms from March to May. These rarely have petals, but the inside surface of the four sepals is bright yellow. After the flower is fertilized, the sepals close around the seed capsule where they remain until the seeds are mature.

Cliffrose or **quinine-bush** (*Cowania mexicana*)

ROSE FAMILY (ROSACEAE)

Cliffrose or **quinine-bush** is a desert shrub of open rocky areas where it grows 4 to 25 feet high. The limbs of older plants become gnarled and the bark shreddy. This soft fiber was once used by desert Indians to make mats, sandals and clothing. The foliage is gray-green and very bitter tasting; nevertheless, it is one of the most important of the browse plants. In the spring it produces large quantities of pale yellow flowers that resemble little single roses. They have a delightful fragrance.



CLIFFROSE

Mesquite (*Prosopis glandulosa*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

MESQUITE

Mesquite is a deciduous shrubby tree that may be as much as 30 feet tall with several trunks and crooked branches. In Utah it is found only along our southern border where it grows along washes and water-courses. Its roots may grow 100 feet deep in order to reach water. This is one of the most important plants in southwest deserts and has a history of usefulness to man. For some tribes of Indians, a meal (pinole) made from its beans is still a staple food. Their ancestors also used its bark for weaving, its wood for fuel, and its dark gum for making a black dye. Cattle eat the seeds and pods. It blooms in spring with numerous fragrant, small yellowish flowers that are an important source of honey.

Rushpea (*Caesalpinia repens*)

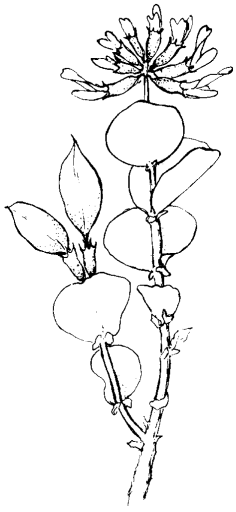
PEA FAMILY (LEGUMINOSAE/FABACEAE)

RUSHPEA

Rushpea is a low growing perennial of sand dunes in southeastern Utah. It spreads by creeping underground stems that send up numerous 4 to 6 inch stems, each bearing a raceme of yellow blossoms. The flowers are three-quarter or more inches in diameter and are marked with red. The leaves are made up of numerous small leaflets that are somewhat sensitive to being touched, though their reaction is much slower than the well known "sensitive plant" of the tropics. Their flat pea like pods are rather sparse and tend to become twisted and reddish at maturity.

Milkweed milk-vetch (*Astragalus asclepiadoides*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)



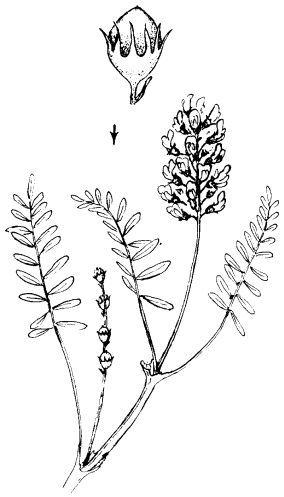
MILKWEED MILK-VETCH

Milkweed milk-vetch has thick, leathery, gray-green foliage that resembles some of the milk-weeds. It is common in clay-selenium soils in east-central Utah. This stout plant grows up to 16 inches tall. It has a buried crown and rather erect habit of growth. Blossoms vary in color from greenish yellow to dull purple. The pods are carried upright on the branches and are tan colored at maturity.

Yellow loco-weed (*Astragalus flavus*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Yellow loco-weed is a low wiry, loosely tufted plant that often forms mats up to 20 inches in diameter. It is frequently abundant on barren, alkaline-clay hills and plateaus of southern and eastern Utah. The pale colored flowers tend to become more yellow at maturity. They may bear traces of lavender-pink when they first open. The foliage is densely covered with long silvery hair. The plants are poisonous.

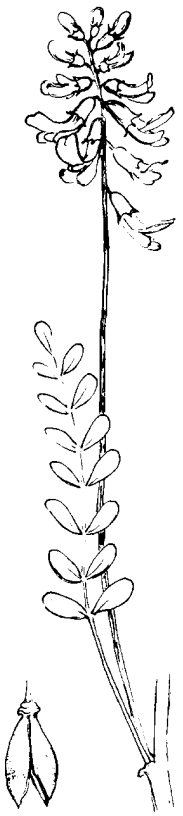


YELLOW LOCO-WEED

Stinking loco-weed (*Astragalus praelongus*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Stinking loco-weed is a coarse, vigorous plant with stems more than 30 inches long. Its leaves are thick textured, green and have a strong selenium odor. This plant is highly toxic. It blooms in early spring with yellowish flowers clustered at the apex of the stem. Some blossoms may be tinged with purple. The pods are thick walled and tend to be woody.

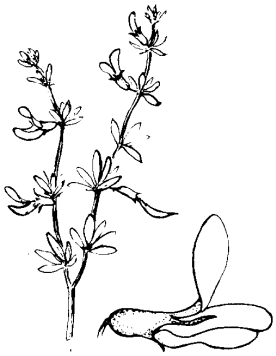


STINKING LOCO-WEED

Bird's foot or **trefoil** (*Lotus wrightii*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Bird's foot or **trefoil** is a slender stemmed perennial plant 4 inches to 20 inches tall, that grows from a woody caudex. It is found on sagebrush slopes and in open woodlands in southern Utah. It blooms in summer with elongated pea-shaped flowers that are yellow tinged with brick-red.



BIRD'S FOOT

Broom flax (*Linum aristatum*)

FLAX FAMILY (LINACEAE)

Broom flax is a native annual that grows on sandy ridges and dunes in southeastern Utah desert plant communities. It is a delicate plant 18 inches high, with narrow gray-green leaves. The yellow flowers bloom around the ends of the branches from May to September. The Hopi Indians were reported to have used this plant as a medication. Flax seed is quite nutritious and is rich in oil. The fibrous stems were once used as cordage.

BROOM FLAX

Creosote bush (*Larrea divaricata/L. tridentata*)

CALTROP FAMILY (ZYGOPHYLLACEAE)

CREOSOTE BUSH

Creosote bush is the dominant shrub over large areas south and west of our state border. In Utah it is found only in Washington County. It is a handsome plant with dark stems and leaves and a distinctive resinous odor. **Creosote bush** grows from 2 to 10 feet tall, depending on the habitat. Its seasonal cycles are completely determined by the moisture patterns. After winter rains, it produces abundant yellow flowers in April and May. These are followed by fuzzy white seed-balls. If it rains again in July or August it produces a second crop of bloom. When the season is dry, the creosote bush drops its leaves and remains dormant. This plant contains some toxins and is used by native Indians for a wide assortment of ailments.

Puncture vine (*Tribulus terrestris*)

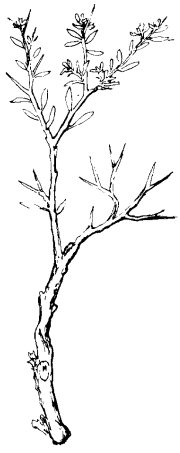
CALTROP FAMILY (ZYGOPHYLLACEAE)

PUNCTURE VINE

Puncture vine is an annual introduced weed that has become common, especially along roadways in sandy desert areas. It has vine-like stems 2 to 6 feet long, with rather attractive ferny leaves and small yellow blossoms that begin to bloom in March and continue until October. The fruit is a five-parted burr with sharp spines, that make it especially troublesome to small animals, bicycle tires and barefooted people. Its Latin name refers to the resemblance of these burrs to the spiked balls used in medieval warfare.

Thorny milkwort (*Polygala acanthoclada*)

MILKWORT FAMILY (POLYGALACEAE)



THORNY MILKWORT

Thorny milkwort is an intricately branched spiny shrub that reaches a height and diameter of 3 feet. The intricate branches tend to stop blowing soil particles, and, thus, form hummocks. It blooms in early summer with tiny yellow flowers at the branch tips. The common name refers to the milky juice of the plant.

Skunkbush, oak-leaf sumac or **squawbush** (*Rhus trilobata/R. aromatica*)

SUMAC FAMILY (ANACARDIACEAE)

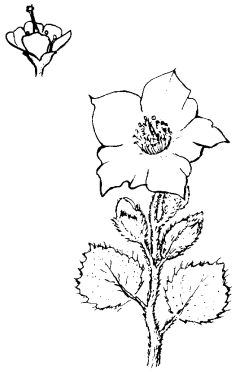
SKUNKBUSH

Skunkbush, **oak-leaf sumac** or **squawbush** is an adaptable shrub that grows on hillsides or in washes, but may also be found in desert seeps. It grows to be 3 to 5 feet tall and has slender flexible branches. Before the leaves appear, it produces numerous clustered spikes of yellow blossoms. These are followed by red edible fruits. The leaves have a strong odor when crushed.

Rock-nettle or **stingbush** (*Eucnide urens*)

BLAZING STAR FAMILY (LOASACEAE)

Rock-nettle or **stingbush** grows in extreme southwestern Utah on dry rocky slopes. It is a handsome, thickly branched plant about 2 feet high. The leaves are covered with numerous white stinging hairs that can inflict painful injury. From April to September it produces remarkably beautiful, pale yellow blossoms 1½ to 2 inches across.



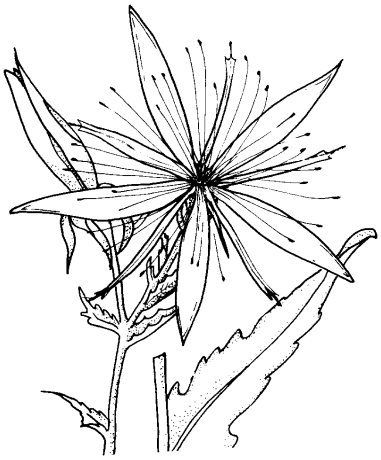
ROCK-NETTLE

Blazing-star (*Mentzelia*)

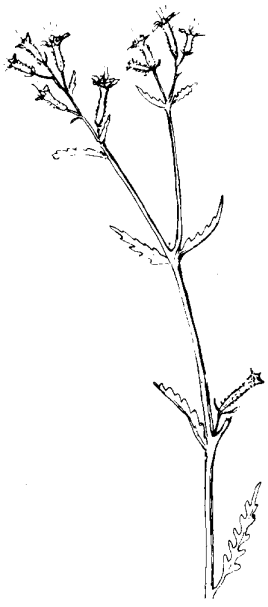
BLAZING-STAR FAMILY (LOASACEAE)

Blazing-stars are represented in our state by several species all having rough rather gray-green leaves and pale to white stems. Their flowers vary considerably in size and range in color from white to yellow. They have from five to ten petals and stamens that tend to become petal-like. All (ours) grow in open dry ground and most are night bloomers.

Smoothstem blazing-star (*M. laevicaulis*) has the largest blossoms of all those listed here, being as much as 2 to 3 inches across. A perennial that can reach 4 feet in height, it occurs most commonly in the western half of Utah. In the eastern portion of the state, the perennial blazing-stars include **many-stem blazing-star** (*M. multicaulis*), **desert blazing-star** (*M. multiflora*), and **dwarf blazing-star** (*M. pumila*). **Dwarf blazing-star** grows somewhat lower, with flexuous or twisted stems.



SMOOTH STEMMED BLAZING-STAR



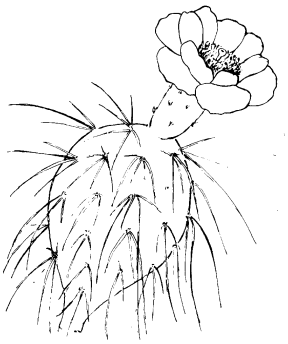
WHITESTEM BLAZING-STAR

A number of annual blazing-stars also occur in the Utah deserts. They are usually shorter, less robust plants with smaller and less conspicuous flowers. **Whitestem blazing-star** (*M. albicaulis*) occurs throughout the state from creosote bush to pinyon-juniper communities, whereas **glorious** or **spiny-haired blazing-star** (*M. tricuspis*) is confined to the low elevation warm desert shrub communities in sandy areas of the extreme southwestern corner. It is a low bristly plant with cup-shaped pale yellow flowers.

Prickly-pear and **cholla cacti** (*Opuntia*)

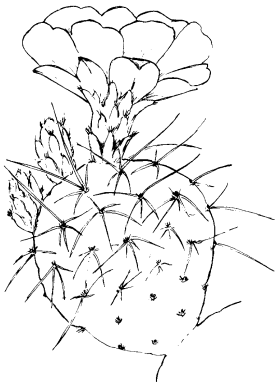
CACTUS FAMILY (CACTACEAE)

Opuntia has the widest distribution and the most diversity of species of any cactus group in Utah. The stems of *Opuntia* are smooth-surfaced and are composed of a series of joints. In some species they are flattened and in others cylindrical. Their spirally arranged areoles have small bunches of barbed bristles and spines called glochids that distinguish *Opuntia* from other cacti. Flowers are produced on the joints of year-old stems.



PLAINS PRICKLY-PEAR

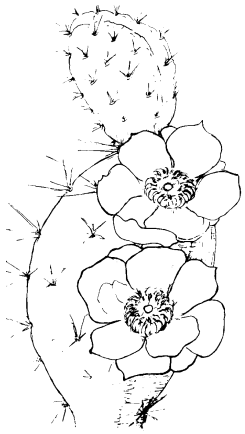
Plains prickly-pear (*O. polyacantha*) is a sprawling plant with flattened stems. It blooms from April to July and is common in all our deserts. The flowers are yellow when they first bloom, but become tinged with reddish purple as they mature. The fruits are dry.



OLD MAN PRICKLY-PEAR

Old man prickly-pear (*O. erinacea*) is similar to *O. polyacantha*, but is somewhat taller and grows into a more compact clump. Although it grows throughout much of Utah, it is more common in southern part of the state and blooms in May and June with deep red or yellow flowers.

Dusky-spined prickly-pear (*O. phaeacantha*) has flattened stems and grows in wide clumps that may be as much as 3 feet tall. It is restricted in distribution to the southern region within the state. In spring it produces bright yellow blossoms followed by red-purple edible fruit.



DUSKY-SPINED PRICKLY-PEAR

Spiny-fruited or **Silver cholla** (*O. echinocarpa*) is a low, sprawling, solitary shrub with a centered trunk. Its flowers are greenish-yellow and often more than 2 inches in diameter. Some blossoms have red tinges on the outer edges. The fruit is covered with dense, light colored spreading spines. It grows in southwestern Utah. The interesting stem skeletons of **cholla** are sometimes called ventilated wood. They are hollow, very hard and remarkably strong.

CHOLLA STEM SKELE-TON

Barrel cactus (*Ferocactus cylindraceus*)

CACTUS FAMILY (CACTACEAE)

Barrel cactus, as the common name implies, has a barrel shape that is normally unbranched, with thick ridged and grooved stems. A mature plant may reach 5 to 10 feet tall and 1 foot in diameter. Each areole has four long curved spines arranged in a cross. Large yellow flowers with red bases are produced in a circle at the top of the plant in spring. The fruit, which is fleshy, usually becomes dry soon after maturity and is obscured by long woolly hairs. The barrel cactus occurs in warm deserts of the southwest, but extends only into the extreme southwestern portion of Utah.

BARREL CACTUS

Showy camissonia (*Camissonia brevipes*)

Eastwood's camissonia (*C. eastwoodiae*)

EVENING PRIMROSE FAMILY (ONAGRACEAE)

Showy camissonia and **Eastwood's camissonia** are very similar annual herbs that dot the desert floor with bright yellow flowers in early spring. Each flower has four petals and four sepals; the petals are often tinged with red markings. **Showy camissonia** occurs in creosote bush communities in southwestern Utah, whereas **Eastwood's camissonia** is known from alkaline desert shrub communities in southeastern Utah. Both have leaves that vary in shape from entire to deeply lobed.

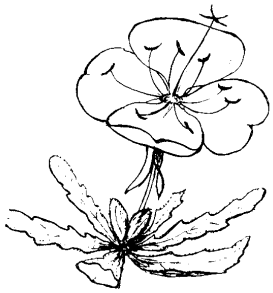
SHOWY CAMISSONIA

EASTWOOD'S CAMISSONIA

Desert evening primrose (*Oenothera primiveris*)

EVENING PRIMROSE FAMILY (ONAGRACEAE)

Desert evening primrose is a low growing winter annual of Utah's warm desert. In early spring it produces large (up to 2½ inches) yellow flowers that turn red orange before they fade on the second day.



DESERT EVENING PRIMROSE

Springparsley (*Cymopterus*)

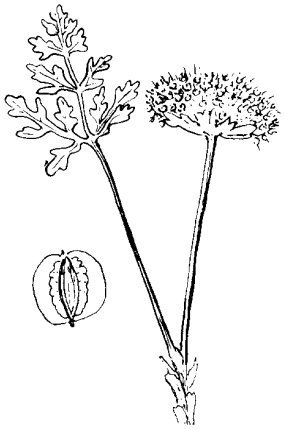
PARSLEY FAMILY (UMBELLIFERAE/APIACEAE)

Members of the **parsley**, or **carrot**, family are quite common in our deserts. They are characterized by the radial arrangement of their flower stalks on the tip of a straight floral stem (rather like the ribs of an umbrella). Some umbels have small leaf-like bracts at their base. Our desert species usually produce their flowers in the spring and develop fruit by early summer. Because many of them look alike in their early blooming stage, botanists often rely on differences in their fruits for identification. Some species are edible, but others are very poisonous and a mistake in identification could be fatal.

Longfooted springparsley (*Cymopterus longipes*) has a tight cluster of tiny yellow blossoms and gray-green leaves. In early spring the leaves are pressed flat on the ground, but as the fruit develops the whole plant is thrust upward by the elongation of its lower stem. It occurs only in the northern portion of the state and is poisonous.

LONGFOOTED SPRINGPARSLEY

Fendler's chimaya or **Fendler's springparsley** (*C. fendlera)* and **Newberry's chimaya** or **sweetroot springparsley** (*C. newberryi*) are both desert perennials that grow on sandy slopes in southern Utah. Their sticky herbage is often covered with sand grains. At the blooming stage they can be difficult to tell apart as they both produce dense clusters of yellow flowers in the early spring. **Fendler's chimaya** has a well-developed pseudoscape and becomes about 12 inches tall; its leaf segments are fairly dissected. **Sweetroot springparsley** does not have a pseudoscape and is shorter; its leaf segments are in threes, and therefore, do not appear as finely dissected.

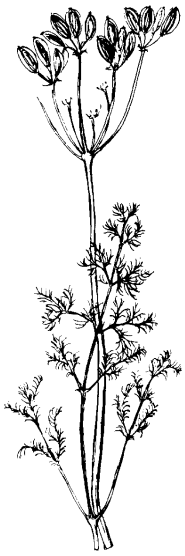


FENDLER'S CHIMAYA

Biscuit root or **Lomatium** (*Lomatium*)

PARSLEY FAMILY (UMBELLIFERAE/APIACEAE)

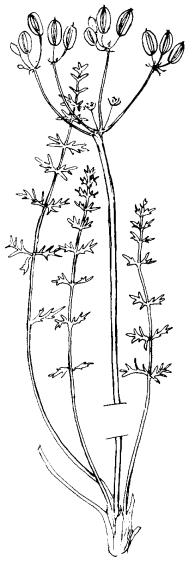
Biscuit roots or **lomatiums** are spring blooming perennial plants with thick roots, some of which are edible; thus the name biscuit root. They appear early in the spring with greener foliage than most other desert plants. By summer they become dormant for another year. Their blossoms closely resemble those of *Cymopterus*.



GRAY'S LOMATIUM

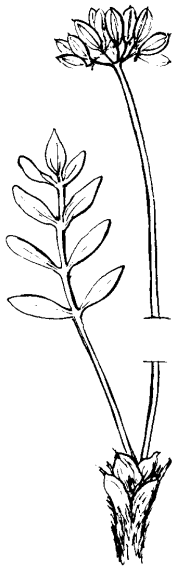
Gray's lomatium (*Lomatium grayi*) has aromatic bright green, fine textured leaves and mustard yellow flowers that come in March and April. The roots are edible. It is widely distributed on foothills throughout Utah.

In Utah the occurrence of **Parry biscuit root** (*L. parryi*) is restricted to our southern deserts. Its flowers have yellow petals that fade to white with age; the foliage is smooth. Fruiting stalks reach about 18 inches



PARRY BISCUIT ROOT

Canyonlands biscuit root (*L. latilobum*) is an eastern Utah species that often forms large clumps. It is about 12 inches tall at maturity. It blooms in April with yellow flowers that fade to white.

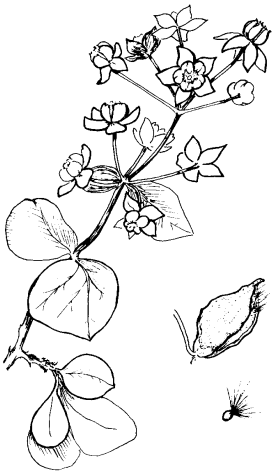


CANYONLANDS BISCUIT ROOT

Pallid milkweed (*Asclepias cryptoceras*)

MILKWEED FAMILY (ASCLEPIADACEAE)

Pallid milkweed is a prostrate plant that grows in the clay hills of the pinyon-juniper belt in eastern Utah. It has a thickened woody root. Its leaves and stems are without hair. In May and June it has numerous blossoms that vary from dull to bright yellow with a purple center. Nearly all **milkweeds** (*Asclepias*) have milky sap. Their blossoms are arranged in an umbel and their leaves tend to be thick. They are more or less poisonous to grazing animals.



PALLID MILKWEED

Dwarf milkweed *(Asclepias macrosperma*)

MILKWEED FAMILY (ASCLEPIADACEAE)

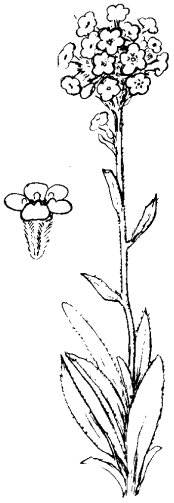
Dwarf milkweed occurs in southeast Utah and prefers sandy soil. A cluster of several stems less than a foot tall are produced from a taproot. The white-veined leaves have ruffled edges and are covered with minute hairs that give them a gray-frosted appearance. The plants bloom in spring; the branch tips hold dense clusters of flowers that are mostly greenish-yellow with a hint of purple.

Cryptantha

BORAGE FAMILY (BORAGINACEAE)

Yellow or **plateau yellow cryptantha** (*Cryptantha flava*) and **golden, basin yellow**, or **dense-flowered cryptantha** (*C. confertiflora*) are perennials whose habit of growth is fairly typical for this group. They are low clump-forming plants that are covered with bristly hairs that make them appear gray-green in color and sometimes cause skin irritation. These two have yellow blossoms whereas most other desert cryptanthas are white-flowered. **Plateau yellow cryptantha** occurs in the eastern Utah Plateau country, whereas **basin yellow cryptantha** has a Great Basin distribution that includes western Utah.

PLATEAU YELLOW CRYPTANTHA



BASIN YELLOW CRYPTANTHA

Desert tobacco (*Nicotiana trigonophylla)*

POTATO or NIGHTSHADE FAMILY (SOLANACEAE)

Desert tobacco is similar to **coyote tobacco** (see description in White Flowers section) but is a more robust species that grows in southern Utah. It is biennial or perennial and has pale yellow flowers. The base of the leaves clasp the stem. It is reported that Indians once cultivated and used this tobacco.

Ivy-leaved groundcherry (*Physalis hederifolia*)

POTATO or NIGHTSHADE FAMILY (SOLANACEAE)

Ivy-leaved groundcherry is one of several groundcherries that are native to open gravelly areas of our warmer deserts. They are a group of rather weedy plants with semi-palatable, tomato-shaped fruits encased in an inflated calyx. They have been economically important to desert dwelling Indians. **Ivy-leaved groundcherry** is a compact perennial 8 inches to 16 inches high that has a deep-seated radish-like root. It is quite common in southern Utah. It blooms from May to July with brown centered yellow flowers. The mature berry is yellow.

IVY-LEAVED GROUNDCHERRY

Buffalo-gourd or **calabazilla** (*Cucurbita foetidissima*)

GOURD FAMILY (CUCURBITACEAE)

Buffalo-gourd or **calabazilla** grows vigorously from a thick carrot-shaped root. It is a trailing perennial with numerous stems 4 to 20 feet long. Its gray-green, rough textured leaves stand about 1 foot off the ground and have a strong, rather unpleasant odor when they are crushed. The flowers are rather infrequent. They are rich yellow and may be as much as 4 inches in diameter. These are followed by round, dark green fruits that develop cream colored blotches and stripes as they mature and become hard. **Buffalo-gourd** enters Utah only in the warm southern region.

BUFFALO-GOURD

Rayless goldenhead (*Acamptopappus sphaerocephalus*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Rayless goldenhead, true to its name, has only disk flowers. They are pale yellow and subtended by bracts that form a tight cup about one-fourth inch in diameter. This is a rounded, twiggy shrub that grows up to about 2 feet high. The old bark is gray and tends to split. The new branches and leaves are gray-green. Flowering occurs from March to September and is followed by seed heads bristling with stiff lustrous pappus. It is parasitized by a little bagworm (*Colcophora acamptopappi*) that hangs in paper-like larva sacks from the branches. In Utah **rayless goldenhead** is found only within the southernmost region with desert shrub communities.

RAYLESS
GOLDENHEAD

Sagebrush or **wormwood** (*Artemisia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Plants commonly known as **sagebrush** or **wormwood** constitute the largest and most widespread group of plants that grow in our deserts. They include annuals, biennials, perennials and woody shrubs. While they vary considerably from each other, they have many distinctive characteristics in common. Most have a silvery-gray color and a pungent aroma. All grow in or near the desert.

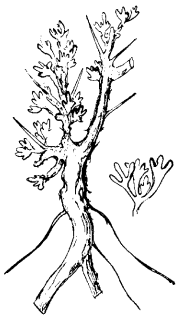
Our most common species is **big sagebrush** (*Artemisia tridentata*). At maturity and in good soil this is a large shrub (to 10 feet) with gnarled and twisted trunk and lower branches. The bark shreds into thin layers. When dry, this wood makes excellent fuel. The leaves are its most distinguishing characteristic. They are three-toothed, silver-gray and aromatic. It bears numerous minute yellow blossoms in late summer. This species does not tolerate salty or alkaline soil.

BIG SAGEBRUSH

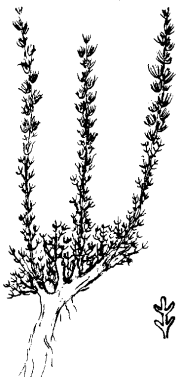
Low sagebrush (*A. arbuscula*) is similar in appearance but is rarely more than 16 inches tall and has a leafy, flat-topped appearance. The inflorescence rises well above the leaves. Sheep are reluctant to eat both **low sagebrush** and **big sagebrush**. This, however, is not true of **dwarf sagebrush** (*A. nova*) which is also low growing and has dark colored branches but is one of our better grazing plants. It grows in shallow, stony soil and is widely distributed. **Sand sagebrush** (*A. filifolia)* is distinctive because of its pungent odor and its thread-like blue-gray leaves. It inhabits sandy areas in southern Utah, and produces tall stems of inconspicuous yellow-gray flowers in September. **Bud sagebrush** (*A. spinescens*) is prevalent in the Great Basin where it frequently grows in saline soil. It is a small spiny bush 2 inches to 8 inches high that grows in rocky desert areas in all parts of our state. It loses its leaves in dry seasons, but even so, seems to be palatable to sheep. **Pigmy sagebrush** (*A. pygmaea*) is also a small species. It forms low cushions about a foot in diameter and has a distinctive green color.

DWARF SAGEBRUSH

SAND SAGEBRUSH



BUD SAGEBRUSH



PIGMY SAGEBRUSH

Devilweed aster (*Aster spinosus*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

In Utah **devilweed aster** inhabits moist saline soils, such as washes, of the southernmost portion of the state. Spreading by underground stems, it grows in broom-like clumps with thorny aerial stems that reach up to 7 feet in height. It blooms from May to October with small flower heads, usually at the ends of the branches. The disk flowers are yellow and the rays inconspicuous and white.

DEVILWEED ASTER

Ragleaf bahia or **yellow ragweed** (*Bahia dissecta*)

SUNFLOWER FAMILY (COMPOSITAE/ASTEREAE)

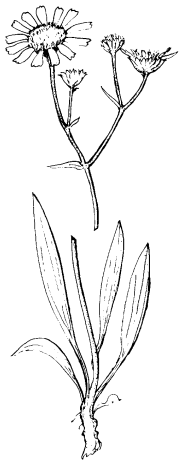
Ragleaf bahia or **yellow ragweed** is a widely scattered desert perennial that grows on roadsides and gravelly hillsides in southern and eastern Utah. It is a biennial or short-lived perennial 1 to 3 feet tall. The stems are somewhat striated and are covered with glandular hairs that make them feel rough. Its blooming season is from August through September.

RAGLEAF BAHIA

Basin or **nakedstem bahia** (*Platyschkuhria integrifolia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Basin or **nakedstem bahia** grows in eastern Utah. It is a perennial with a woody base and mostly basal leaves with entire margins rather than dissected as in **ragleaf bahia**. The yellow-rayed flower heads bloom from May to July.

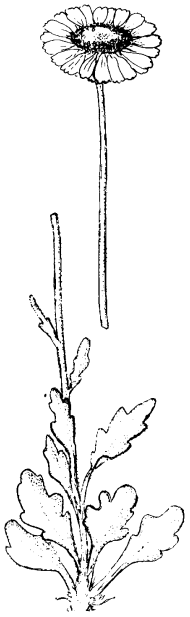


BASIN BAHIA

Paperdaisy or **desert marigold** (*Baileya multiradiata*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Paperdaisy or **desert marigold** is a handsome woody based biennial or perennial plant that in the spring and again after summer rains, spreads golden yellow carpets of flowers over southwestern Utah's sandy washes and along roadsides.



DESERT MARIGOLD

Woolly marigold (*Baileya pleniradiata*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Paperdaisy and **woolly marigold** are two species that look very much alike. **Woolly marigold**, however, is a smaller plant with stems that are conspicuously more branched and leafy than **paperdaisy**. Commonly occurring on open sandy areas of southwest Utah, it is usually an annual, but may persist for more than one year. Its two blooming seasons correspond to a bimodal pattern of precipitation: the first bloom follows winter-spring rains and the second follows those of summer.

WOOLLY MARIGOLD

Arrowleaf balsamroot or **Mormon biscuit** (*Balsamorhiza sagittata*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Arrowleaf balsamroot or **Mormon biscuit** is common on the lower foothills of our mountains and in adjacent desert areas. This spring blooming plant has thick, densely hairy leaves and stems that have a felt-like texture and gray-green color. It grows in a round clump about 2 feet high. The thick starchy taproot is covered with a resinous bark that is strongly aromatic. Early settlers, as well as Indians, used the root centers as a staple food.

ARROWLEAF BALSAMROOT

Mohave brickellbush (*Brickellia oblongifolia*)

SUNFLOWER FAMILY (COMPOSITAE OR ASTEREAE)

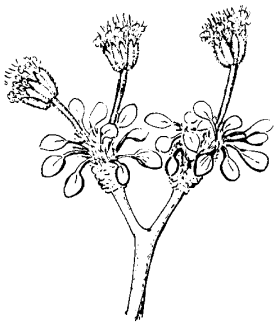
Mohave brickellbush is sometimes classed as a subshrub and grows only 4 inches to 18 inches high. It has numerous branches from the base, that form rounded clumps. It blooms in the spring and sometimes again in late summer. The flowers are about three-fourths inch long and come at the ends of the branches. They are either purplish or yellow.

MOHAVE BRICKELLBUSH

Golden aster (*Heterotheca villosa*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Golden aster is sparsely distributed over a wide area in Utah's deserts where it inhabits dry gravelly slopes. It is a perennial with several stems originating from a woody taproot. The whole plant is covered with gray, glandular hairs. The yellow flower heads are about 1 inch wide and come at the ends of the branches. They bloom throughout the summer.



GOLDEN ASTER

Rabbitbrush or **chamisa** (*Chrysothamnus*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

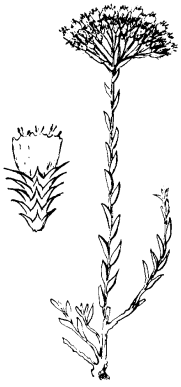
Several species of **rabbitbrush** or **chamisa** occur throughout Utah's deserts. They are quite drought resistant. In suitable locations, these compact shrubs become the dominant vegetation over large areas. They are dense, intricately branched, aromatic shrubs that grow up to 6 feet high and, in late summer and fall, become solidly golden-topped with multitudes of slender flowers bunched tightly together. **Rabbitbrushes** earned their common name by serving as shelter for desert dwelling rabbits. As a group, they added much to the economy of early Indians, who used the blossoms in making yellow dye and the branches for basket weaving, light construction, and for making green dye. These plants have a rather limited forage value.

BIG RABBITBRUSH

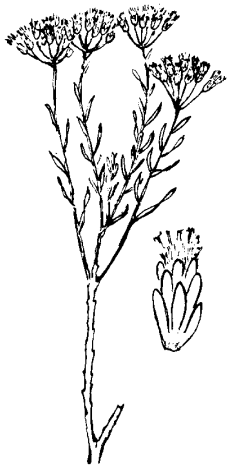
Big rabbitbrush (*Chrysothamnus nauseosus*) is the largest and most widespread of our species. It becomes 6 feet tall and almost that wide. Rubber can be made from its sap. The branches are light gray-green, brittle and covered with dense, felt-like hairs. It tastes bitter and has a strong aromatic odor that is unpleasant to some people. It blooms in late summer.

Sticky-leaved rabbitbrush (*C. viscidiflorus*) is common throughout Utah. It generally grows to about 3 feet tall and has sticky green leaves that tend to twist. Blooming during summer, it is covered with clusters of small yellow flowers at the branch tips.

Dwarf rabbitbrush (*C. depressus*) is a low dense bush, 4 inches to 1 foot tall. It grows on dry rocky slopes of juniper-woodland desert in central Utah and blooms from August to October.



DWARF RABBITBRUSH



STICKY-LEAVED RABBITBRUSH

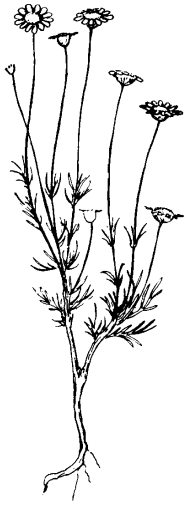
Dogweed (*Dyssodia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Prickleaf dogweed (*Dyssodia acerosa*) derives its common name from the needle-like leaves that grow thickly up its branches. It is rather unpalatable to grazing animals and may, therefore, become abundant on overgrazed land. In Utah, it is usually found only in dry rocky places in the St. George area and eastward along our southern border. It grows about 5 inches tall and forms rounded bushy plants. Yellow blossoms bloom from March to October and are encased by bracts with conspicuous oil glands.

PRICKLEAF DOGWEED

Pentach dogweed (*Dyssodia pentachaeta*) is a compact little desert perennial 4 to 8 inches high. It has numerous slender branches arising from a woody base. It grows in dry rocky soil on slopes and along washes in southern Utah. The leaves and stems are strongly scented and green. Its numerous translucent oil glands that mark the bracts around the flower head distinguish all *dyssodias*. On this species they also occur on the leaves. The flowers are yellow and bloom from May to September.



PENTACH DOGWEED

Brittlebush (*Encelia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Brittlebushes are rounded branching shrubs that make up an important part of the flora of rocky hillsides in our southern deserts. Their root systems are rather small, and as a result, they adjust to dry seasons by becoming dormant. In years with adequate rainfall, their display of yellow flowers in spring to early summer is truly spectacular.

Bush encelia *(Encelia frutescens*) is more common in southeastern Utah in what is known as the Colorado Plateau region. It has white bark and gray-green leaves. The flower heads are solitary on the stems.

White brittlebush or **incienso** (*E. farinosa*) has gray-white leaves and brown stems. The blossoms are borne on branching stems that seem to encircle the entire plant. A resin, exuded from the stems, was burned as incense by early California padres. The Indians used it as medication, varnish and chewing gum. In Utah this species is confined to Washington County where it occurs with other warm desert vegetation that barely extend their distributions into the State.

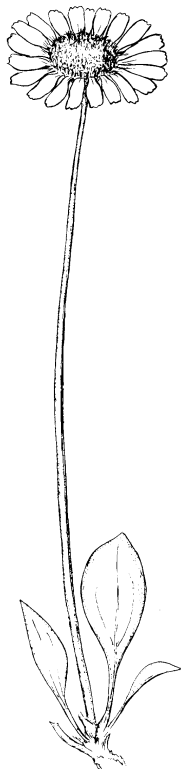
WHITE BRITTLEBUSH

BUSH ENCELIA

Sunray (*Enceliopsis*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Sunrays are herbaceous perennials that grow in washes and open slopes and bloom from April to June. They are especially showy because their large golden-yellow flower heads are borne at the ends of long leafless stems. All their leaves are basal. In Utah, **Naked-stemmed sunray** (*Enceliopsis nudicaulis*) is our most common species, with wide distribution over the southern half of the state. It blooms in late spring with flower heads almost 3½ inches across. The leaves are soft and silky and a light gray color. **Silver-leaf sunray** (*E. argophyllus*) is very similar but has large flowers and smooth silver colored leaves that are up to 4 inches long. It grows only in the warm southwestern desert. **Nodding encelia** (*E. nutans*) is restricted in distribution to that portion of eastern Utah known as the Colorado Basin. It has a green leaves with a sand-papery texture. The flower heads have no ray flowers and are borne singly on 6 to 10 inch stems.

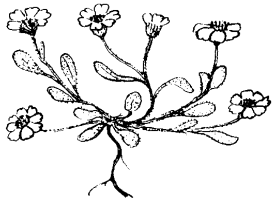


NAKED-STEMMED SUNRAY

Woolly daisy (*Eriophyllum wallacei*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Woolly daisy is a handsome little annual with stems and leaves that are densely covered with white woolly hairs. It grows 1 inch to 5 inches tall and is branched or unbranched depending upon the amount of spring rainfall. The flowers are five-eights inch wide. From March to June, on favorable years, they color miles of the desert a bright yellow gold. This plant is most at home in the creosote desert south of our border and finds its way into the southwest corner of Utah.



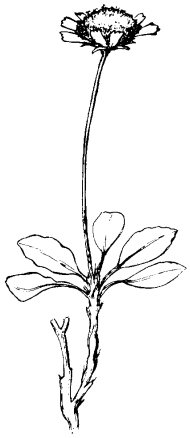
WOOLLY DAISY

Gaillardia or **blanketflower** (*Gaillardia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Several species of **Gaillardia** or **blanketflower** occur in Utah. Two common desert species are included here. These grow in southern Utah among shrubs in open dry gravelly or clay hills. They are both rough textured perennials that, at maturity, become about 2 feet high, with flower heads 1 to 2 inches wide. The rays are bright yellow, often shaded with red. The disk flowers are a dark reddish purple. They differ in their blooming season and in the shape of their leaves.

Cut-leaf blanketflower (*Gaillardia pinnatifida*) blooms from April to October and **Parry's blanketflower** (*G. parryi*) blooms during May and June. Cultivated **gaillardias** were selected from various native western American species.



PARRY BLANKETFLOWER

CUT-LEAF BLANKETFLOWER

Desert gold, **desert sunflower** or **hairy-headed sunflower** (*Geraea canescens*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

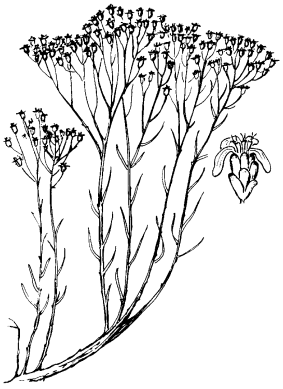
Desert gold, **desert sunflower** or **hairy-headed sunflower** is an annual, 1 to 2 feet tall, that grows in great abundance in warm sandy areas of southern Utah. It blooms from January to June with numerous sweet-scented, golden yellow blossoms in 2 inch flower heads. The leaves and stems are covered with stiff glandular hairs that make them sticky. The bracts surrounding the flower heads are conspicuously edged with long white hair, setting them apart from other sunflowers.

DESERT GOLD

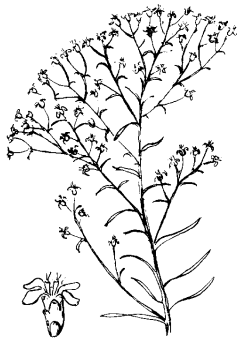
Snakeweed or **matchbrush** (*Gutierrezia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Broom snakeweed or **matchbrush** (*Gutierrezia sarothrae*) is common on most of Utah's foothills and open deserts. It is a round, bushy little shrub that grows to about 20 inches tall. It blooms all summer and through autumn with flat-topped clusters of yellow flowers. It is thought to be poisonous to domestic animals, but its resinous leaves are unpalatable to them. It is safely browsed by some wild animals.



BROOM SNAKEWEED



THREADLEAF SNAKEWEED

Threadleaf snakeweed or **matchbrush** (*Gutierrezia microcephala*) is very similar to broom snakeweed, but is finer textured and has a somewhat less erect habit of growth. The blossoms are smaller and it blooms only in late summer and early autumn. It grows in the southern half of the state throughout desert shrub and pinyon-juniper communities.

Sunflower *(Helianthus*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Our best known **sunflower** is *Helianthus annuus*, **common sunflower**, the Kansas State flower. It can grow to 8 feet tall and inhabits roadsides throughout the west. Two of its desert dwelling relatives closely resemble it in habit and structure, but are smaller. **Prairie sunflower** (*H. petiolaris*) is a slender narrow leaved annual plant that is at home on open sandy deserts in southern and eastern Utah. It becomes as much as 3 feet high and has 2½ to 3½ inch flower heads at the ends of slender stems. It blooms from March to October. Another sunflower of sandy places in southern Utah is *H. anomalus*. It is about the same height as **prairie sunflower**, but is a sturdier, coarser plant with wider leaves. The blossoms are about the same size. It blooms all summer.

COMMON SUNFLOWER

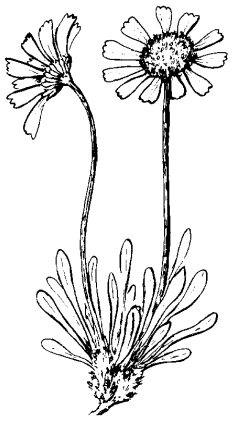
Bitterweed (*Hymenoxys)*

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

The two species of **bitterweed** included here are widely distributed in both elevation and habitat. In the desert they inhabit dry rocky, sandy slopes in the pinyon-juniper woodland. Both have bright yellow flowers about 1½ inches across. They are poisonous to cattle.

Stemless bitterweed (*Hymenoxys acaulis)* is a perennial with a branching crown that is densely covered with long silky hairs and old leaf bases. Its bright gray-green leaves are all basal and the blossoms come singly at the top of foot-high leafless scapes.

Pingue bitterweed (*H. cooperi*) is a biennial with a basal rosette of leaves and a single leafy stem that is unbranched except at the top. It grows 12 to 30 inches high and blooms from May to September.



STEMLESS BITTERWEED

PINGUE BITTERWEED

Stansbury rockdaisy (*Perityle stansburii*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

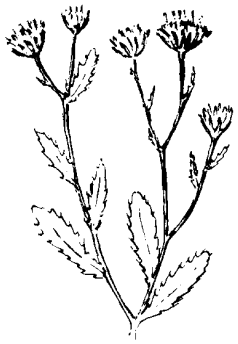
Stansbury rockdaisy is a shrub-like, woody-based perennial that inhabits rocky hillsides in western Utah. It produces numerous slender, leafy green stems 6 to 8 inches high, with a pale yellow blossom head, less than an inch wide at the top of each. It blooms from June to August.

STANSBURY ROCKDAISY

Gumweed tansy aster (*Machaeranthera grindelioides*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

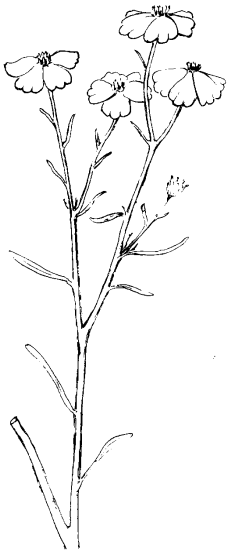
Gumweed tansy aster is distributed through central and eastern Utah in pinyon-juniper areas. It is a small shrub or subshrub that grows up to 8 inches tall. The stems and leaves sometimes have a reddish-purple cast. It blooms from June through August with yellow disk flowers at the ends of the stems. The leaves have short stiff hairs along their margins.



GUMWEED TANSY ASTER

Paperflower (*Psilostrophe)*

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)



WHITESTEM PAPERFLOWER

Whitestem paperflower (*Psilostrophe cooperi)* is a small, soft, shrubby plant that grows in gravelly or sandy washes in the warm desert region of southwestern Utah. Its stems and new leaves are densely covered with white, woolly pubescence. The mature plant is densely branched and forms a hemispheric clump more than 2 feet in diameter. Much of the year it is completely inscribed with bright, yellow blossoms that remain on the plant until they are faded and papery. The individual flower heads are usually about 1 inch in diameter.

In appearance, **greenstem paperflower** (*Psilostrope sparsiflora*) differs from **whitestem paperflower** chiefly in the greener color of its leaves and branches and its habit of producing its yellow flowers in loose clusters rather than singly at the ends of its stems. Its branches are somewhat hairy and are marked with narrow striations. Each stem has a tuft of long, silky, white hair at the base. This species can be locally abundant and, within Utah, is limited in distribution to the eastern side of the High Plateau backbone, in Kane, Garfield, and Wayne counties. Its blooming season extends from May to October.

GREENSTEM PAPERFLOWER

Groundsel or **butterweed** (*Senecio*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

There are probably more than a thousand species of **groundsel** or **butterweeds**. Many of them are native to western United States and several species occur in desert country. They are a very difficult group to separate from each other, but are rather distinctive from other groups. Their bracts are uniform in length and width and frequently (but not always) are marked with a black tip. The species included here all inhabit dry stony areas in open pinyon-juniper woodland, but they may also be found in moist situations and at high elevations in the mountains. They all have numerous yellow blossom heads at the ends of their stems and branchlets.

Lobeleaf groundsel or **butterweed** (*Senecio multilobatus)* is a plant 6 inches to 20 inches tall with green foliage that becomes smooth as it matures. It blooms from April to August. It is widely distributed throughout the state.

LOBELEAF GROUNDSEL

THREADLEAF GROUNDSEL

Threadleaf groundsel or **felty groundsel** *(S. douglasii* or in some manuals *S. longilobus*) grows in a woody clump and may be as much as 3 feet tall. Its stems and leaves are densely covered with white woolly hairs. It is very toxic to cattle and horses. It grows in southern and eastern Utah and blooms most of the year.

Broom groundsel (*S. spartioides*) is a perennial of south-central Utah with a woody branching crown. It is 4 inches to 2 feet tall and is leafy all the way up to the inflorescence. The leaves are a dark green color. It blooms from July to October with closely set clusters of flowering heads each about five-eighths inch across.

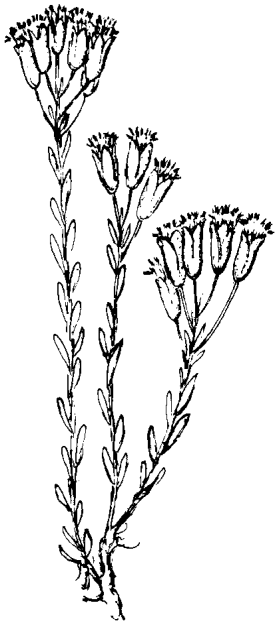
BROOM GROUNDSEL

Horsebrush (*Tetradymia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

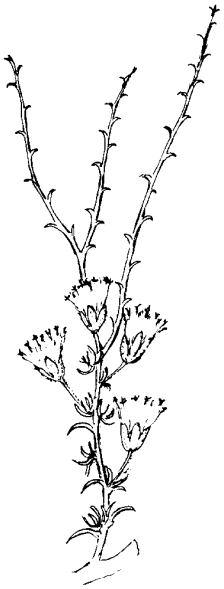
Horsebrushes are common in our cold desert areas. All our species are stiff, much branched shrubs that grow on open rocky hillsides and in alkaline or saline soils. Their mature leaves and especially their branches are densely covered with felt-like hairs that give them a white appearance. The flowers, which come at the ends of the branches, are yellow and remarkably showy, especially when a great deal of bloom is produced at once. They are quite toxic to domestic animals. In dry seasons the new growth dies back leaving stiff dry branch ends guarding the plant.

Spineless horsebrush (*Tetradymia canescens*) is a 1 to 3 foot diameter shrub that blooms from June to October with flower heads that usually contain four flowers. **Littleleaf horsebrush** *(T. glabrata*) has striated twigs and smaller leaves than **spineless horsebrush**. It is more common in central Utah's Great Basin desert than **spineless horsebrush**. **Cottonthorn horsebrush** (*T. spinosa*) is distinguished by primary leaves that become spiny and can be recurved or straight. It blooms in May and June and has five to nine flowers per head.



SPINELESS HORSEBRUSH

LITTLELEAF HORSEBRUSH

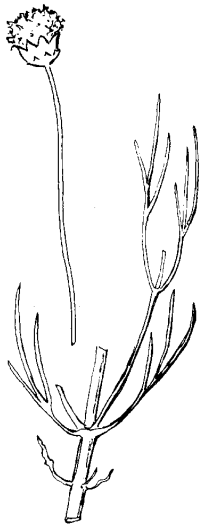


COTTONTHORN HORSEBRUSH

Greenthread (*Thelesperma megapotamicum*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Greenthread is a perennial that grows 1 to 2 feet high. It inhabits washes in the oak-juniper woodland of southern Utah. The leaves are gray-green. From May to October it produces yellow blossoms singly at the ends of tall stems. Hopi Indians make a tea and a reddish-brown dye from its leaves.

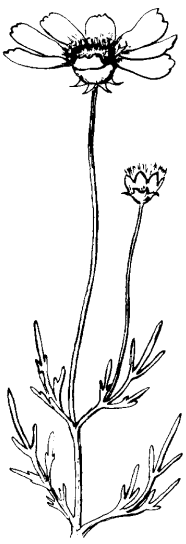


GREENTHREAD

Navajo tea (*Thelesperma subnudum*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Navajo tea grows from a branching tap root that extends above the ground. This plant may be as much as 1 foot tall, but usually is not more than 6 inches. It has green waxy leaves near the base of the plant and bright yellow flowers at the ends of slender stems. Most of the flower heads are encircled by eight showy rays, but some produce only disk flowers. They occupy dry sandy soil in the pinyon-juniper areas of eastern and southern Utah and bloom from May to August.



NAVAJO TEA

Crownbeard (*Vanclevea stylosa*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Crownbeard is common in southeastern Utah. It is a slender, open branched shrub with white stems and dark green, sticky, shiny leaves. It blooms in response to precipitation; the yellow flowers clustered at the ends of the stems can be seen in May after winter-spring rain and again September after summer rains.

CROWNBEARD

Perennial goldeneye (*Viguiera multiflora/Heliomeris m.)*

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Perennial goldeneye is a slender, much branched perennial plant that grows up to 3 feet tall. From May to October it produces golden yellow blooms at the ends of wiry stems. It is distributed over much of the foothill and open woodland along the Wasatch-High Plateau backbone and Colorado Plateau in our state.

PERENNIAL GOLDENEYE

Annual goldeneye (*Viguiera annua/Heliomeris longifolia*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Annual goldeneye is a slender wiry branched annual that directly reflects the season in its growth and bloom. In favorable years it grows in extensive stands that are completely covered with attractive brilliant yellow flowers from May to October. Its leaves are not more than one-eighth inch wide, otherwise it closely resembles *V. multiflora*. It grows in southern Utah and southward into Arizona.

Mule ears or **Wyethia** (*Wyethia scabra*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Mule ears or **Wyethia** is a handsome, vigorous, clump-forming perennial, with a woody base. From May to July it produces numerous sunflower-like blossoms up to 5 inches wide. It is readily distinguished from similar species by the sandpaper texture of its leaves. It is common in sandy soil in eastern Utah.

MULE EARS

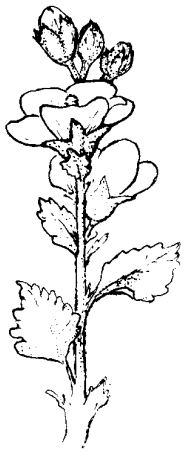
ORANGE-RED FLOWERS

Globemallow or **holly hock** *(Sphaeralcea)*

MALLOW FAMILY (MALVACEAE)

Globemallows or **holly hocks** are generously represented in our state. All have brightly colored blossoms that appear in large numbers from April to October, thus making them some of the showiest of Utah's desert flowers. We have several species growing throughout the state that are difficult to distinguish from each other. All (ours) have erect stems 4 inches to 2 feet tall, with flowers coming from the axils of the leaves. Although sometimes white to pink, the flowers most commonly have a striking orange-red color. The leaves vary in shape, but all are covered with minute stellate (star-shaped) hairs. Indians used several of them in concocting medicine for sore eyes and for digestive disorders.

Desert or **Mojave globemallow** (*S. ambigua*), as its common name would suggest, is most common in the Mojave Desert to the south and west of our area. In Utah it grows only in the low elevation, warm desert located in the extreme southwest corner. It blooms from March to June, with the flower color varying from orange or orange-pink and fading to pink. It has a large woody base that produces numerous flowering stems with thick somewhat triangular-shaped leaves.

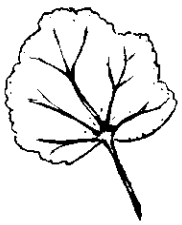


TUFTED GLOBEMALLOW

Tufted globemallow (*S. caespitosa*) is a low growing, leafy plant with the largest flowers of all the species listed here. In Utah it is found exclusively in Millard and Beaver counties. Its leaves are gray and felt-like.

Scarlet globemallow (*S. coccinea*), **gooseberryleaf globemallow** (*S. grossulariaefolia*), and **Munro globemallow** (*S. munroana*) rather closely resemble each other and are widely distributed on our foothills and deserts.

Small flowered globemallow (*S. parvifolia)* grows in sandy soil and is common on high, arid, table land in southern Utah. Its flowers are somewhat smaller than most of our globemallows, but they are produced in great profusion. The shape of its leaves vary from round to triangular.



SMALL FLOWERED GLOBEMALLOW

SCARLET GLOBEMALLOW

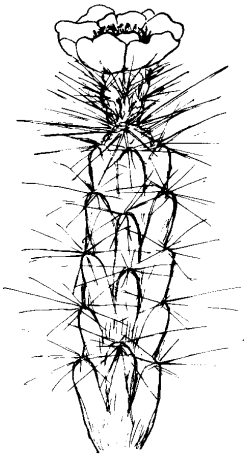
GOOSEBERRY-LEAF GLOBEMALLOW

MUNRO GLOBEMALLOW

Buckthorn cholla (*Opuntia acanthocarpa*)

CACTUS FAMILY (CACTACEAE)

Buckthorn cholla is similar to **spiny-fruited cholla** (see in Yellow Flowers section) but has a more open habit of growth that makes it resemble "deer horns." The blossoms are red, purplish or yellow.

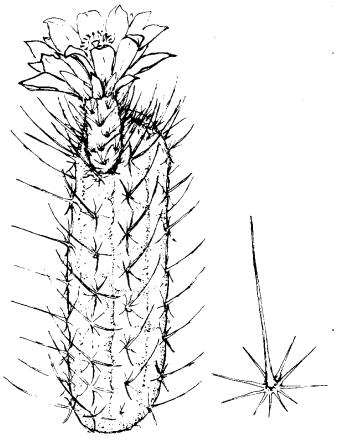


BUCKTHORN CHOLLA

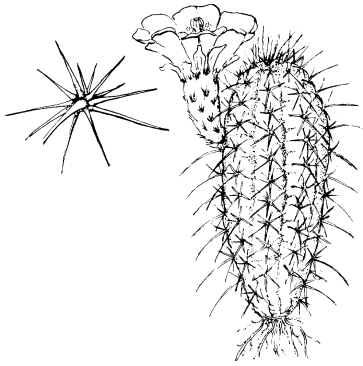
Hedgehog cacti (*Echinocereus*)

CACTUS FAMILY (CACTACEAE)

The stems of **hedgehog cacti** are barrel-shaped, ridged and grooved, and rarely more than 18 inches tall, with spines that are not hooked. The flowers are produced from the side of the stem, below the stem apex. **Engelmann hedgehog cactus** (*Echinocereus engelmannii*) grows in southern and western Utah. It blooms from April to July with brilliant red or red-violet flowers that close at night. The fruit is edible. **Engelmann hedgehog cactus** usually occurs with single to a few stems in a cluster; whereas, another **hedgehog cactus** (*E. triglochidatus*) usually forms colonies of large cushion-like clumps. The flowers are red-scarlet and remain open at night. The numerous blossoms opening simultaneously make for a memorable show in May, June, and July.



ENGELMANN HEDGEHOG CACTUS

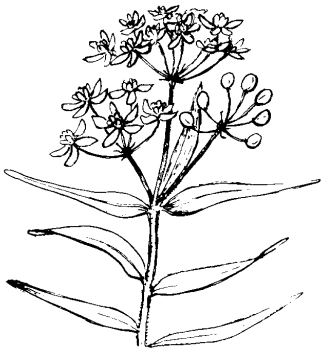


HEDGEHOG CACTUS

Butterflyweed (*Asclepias tuberosa*)

MILKWEED FAMILY (ASCLEPIADACEAE)

Butterflyweed is widely distributed in the United States. Ours grows in sandy soil in southern Utah. It has erect, leafy stems up to 30 inches tall. It is distinguished from other milkweeds by not having milky juice. The leaves are hairy and more or less rolled under at the edges. In summer it has blossoms that are either orange and scarlet or pale orange and yellow. This is a handsome plant that has been successfully introduced into flower gardens.



BUTTERFLYWEED

Paintbrush (*Castilleja*)

SNAPDRAGON or FIGWORT FAMILY
(SCROPHULARIACEAE)

Early Indian or **desert paintbrush** (*Castilleja chromosa*) is common on most of Utah's open foothills, pinyon-juniper woodland and sagebrush deserts. It is an erect, perennial with numerous stems (up to 16 inches high) that grow from a woody crown. Each is topped with thick set blossoms. The flowers themselves are rather pale yellow-green, but the long-lasting bracts are usually a brilliant red-orange. These plants are partly parasitic on sage-brush.

EARLY INDIAN PAINTBRUSH

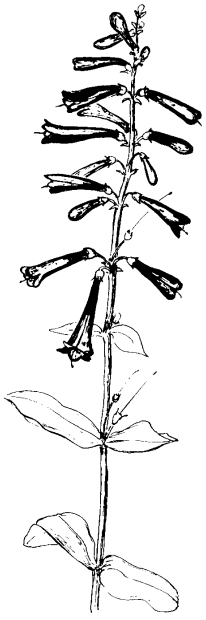
Another desert species, **Eastwood Indian paintbrush** (*C. scabrida*) grows in central and southern Utah. It closely resembles **early Indian paintbrush**, but has more finely divided leaves, shorter stems and is generally more compact.

Northwest Indian paintbrush (*C. angustifolia*) is a woody based perennial that grows in the open pinyon-juniper woodland and sagebrush areas of northwest Utah's deserts. It closely resembles *C. chromosa*, but its inflorescence is usually a paler color and may sometimes be pink or purplish. The ends of the colored bracts are blunt. It blooms from May to July.

Penstemon or **Beartongue** (*Penstemon*)

SNAPDRAGON or FIGWORT FAMILY
(SCROPHULARIACEAE)

Two brilliant red penstemons of central and southern Utah are sensational when they bloom. **Eaton's**, **scarlet**, or **firecracker penstemon** (*Penstemon eatonii*) is especially impressive and even available horticulturally as an ornamental. It grows to 3 feet tall with numerous erect stems from a compact clump. The foliage is green and the flowers scarlet, blooming in May through June. Hummingbirds are attracted to the red flowers; their long beaks are well suited to reach the nectar located in the tube of the flower. **Utah** or **carmine penstemon** (*P. utahensis*) usually reaches only one third the height of **Eaton's penstemon** and its blossoms open more widely, with a color that ranges from pink through deep carmine. Its leaves are gray-green and have a rather waxy texture.



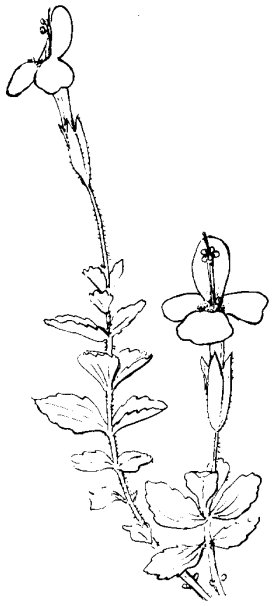
SCARLET
PENSTEMON

UTAH
PENSTEMON

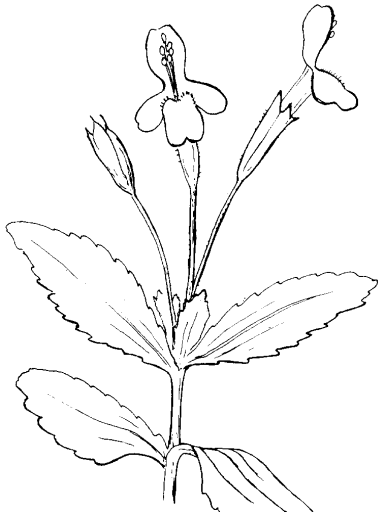
Monkeyflower (*Mimulus*)

SNAPDRAGON or FIGWORT FAMILY (SCROPHULARIACEAE)

Southern Utah has two spectacular herbaceous perennial **monkeyflowers** that grow in damp desert crevices and shady cliffs where water seeps out through recesses in the rock. **Scarlet** or **Eastwood's monkeyflower** (*Mimulus eastwoodiae*) produces new plants from creeping stems and does not exceed more than a few inches in height. It is found in the hanging gardens of the canyonlands of southeastern Utah and adjacent regions of Arizona and Colorado. **Crimson monkeyflower** (*M. cardinalis*) occurs on wet cliffbases and hanging gardens in southwestern Utah and elsewhere. It is similar to **Eastwood's monkeyflower** in flower color, but has taller stems that are generally more erect.

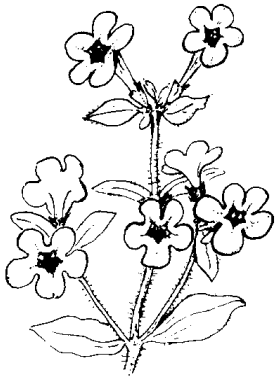


SCARLET MONKEYFLOWER



CRIMSON MONKEYFLOWER

Southwestern Utah also has two showy annual **monkeyflowers** that are seen in spring in the more typical desert habitats of dry washes or hillsides. **Bigelow's monkeyflower** (*M. bigelovii*) is a common species of the western Sonoran Desert that just extends into the warm desert region of our state. It's a small plant with sticky and malodorous herbage. The very delicate stems support large magenta-pink flowers that have a bright yellow spot in the throat. **Parry's monkeyflower** (*M. parryi*), can appear quite similar. Also a small plant, it can have magenta flowers with yellow throats; it has a more common phase that is yellow-flowered with magenta spots.



BIGELOW'S MONKEYFLOWER

PINK-LAVENDER FLOWERS

Textile onion (*Allium textile*)

LILY FAMILY (LILIACEAE)

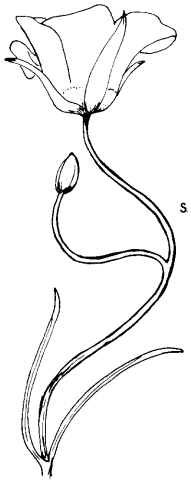
Textile onion is one of several wild onions of similar appearance that occur in our deserts. Their blossoms are white through pink in color. They all have rounded bulbs that are distinguished by their garlic or onion odor. The bulb of **textile onion** is loosely encased with brown fibers that resemble a fabric or textile. When water is plentiful, these fibers absorb and reserve moisture for dry periods. Its pale, creamy blossoms are born in umbels on straight scapes that are shorter than their grass-like leaves. It can be seen blooming on open sandy hillsides in eastern Utah from mid-April to mid-July.

TEXTILE ONION

Weakstem mariposa (*Calochortus flexuosus*)

LILY FAMILY (LILIACEAE)

Weakstem mariposa grows in southern Utah. Its pink goblet-shaped flowers fade to lavender-blue with age. At the base of each petal is a showy yellow and purple blotch. The stem of this species is much branched and often twisted or reclining. Mariposas perennate as bulbs.



WEAKSTEM MARIPOSA

HELLEBORE ORCHID

Hellebore orchid *(Epipactis gigantea)*

ORCHID FAMILY (ORCHIDACEAE)

Hellebore orchid blooms from April to July with intricate blooms up to 1 inch wide along a stalk that may be from 6 inches to 1 foot in length. (These grow to nearly 4 feet in mountain habitats.) The flowers are a mixture of pink, yellow, violet and green. They can be pollinated only by insects that have very long tongues, but can also reproduce vegetatively from underground stems.

Bastard toadflax *(Comandra umbellata)*

SANDALWOOD FAMILY (SANTALACEAE)

Bastard toadflax is a common perennial that is partly parasitic on other plants. It grows in a wide variety of dry habitats. Its leaves and stems have a smooth waxy texture and a gray, pinkish-green color. The blossoms are a dusty pink or lavender and appear in spring at the ends of stems. They may reach as much as 18 inches tall.

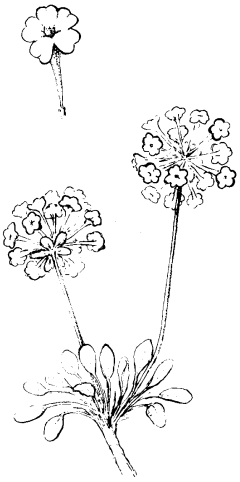
BASTARD TOADFLAX

Sand verbena *(Abronia)*

FOUR-O'CLOCK FAMILY (NYCTAGINACEAE)

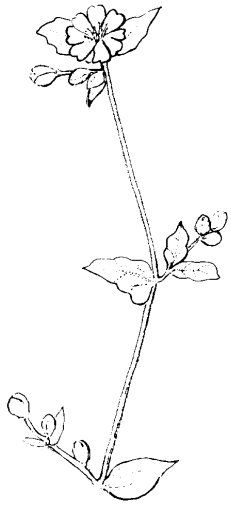
Snowball or **sand verbena** *(Abronia fragrans)* is an attractive, low trailing perennial herb of sandy places found throughout Utah deserts. The rather thick leaves with glandular hairs often catch windblown sand. The fragrant white to pinkish flowers occur in dense clusters.

Little or **low sand verbena** *(A. nana)* is an herbaceous perennial that is the smallest of our sand verbenas, rarely exceeding 5 inches in height. The leaves are covered with glandular hairs to which windblown sand often sticks. The showy rose to purple flowers are clustered 7 to 25 per head.



LITTLE SAND VERBENA

SNOWBALL SAND VERBENA



TRAILING ALLIONIA

Trailing allionia or **windmills** *(Allionia incarnata)*

FOUR-O'CLOCK FAMILY (NYCTAGINACEAE)

Trailing allionia or **windmills** is a slender, trailing plant with stems 2 feet long that is covered with numerous sticky glands. Its flowers are arranged in groups of three and surrounded with leafy bracts that make them appear to be only one flower. Each blossom is one-half to three-quarters inch in diameter and rose-pink to white. They grow, sparsely scattered, over dry sandy hills in southern Utah.

BITTERROOT

Bitterroot *(Lewisia rediviva)*

PURSLANE FAMILY (PORTULACACEAE)

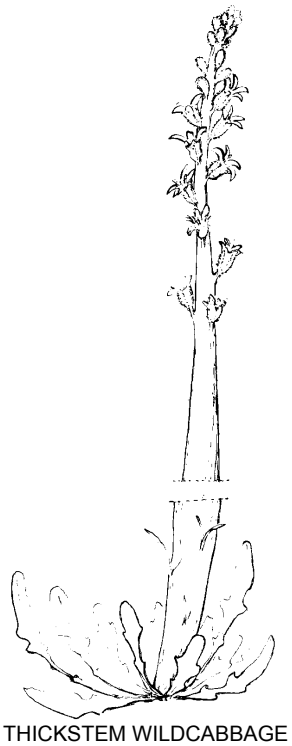
Bitterroot grows on bare rocky slopes and ridges. Its small leaves often disappear before it blooms. The flowers are pink (ours) and appear a few at a time at the end of short scapes. The fleshy taproots have been highly prized as food by Western Indians who prepared them by removing the thick skin before boiling them. They were then stored by drying. The name rediviva means "that lives again," and refers to this plant's amazing ability to survive drought.

ROCK CRESS

Rock cress *(Arabis pulchra)*

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Rock cress grows in open sandy areas with sage brush, juniper and pinyon pine. In April and May, it blooms with quite showy pink flowers on spikes that are 10 to 18 inches high. At maturity the flat seed pods are more than 2 inches long and hang downward. Its leaves are arranged in a basal rosette as well as sparingly up the stem. Gray, branching hairs cover the fruits, leaves and stems. When viewed under a lens they resemble frost patterns.



THICKSTEM WILDCABBAGE

Thickstem wildcabbage *(Caulanthus crassicaulis)*

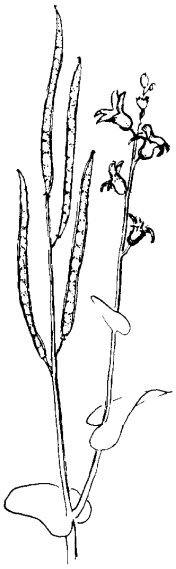
MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Its sturdy, almost naked, gray-green, and succulent stems make **thickstem wildcabbage** conspicuous on the open sandy hillsides where it grows. It becomes 1 to 3 feet high and produces pink flowers. These are followed by narrow, 4-inch long pods. A similar looking close relative, **desert candle** (*C. inflatus*), was eaten by Great Basin Shoshonean peoples; the upper section of the stem was cut off and roasted.

Heartleaf twistflower (*Streptanthus cordatus*)

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Heartleaf twistflower is a stout-stemmed 1 to 3 foot perennial with smooth gray-green foliage. Its clasping stem leaves are heart-shaped and its petals are deep maroon and twisted. The base of each flower is bright yellow. It blooms in early spring. The capsules stand erect on the stem.

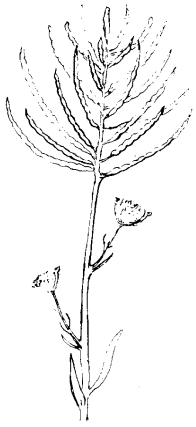


HEARTLEAF TWISTFLOWER

Thelypody *(Thelypodium integrifolium)*

MUSTARD FAMILY (CRUCIFERAE/BRASSICACEAE)

Thelypody is a biennial of sagebrush flats and sandy deserts throughout the state. It has a simple or branched stem 2 to 7 feet tall. In July and August it produces dense racemes of small purple-white flowers. Capsules are spreading and curved upward.

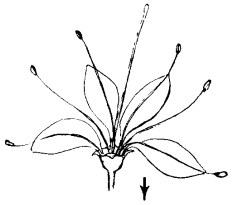


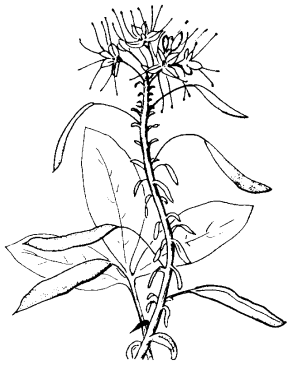
BIENNIAL THELYPODY

Pink bee flower *(Cleome serrulata)*

CAPER FAMILY (CAPPARACEAE)

Pink bee flower is about twice as large as yellow bee flower. It is distinguished by large pink to purple flowers and three-parted leaves that have an unpleasant odor. The flowers are so showy that bee flowers are now sold commercially as ornamentals. Scattered widely throughout Utah, this species often occurs in sites of recent disturbance.



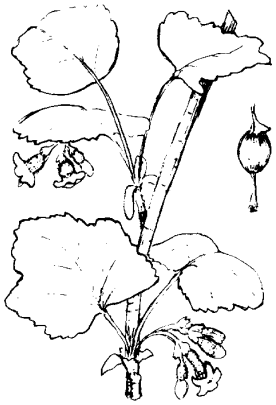


PINK BEE FLOWER

Wax currant *(Ribes cereum)*

GOOSEBERRY FAMILY (GROSSULARIACEAE)

Wax currant *(Ribes cereum)* is a shrub of remarkable adaptability that grows everywhere from canyons to dry gravelly hillsides. It can very considerably in size and shape; some plants may be erect and 6 feet tall and others may be low and ground hugging. Its branches are smooth and grayish brown to reddish brown in color. It blooms from May to July with clusters of white or pink flowers on one-half inch stems. These are followed by numerous reddish berries that are an important food source of birds and small animals. Species of the *Ribes* are alternate hosts for white pine blister rust and are therefore sometimes removed from areas where white pines are growing.



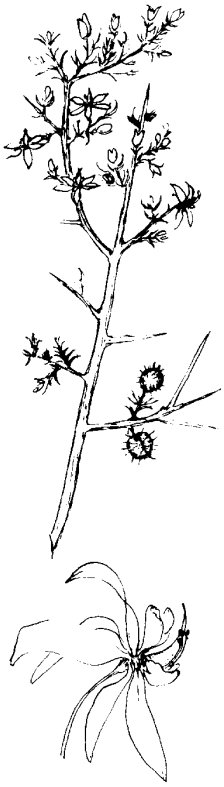
WAX CURRANT

Wild rose *(Rosa woodsii)*

ROSE FAMILY (ROSACEAE)

WILD ROSE

Wild rose is a prickly shrub that is usually not more than 6 feet tall. It is one of the best known of our wildflowers, partly because it has adapted to so many habitats and can be found everywhere from mountains to arroyo banks and desert springs. It blooms in early summer with showy pink blossoms that are delightfully fragrant. They are followed by fruits that become bright red in autumn. These are relished by wildlife and have sometimes been an important item of human diet. They are said to contain generous amounts of vitamin C.



LITTLE-LEAVED RATANY

Little-leaved ratany *(Krameria parvifolia)*

RHATANY FAMILY (KRAMERIACEAE)

Little-leaved ratany grows only about a foot high and spreads 1 foot to 18 inches in width. Its roots are thought to be partly parasitic on other woody plants. These are sometimes used in making a reddish dye. This is a plant of dry plains and mesas and is quite common in the most southern part of Utah. The new leaves are covered with soft hairs that become harsh with age. In May, its rigid, rather thorny branches become completely covered with fragrant, red-purple flowers that are so minutely beautiful that they deserve examination with a lens. Its fruits are roundish pods that are protected by short barbed spines.

Western redbud *(Cercis occidentalis)*

PEA FAMILY (LEGUMINOSAE/FABACEAE)

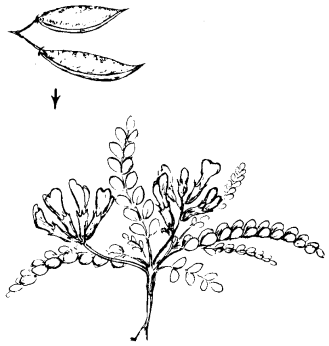
Western redbud was so named for its bright magenta pink (rarely white) blossoms that appear in early spring while the tree is still leafless. The pea-shaped flowers are borne on short stems that grow directly out of the woody stems. It is a large shrub or small tree with clustered erect stems and smooth gray bark. The blossoms last for only a day or two and are rapidly followed by glossy green leaves. **Redbud** is quite often found in cultivation, but in Utah, it is native only to the southern part of the state.

Locoweed and milkvetch *(Astragalus)*

PEA FAMILY (LEGUMINOSAE/FABACEAE)

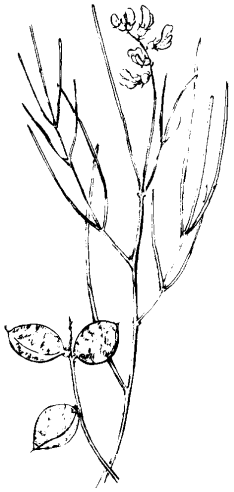
Locoweeds and **milkvetches** make up the most diverse genus of flowering plants in Utah. They encompass a great amount of variation in both appearance and ecology. As members of the Pea Family, they share many features in common with beans and peas, including pea-shaped flowers, compound leaves, and fruit pods that are classified botanically as legumes.

Many locoweeds are poisonous to livestock. Some absorb and concentrate selenium in their tissues, some synthesize and retain nitrotoxins, while others harbor high amounts of certain alkaloids.



CRESCENT MILK-VETCH

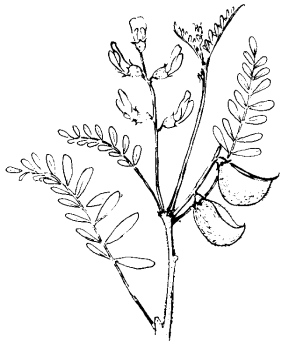
Crescent milk-vetch *(Astragalus amphioxys)* is named for its seed pods that curve and are sharp at both ends. It inhabits sandy areas in southern and southeastern Utah. This is a low tufted perennial that usually has bright pink blossoms, but they may vary with shades of near white or pink-purple. The leaves are covered with stiff silvery hair.



PAINTED MILK-VETCH

Painted milk-vetch *(Astragalus ceramicus)* is distinguished by its inflated, egg-shaped fruit that is mottled with red, purple or brown. The botanist who named it felt that it resembled painted pottery. Its blossoms are small, usually flesh pink and finely veined with a darker color. The plants spread by sending out slender creeping root-stalks. It is an inhabitant of sand dunes and other open areas in central and southern Utah.

Geyer milk-vetch (*Astragalus geyeri*) is plentiful on hot arid sandy dunes throughout the Great Basin and in east-central Utah. As a desert species it is a highly adapted annual that may complete its life-cycle in 3 or 4 months. When moisture is available it may be a biannual or perennial. Its small flowers are white or purple-blue and its fruit turns sand color at maturity.



GEYER MILK-VETCH

Prickly milk-vetch (*Astragalus kentrophyta*) is an aromatic perennial that forms spreading mats. The leaves are short and thick textured with spinose tips that become prickly with age. The diminutive rather inconspicuous blossoms are purple or whitish and set close to the stems. The pods also are small. These plants are good soil-binders for the sandy areas where they grow. They are distributed through the western half of Utah and are most numerous in a line west of the Wasatch Front southward to the Arizona line.

PRICKLY MILK-VETCH

Specklepod loco-weed (*Astragalus lentiginosus*) is a widely distributed, highly variable species that grows from timberline to sea-level; it can grow in damp, alkaline soil and may be an annual, biannual or perennial. Its flowers range from purple to whitish and appear in spectacular displays in the spring. The leaves are sometimes covered with soft, silky hairs and the pods are inflated and mottled. They are mildly poisonous.

SPECKLEPOD LOCO-WEED

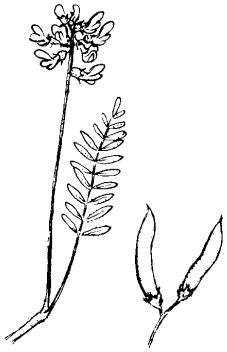
Moenkopi loco-weed (*Astragalus moencoppensis*) is locally common in the southeastern corner of Utah. It is a slender attractive plant with numerous red-lilac flowers borne on broom-like tufts up to 18 inches tall. The leaves and stems are pale green. It is found in sandy-gravel; often at the base of cliffs. It contains selenium and is therefore poisonous. It was named for Moencoppa, Arizona.

MOENKOPI LOCO-WEED

Newberry milk-vetch (*Astragalus newberryi*) is a Great Basin species that grows in dry sand or clay soil. It is a dwarf perennial that at maturity is usually no more than 4 inches tall and 6 inches wide. The blossoms rise slightly above the foliage with numerous pink flowers clustered at the top of each stem. The fruits are completely covered with dense, stiff gray hair.

NEWBERRY MILK-VETCH

Small flowered milk-vetch (*Astragalus nuttallianus*) may also be found at the base of cliffs and on sandy hills in southern Utah. It has slender stems that lay prostrate upon the ground, forming loose mats up to 2 feet in diameter. It is an annual or winter annual and quite often completes its life cycle in a few months. It can mature seed and not be more than an inch tall. Its blossoms are born on erect stems and are mostly white, tipped with purple. As the slender pods mature they tend to become three-sided in cross-section.



SMALL-FLOWERED MILK-VETCH

Egg milk-vetch (*Astragalus oophorus*) means "egg-bearing" referring to the fruit. This plant has rather small blossoms that are purple, white or yellow, or even lilac tinged. It is their large, thin, papery, inflated fruit that makes them conspicuous. The color varies from pale green to green mottled and spotted with red-brown. It grows in loose gravelly soil on open hillsides in central and southwestern Utah.

EGG MILK-VETCH

SWEETPEA

Sweetpea (*Lathyrus brachycalyx*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

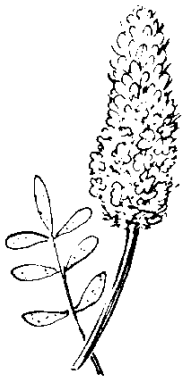
Sweetpea occupies sandy or gravelly slopes in the sagebrush-juniper areas of western Utah. It spreads with underground stems and often forms thick stands 8 inches to 18 inches tall along roadsides and open washes. Above ground its stems are leafy and rather weak. The whole plant has a blue-green cast. In May and June it produces showy flowers that vary between deep blue-purple and pink-lavender. They fade to a blue-pink. The keel is commonly lighter in color than the banner.

LAMBERTS LOCO-WEED

Lamberts loco-weed (*Oxytropis lambertii*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Lamberts loco-weed closely resembles some species of *Astragalus* and, because it is so toxic, also shares the same common name. This *Oxytropis* has an erect habit of growth with both leaves and foot-high flowering stalks growing from the base of the plant. From May to September it blooms with attractive blossoms that are either pink or white with a blue spot.



SEARL'S PRAIRIE CLOVER

Searl's prairie-clover (*Dalea searlsiae*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Searl's prairie-clover has a more widespread distribution throughout western Utah than the other prairie-clovers native to the state. This herbaceous perennial has leafy branches that rarely exceed 20 inches in length and are dotted with dark glands. Showy magenta to rose-purple flowers are crowded into dense cones at the ends of branches and make this an easy plant to spot in open sandy or gravelly desert habitats.

New Mexico locust (*Robinia neomexicana*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

New Mexico locust is a thorny shrub or small tree, that grows to 25 feet tall. It sprouts freely from the roots and forms thick, erosion-controlling thickets along washes and canyon sides. It is common in southern Utah where it is sometimes associated with scrub oak. This tree is especially handsome in spring and summer when it blooms with large clusters of rose-pink, fragrant flowers. The young branches are frequently densely covered with prickles.

NEW MEXICO LOCUST

Storksbill or **filaree** (*Erodium cicutarium*)

GERANIUM FAMILY (GERANIACEAE)

Storksbill or **filaree** is an annual with green ferny leaves that develop in a low rosette. They are frequently so abundant that they make a continuous carpet. It is thought to have been brought here by early Spanish missionaries. The leaves retain a large percentage of water—a factor that makes them especially valuable for forage. The lilac-pink flowers may be found almost anytime during the growing season. The immature seeds resemble long-billed birds.

STORKSBILL

Spiny or **cushion milkwort** (*Polygala subspinosa*)

MILKWORT FAMILY (POLYGALACEAE)

Spiny or **cushion milkwort** is a low compact subshrub that forms rounded pale green clumps about 6 to 8 inches in height. Known from throughout the southern and central regions of Utah, it can be found in various desert shrub communities. The blossoms are quite showy with each flower bearing segments that are either pink-purple or yellow.

SPINY MILKWORT

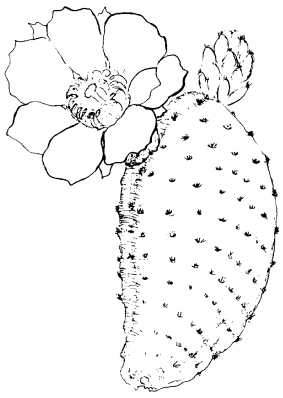
Tamarisk or **salt cedars**
(*Tamarix aphylla, T. chinensis, T. parviflora*)
TAMARISK FAMILY (TAMARICACEAE)

Tamarisk or **salt cedars** are introduced shrubs and trees that have spread rapidly along desert water courses and into desert seeps, where they can form dense thickets. Their loose drooping branches are covered with minute scale-like leaves, and during most of the growing season, elongate clusters of pink or white flowers cover the ends of the branches. Initially introduced to serve as soil stabilizers and windbreaks, salt cedars have subsequently been discovered to be invasive weeds with extremely high rates of water consumption that can be detrimental in low moisture areas.


TAMARISK

Beavertail cactus (*Opuntia basilaris*)
CACTUS FAMILY (CACTACEAE)

Beavertail cactus is a handsome, low spreading plant with bluish-green flattened stems. It grows in mat-like clumps or into shrubs that may be several feet tall. It frequently has no spines, but the areoles are armed with many small glochids that can inflict intense pain and can be exceedingly difficult to remove. The beautiful flowers open in March and April and are up to 3 inches in diameter. Its color range is through magenta-pink or creamy white. Being more common in the warm deserts to the south and west of Utah, **beavertail cactus** extends into the state only in the southernmost regions.


BEAVERTAIL CACTUS

Fishhook cactus (*Sclerocactus*)
CACTUS FAMILY (CACTACEAE)

Fishhook cactus has tubercles that grow along the top of its stem ridges. The flowers come at the apex of new tubercles. The mature fruit is dry. Its long, hooked spines give it its name. *Sclerocactus whipplei* is common in the canyon lands of southeastern Utah. Its flowers are generally pink or pink-purple, but may be nearly white or yellow. The upper central spines are flat and white. The plants are up to 16 inches tall and 6 inches in diameter.

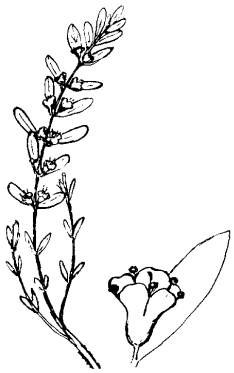

FISHHOOK CACTUS

BUTTERFLY WEED

Butterfly weed or **scarlet gaura** (*Gaura coccinea*)

EVENING-PRIMROSE FAMILY (ONAGRACEAE)

Butterfly weed or **scarlet gaura** is a bushy perennial that grows from a woody base. Stems that reach 4 to 20 inches in height are topped with spikes of pink to salmon flowers that intensify in color with age, becoming red orange to maroon. Although **butterfly weed** has been collected most commonly in the southwestern corner of Utah, it is also known in the state from scattered localities in the extreme north and southeast.

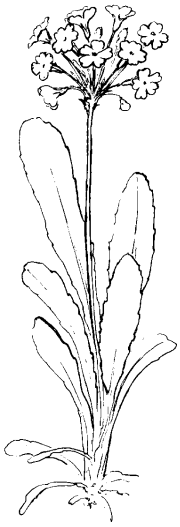


SEA MILKWORT

Sea milkwort or **saltwort** (*Glaux maritima*)

PRIMROSE FAMILY (PRIMULACEAE)

Sea milkwort or **saltwort** is a widely scattered plant that grows in wet places. It is included in the desert plants because it grows in the saline marshes of our salt deserts. In these habitats it becomes only a few inches tall. In late spring it produces numerous small flowers along its leafy stems. These blossoms are without petals, but have petal-like sepals that are pink to red.



PRIMROSE

Primrose or **Easter flower** (*Primula specuicola*)

PRIMROSE FAMILY (PRIMULACEAE)

Primrose or **Easter flower** is a beautiful April blooming plant that occurs exclusively in seeps and hanging gardens of southern Utah and northern Arizona. The individual blossoms are about one-half inch in diameter and are pale pink. The blossom stalks rise above the foliage and may be as much as 10 inches high.

Ruth's milkweed (*Asclepias ruthiae*)

MILKWEED FAMILY (ASCLEPIADACEAE)

Ruth's milkweed is an herbaceous perennial occurring in southeast Utah. Clusters of stems may be erect or sprawling. The broadly-shaped leaves occur in pairs opposite one another and are covered with soft, white hairs. Dense clusters of small, but showy flowers are pink to rose purple.

RUTH'S MILKWEED

Climbing milkweed (*Sarcostemma cynanchoides*)

MILKWEED FAMILY (ASCLEPIADACEAE)

Climbing milkweed is locally common in isolated spots in southern Utah, often growing in washes and arroyos. As a perennial with twining stems, it clambers over shrubs and twists about itself, forming thick ropes. Its milky juice has an unpleasant odor. The flowers occur in clusters and vary in color from greenish white to pink and purple.

CLIMBING MILKWEED

Scarlet gilia or **skyrocket** (*Gilia aggregata*/*Ipomopsis a.*)

PHLOX FAMILY (POLEMONIACEAE)

Scarlet gilia or **skyrocket** is a stunning herbaceous plant with brilliant floral displays atop erect stems that may reach 20 inches or more in height. The flowers have long tubes with flaring lobes; colors include varying shades of scarlet, pink, salmon, and white. This species exhibits such a large degree of variation in both ecological amplitude and flower color and shape, that some consider it to represent more than one species. Taken as a single species, it is widespread throughout Utah, transcending many plant communities. A skunky odor is detectable from the herbage.

SCARLET GILIA

Long-flowered gilia (*Gilia longiflora*)

PHLOX FAMILY (POLEMONIACEAE)

The floral tube of **long-flowered gilia** is sometimes more than 1¼ inches long while the diameter of the blossom exceeds three-fourth inch. It frequently occurs in large stands and makes an impressive display when in bloom. It varies in color from white to pink and through shades of blue. It is usually an annual with branching stems up to about 18 inches high. It grows in open areas in southeastern Utah and blooms from March to October.

LONG-FLOWERED GILIA

Sand gilia (*Gilia subnuda*)

PHLOX FAMILY (POLEMONIACEAE)

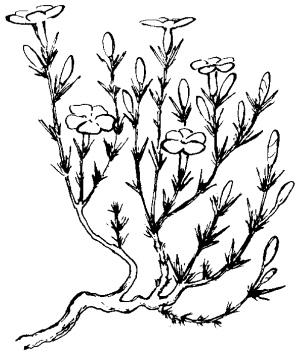
Sand gilia has flowers that range in color from pink to crimson and orange. It is exceedingly attractive in June and July. This is a sturdy, branching perennial, 4 to 24 inches tall, with reddish-green leaves in a basal rosette that varies considerably in size and shape. The whole plant is covered with sticky glands that tend to catch blowing sand. It inhabits dunes and sandhills in south-central Utah. The calyx has red nerves.

SAND GILIA

Granite gilia or **prickly gilia** (*Leptodactylon pungens*)

PHLOX FAMILY (POLEMONIACEAE)

Granite gilia or **prickly gilia** is an erect, spreading shrub or subshrub 8 inches to 2½ feet tall that, in Utah, grows on dry, rocky, desert ridges. In May and June it produces very fragrant, tubular blossoms that open at night. They range in color from creamy white to lilac and pink. The backs of the flowers are sometimes brownish or purplish.



GRANITE GILIA

Long-leaved phlox (*Phlox longifolia*)

PHLOX FAMILY (POLEMONIACEAE)

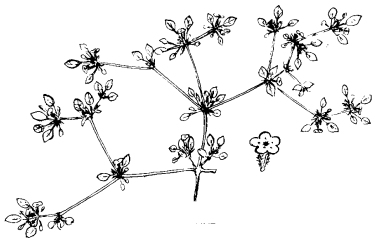
Long-leaved phlox is widely distributed on the foothills of Utah's mountains as well as in sagebrush desert areas. It is a perennial with creeping rootstocks. Its branching stems may be as much as 18 inches tall. The leaves are long, thin and gray-green. For a brief period between April and June, it produces numerous pink and white blossoms. This plant is often found growing through the protecting branches of sagebrush and other low growing desert shrubs.

LONG-LEAVED PHLOX

Tiquilia (*Tiquilia*)

BORAGE FAMILY (BORAGINACEAE)

Nuttall tiquilia *(Tiquilia nuttallii*) grows in low mats 4 inches to 12 inches wide. It is distinguished by a divergent branching pattern. Its leaves are gray-green with deep veining and edges that turn under. The flowers are small and pink or white. It blooms from May to August. It can be found on sandy or alkaline soil.



NUTTALL TIQUILIA

Matted tiquilia (*Tiquilia latior*) is common in some of our south deserts. It is about the same size as Nuttall tiquilia with leaves that are about one-eighth inch wide and one-half inch long. They are covered with sharp hairs. Its flowers are whitish pink. Tiquilia blossoms usually open in the afternoon.

MATTED TIQUILIA

Gooding verbena (*Verbena goodingii*)

VERBENA or VERVAIN FAMILY (VERBENACEAE)

Gooding verbena is a handsome plant which grows with several stems from a perennial root and is usually about 1 foot high. In spring and early summer, it produces clusters of flowers that are rather flat-topped as they begin to bloom, but tend to become elongated as they mature. Their colors range through tones of pink, blue, lavender and purple. The leaves and stems are covered with dense hairs that lie flat. In Utah, it occurs only in the southwest corner in creosote bush to pinyon-juniper plant communities.

GOODING VERBENA

PALMER'S BEARDTONGUE

Palmer's penstemon or **beardtongue** (*Penstemon palmeri*)

SNAPDRAGON or FIGWORT FAMILY (SCROPHULARIACEAE)

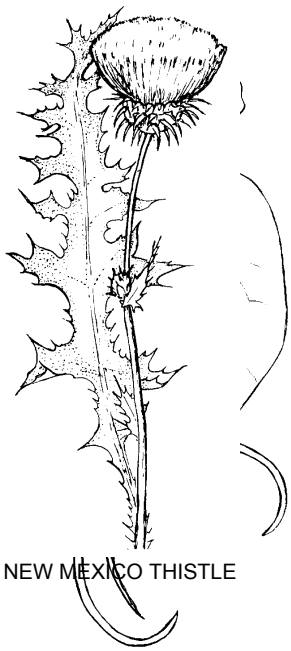
Palmer's penstemon or **beardtongue** is the largest of our desert penstemons. These perennials consist of many sturdy stems, sometimes reaching a height of 4 feet. It is common on dry, rocky washes and sagebrush-covered hills in central and southern Utah and abundant in Zion National Park. The leaves are thick, smooth, and light gray-green. In May and June it produces showy white to pink blossoms marked with narrow maroon-purple lines. This penstemon is unusual in our area in that the flowers are fragrant; their scent is a little reminiscent of apple blossoms.

Desertwillow (*Chilopsis linearis*)

BIGNONIA FAMILY (BIGNONIACEAE)

Desertwillow is a relative of the catalpa. It is a willow-like, shrubby tree that grows to about 20 feet high. It is common along water courses in the warm deserts south of Utah but grows in our state only in Washington County. It has pale green leaves along slender branches and is relatively unimpressive except from May to September, when it blooms—then it becomes breath-takingly lovely. Its catalpa-like flowers are white or pink-lavender, with darker markings. It is often planted as an ornamental.

DESERTWILLOW



NEW MEXICO THISTLE

DEVILSCLAW

Devilsclaw or **unicornplant** (*Proboscidea parviflora*)

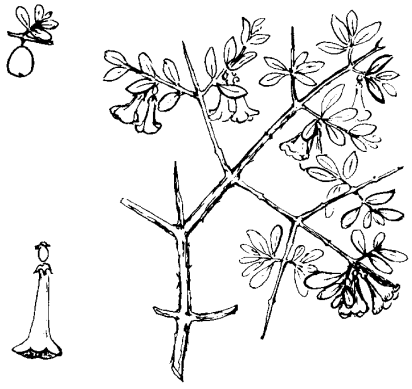
SESAME FAMILY (PEDALIACEAE)

Devilsclaw or **unicornplant** is an annual of the warm deserts of extreme southwestern Utah. It is a large, coarse, spreading plant with sticky stems and leaves. In the summer it has a few showy blossoms that range in color from reddish-purple to almost white, marked with yellow or purple. The pods are especially interesting. As they mature, they become woody and black and split partially from the end. Arizona Indians sometimes weave shreds of this dark covering into the designs on their baskets. The pods attach themselves to animals and seeds are thus scattered.

Long-flowered snowberry (*Symphoricarpos longiflorus*)

HONEYSUCKLE FAMILY (CAPRIFOLIACEAE)

Long-flowered snowberry is a low, spreading shrub 1 to 3½ feet tall, that grows on rocky desert hillsides, canyons and in pinyon-juniper woodlands throughout central and southern Utah. Its mature branches are grayish and have shreddy bark. The new ones are reddish-brown. It blooms from April to August with fragrant, pale pink flowers that have a purplish-pink tube. The fleshy fruit is as white as snow. It is a valuable browse plant for cattle and deer.

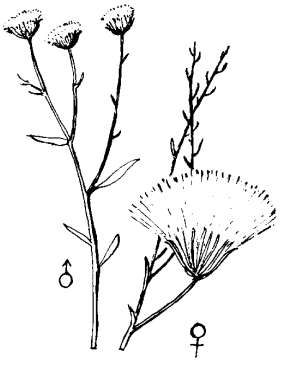


LONG-FLOWERED SNOWBERRY

Wright baccharis (*Baccharis wrightii*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Wright baccharis is a woody based perennial 1 to 2 feet tall that inhabits dry soil and is quite salt tolerant. Its green topped branches are finely marked lengthwise with white lines and are purplish at the base. Flowers are terminal on the branches and bloom from May to July. The female plants have conspicuous seed heads with brown or purplish pappus. Its distribution extends into Utah only in the southeastern corner of the state.



WRIGHT BACCHARIS

New Mexico thistle (*Cirsium neomexicanum*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Our native **desert thistles** (*Cirsium*) are rather rare, but many introduced species have found their way into semi-desert and roadside situations. **New Mexico thistle** is a native desert species that grows sparsely over a rather large part of our western and southern deserts. The plants range in size from 2 feet to 5 feet tall and become freely branched as they mature. It blooms throughout the spring and summer with blossoms that are white or sometimes pale pink or lavender. The whole plant is more or less covered with soft, cotton-like hair and armed with very sharp spines. The leaves are green above, and grayish and hairy beneath. The lower part of the leaf is attached down the stem, forming wings.

Spreading fleabane daisy (*Erigeron divergens*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Spreading fleabane daisy is the most common *Erigeron* in our flora. It occurs in scattered areas throughout the state. It is a freely branched biennial or perennial that grows up to about 24 inches high. Its branches are erect or spreading and quite leafy. They are covered with short, white, spreading hairs. The numerous flower heads are about an inch in diameter, with yellow disk flowers and up to 100 slender, pink lavender or white rays. It blooms all spring and summer.

SPREADING FLEABANE DAISY

Utah fleabane (*Erigeron utahensis*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

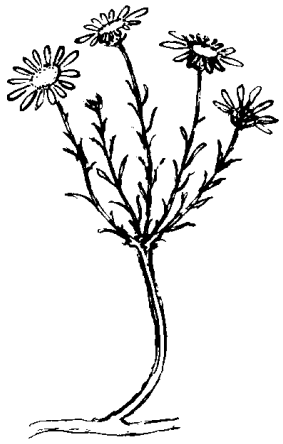
Utah fleabane is a southern Utah species that grows in loose sandy soil, often in sandstone areas. It is usually about a foot high and sometimes develops clumps a yard or more in diameter. Its blossoms are up to 2 inches across. The disk flowers are yellow and the rays (that rarely number more than 30) are white, pink or lavender-blue. It blooms all spring and summer.

UTAH FLEABANE

Rose-heath or **white aster** (*Chaetopappa eriocoides*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Rose-heath or **white aster** grows on dry gravelly limestone hills in all but the northern tier of Utah. It is a round tufted perennial 6 inches or less in height, that arises from small woody underground rootstalks. The numerous slender, leafy branches are covered with short white hair. During its blooming season in May, June and July, it is densely covered with blossoms that come at the ends of the branches. The rays are pink to pinkish white and the disk flowers are pale yellow.



ROSE-HEATH

Skeleton plant (*Lygodesmia grandiflora*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

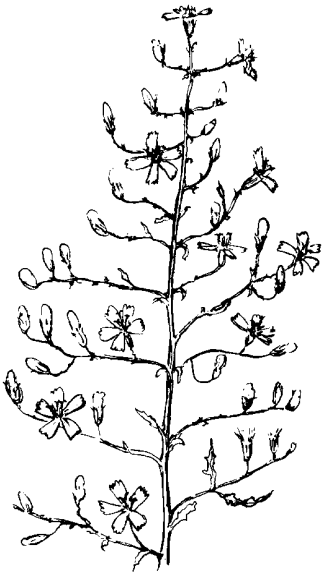
Skeleton plant grows in gravelly areas on the foothills of our mountains as well as in desert areas. It is found on the eastern side of the Wasatch Range backbone in desert shrub to pinyon-juniper communities. This plant is an erect perennial up to 15 inches tall with grass-like leaves and wiry stems. It begins to bloom in May with a single flower head only a few inches above the ground. As it matures it produces ascending branches with flowers at the ends of each. The blossoms fade at the end of each day and are replaced by new ones each morning. The rays are soft, lavender pink and notched at the tips.

SKELETON PLANT

Wire lettuce (*Stephanomeria exigua*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

Wire lettuce grows sparsely in open gravelly hills over most of our desert and foothill areas. As with many annual plants, its size varies with the amount of available moisture, ranging from 4 to 20 inches in height. Its slender wiry, erect stems are divergently branched and have a pale bluish-gray color. They contain a milky juice. A pink flower head, one-half inch in diameter, is produced at the end of each branchlet. It blooms all summer. Two closely related perennial species that are rather similar in appearance, are widely distributed over the southern half of the state. *S. tenuifolia* and *S. pauciflora* both have slender pale green stems and pinkish flowers. *S. tenuifolia* blooms from May to September and grows 4 inches to 1 foot high. *S. pauciflora* grows 8 inches to nearly 2 feet high and has flowers that continue to appear a few at a time for most of the year.



WIRE LETTUCE

Townsendia (*Townsendia florifer*)

SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)

TOWNSENDIA

Townsendias are handsome little plants that, at maturity, produce many short stems from a single crown. They have hairy, gray-green foliage and numerous daisy-like blossoms of quite spectacular beauty. **Townsendia** is an annual, biennial or perennial, depending upon the available moisture. Sometimes a plant has a single stem an inch or so high with one blossom on top. More fortunate plants have many 6-inch high stems and numerous flowers. This **Townsendia** grows in Utah's Great Basin Desert in the northwestern part of the state, and blooms in May and June with pinkish-lavender flowers.

BLUE-PURPLE FLOWERS

Spiderwort *(Tradescantia occidentalis)*

SPIDERWORT FAMILY (COMMELINACEAE)

Spiderwort is a member of a family with more tropical affinities and grows only in the southern-most counties of Utah. A low-growing herb, plants may reach 18 inches in height with recurved grass-like leaves. Delicate, lavender-blue blossoms, arising with the leaves from conspicuous joints on the stem, open one at a time during spring through summer.

SPIDERWORT

Giant four o'clock *(Mirabilis multiflora)*

FOUR-O'CLOCK FAMILY (NYCTAGINACEAE)

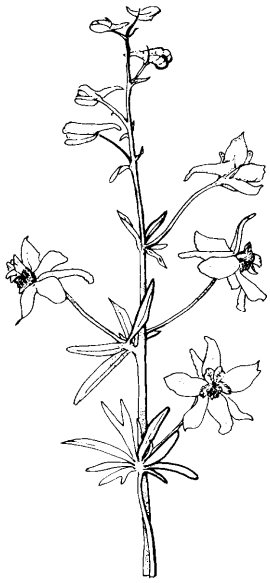
Four o'clocks get their names from new blossoms that open in the late afternoon and remain open all night until the next morning. The flowers have no petals, but large and colorful sepals make them very showy. **Giant four o'clock** has sweetly scented magenta to purple flowers that are about 2 inches in diameter. The plants form large, rounded mats that are spectacular when in bloom. Sand often adheres to the sticky leaves and stems.

GIANT FOUR 'OCLOCK

Larkspur (*Delphinium*)

BUTTERCUP or CROWFOOT FAMILY (RANUNCULACEAE)

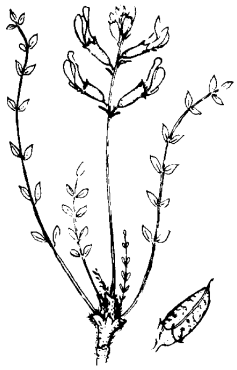
All Utah's delphiniums are blue—a factor that in itself makes them conspicuous, since blue flowers are rather rare in nature. Both the delphiniums listed here grow in open, dry, gravelly or sandy soil and bloom in May or June. The shape of their blossoms is quite similar. **Tall desert larkspur** (*Delphinium andersonii*) has smooth, mostly basal leaves. Its flowers come on a stalk about 2 feet high and are dark blue (Utah's) with a touch of white in the center. Its roots are fibrous. **Low larkspur** (*D. nuttallianum*) is rarely over a foot tall and has leafy stems. The flowers vary from dark blue to almost white. It has a cluster of thickened roots just under the surface of the ground. **Delphiniums** are poisonous.



LOW LARKSPUR

Zion milk-vetch (*Astragalus zionis*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)



ZION MILK-VETCH

Zion milk-vetch was named after Zion National Park, where it is common on rock ledges and in talus on the canyon walls. Its flowers are purple; turning blue-purple with age. The pods are brightly mottled with reddish-brown.

Indigo-bush or **pea-bush** *(Dalea)*

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Indigo-bush and **pea-bush** are names given to two shrubby Daleas that occur in our southern counties. They are both quite compact and finely branched and both tend to develop spiny branch tips. Their bark is gray-green to white and they have numerous fine-textured leaves. In spring both species are completely covered with intense violet-blue blossoms.

Fremont dalea (*Dalea fremontii)* has hairy, gray-green leaves and very pale, inconspicuous glands. It grows about 4 feet tall.

Thompson dalea (*Dalea thompsonii*), on the other hand, is smaller and has bark and calyx thickly covered with red-amber glands about the size of a pin-prick. Its leaves are yellow-green and the calyx is conspicuously ribbed.

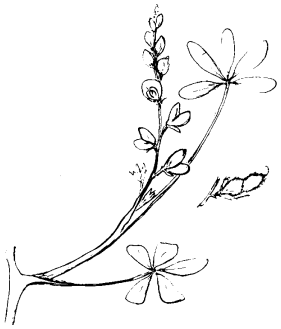
FREMONT DALEA

THOMPSON DALEA

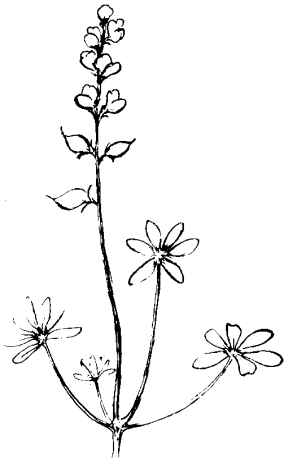
Lupine (*Lupinus*)

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Lupines are widely distributed, herbaceous plants with handsome, mostly blue flowers. This genus is readily distinguished from other members of the pea family by the shape of the leaves and by the upright habit of growth. Many of them are very toxic to livestock. Both **rusty lupine** (*Lupinus pusillus*) and **yellow-eye lupine** (*L. rubens*) are 2 to 8 inch annuals that grow in sandy areas of southern Utah. Both are covered with silvery hair and have blue blossoms. **Rusty lupine** often has a white spot while the yellow-eye lupine is marked with bright yellow that turns dark as the flower fades. Their habit of growth is different. **Yellow-eye lupine** has a more erect habit of growth and is showier than rusty lupine.

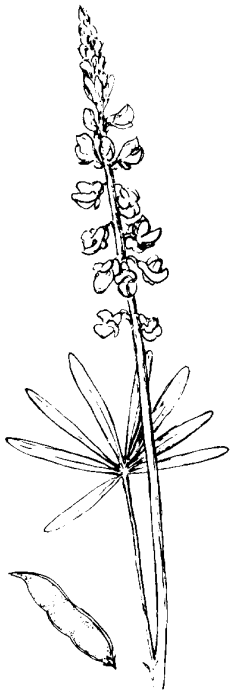


RUSTY LUPINE

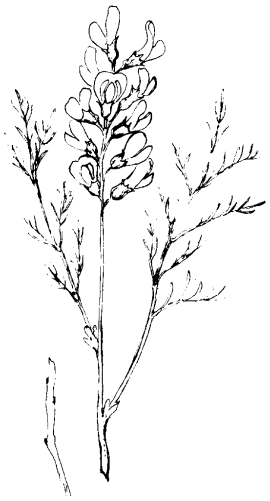


YELLOW-EYE LUPINE

Spurred lupine (*L. argenteus*) is a perennial lupine adapted to widely different habitats. It is common on many of our foot hills and canyon sides, but is just as much at home in open desert areas. It grows about 20 inches tall from May through September. It produces stalks of predominantly violet-blue flowers that stand well above the foliage. They are rarely white. This plant is of major concern to cattle and sheep producers since it is so widespread and is very toxic.



SPURRED LUPINE



FRINGELEAF SOPHORA

Fringeleaf sophora *(Sophora stenophylla)*

PEA FAMILY (LEGUMINOSAE/FABACEAE)

Fringeleaf sophora is beautiful with its silky, gray-green leaves and large, violet-blue flowers. It is a 12 inch high perennial that grows in southern and eastern Utah sandy areas and spreads by means of woody underground stems. It is somewhat poisonous to livestock. It blooms in May and June.

Blue flax *(Linum lewisii)*

FLAX FAMILY (LINACEAE)

Blue flax is an herbaceous perennial with wandy stems that can reach 3 feet in height and are topped with large but delicate sky-blue flowers. It has a wide distribution throughout the state from low elevation desert shrub plant communities to higher elevation aspen-fir associations. This is related to the cultivated flax, *Linum usitatissimum*, from which linen is made.

BLUE FLAX

TURPENTINE-BROOM

Turpentine-broom or **desertrue** *(Thamnosma montana)*

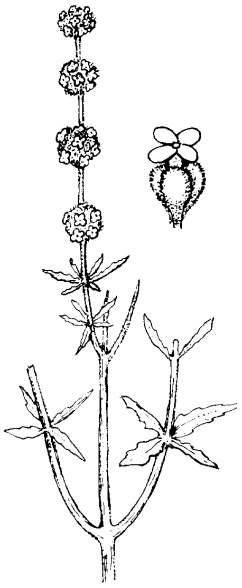
RUE FAMILY (RUTACEAE)

Turpentine-broom or **desertrue** is a branching, broom-like, rather thorny shrub 1 to 3 feet high that occurs frequently on the gravelly slopes at the southern limits of Utah's pinyon-juniper desert. Its leaves and stems are yellow-green and are covered with glands that give it a pungent aroma. In spring it blooms with blue-purple flowers one-half inch long.

Utah butterflybush (*Buddleja utahensis*)

LOGANIA FAMILY (BUDDLEJACEAE)

Utah butterflybush grows on limestone cliffs and dry slopes in southwestern Utah. It is a little shrub not more than 2 feet high, with an intricate branching habit and shreddy bark. Its leaves are interesting; the edges roll under and the veins stand out conspicuously on the underside. They are covered with dense woolly hair that makes them a gray-green color. It blooms in April with small purple flowers arranged in little balls up the stem.



UTAH
BUTTERFLYBUSH

Bluestars (*Amsonia*)

DOGBANE FAMILY (APOCYNACEAE)

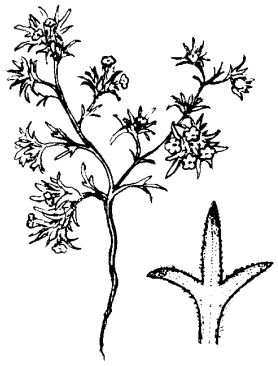
There are two species of **bluestars** (*Amsonia jonesii* and *A. tomentosa*) native to Utah, both of which grow in our southern deserts, in dry, gravelly soil, often near gulches and washes. They are woody-based, much-branched perennials about 1 foot high. In spring and early summer they produce attractive clusters of lead-blue flowers at the apices of their leafy stems. The seeds are borne in narrow pods about 3 inches long. Both are quite poisonous.

BLUESTAR

Eriastrum (*Eriastrum diffusum*)

PHLOX FAMILY (POLEMONIACEAE)

Eriastrum is an intricately branched annual that forms spreading plants from a few inches up to a foot in diameter. The compact flower heads are about three-fourths inch in diameter and subtended by woolly, gray bracts. They bloom from March to May with flowers that are small and bluish white with either yellow or white throats. These are common plants in open, sandy deserts in southern Utah.

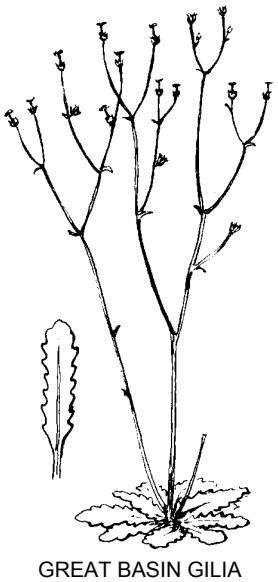


ERIASTRUM

Great Basin gilia (*Gilia leptomeria*)

PHLOX FAMILY (POLEMONIACEAE)

Great Basin gilia is distributed throughout the Great Basin and also in eastern Utah. It prefers open sandy and disturbed areas. It is an annual plant, 2 to 6 inches tall, with a basal rosette of glandular, hairy leaves that have a decidedly unpleasant odor. Its minute, pale-lavender flowers are encased in a red-nerved caylx, that is rather more conspicuous than the blossom. They bloom from April to June.



GREAT BASIN GILIA

Rosy gilia (*Gilia sinuata*)

PHLOX FAMILY (POLEMONIACEAE)

Rosy gilia inhabits about the same areas and is quite similar to the Great Basin gilia except that it is taller (6 to 18 inches). Its blossoms are larger (about three-eights inch across) and its stems tend to be leafy. It also blooms a little earlier. The nerves on the calyx are green rather than red and its blossoms are lavender.

ROSY GILIA

Purple mat (*Nama demissum*)

WATERLEAF FAMILY (HYDROPHYLLACEAE)

PURPLE MAT

Purple mat is a colorful, little desert annual that grows on open flats in clay or sandy soil in southern Utah. Its spreading branches originate at the base of the plant and are slender and wiry. Much of its size and habit of growth depend upon the amount of moisture available during its growing season. When rainfall is lacking, it may be less than an inch tall, producing only a blossom or two; but in favorable years, it develops spreading plants, that together, form vast reddish-purple mats of bloom.

Heliotrope or **scorpionweed** (*Phacelia crenulata*)

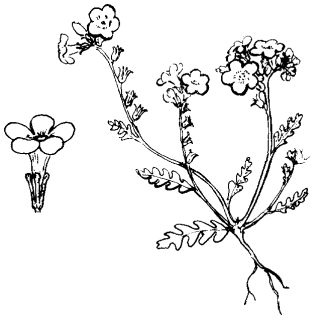
WATERLEAF FAMILY (HYDROPHYLLACEAE)

HELIOTROPE

Heliotrope or **scorpionweed** is common in all the deserts of central and southern Utah. It is an annual or biennial 4 to 16 inches tall. In the spring it produces numerous showy, fragrant, purple-blue flowers on stems that uncurl from the ends. Its leaves are mostly basal, sticky, and have sharp, glass-like hairs that cause considerable discomfort to some people's skin. The whole plant has an unpleasant odor.

Yellow-throated phacelia (*Phacelia fremontii*)

WATERLEAF FAMILY (HYDROPHYLLACEAE)



YELLOW-THROATED PHACELIA

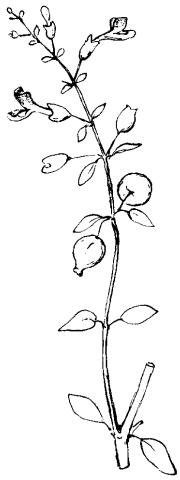
Yellow-throated phacelia is a 4 to 12 inch annual that is more delicate than heliotrope. The flowers are purple-blue, but have yellow throats. They bloom from March through May. Its branches are quite leafy and it has an skunky odor. In Utah its distribution is limited to southern counties where it grows under shrubs.

Purple sage (*Poliomintha incana*)

MINT FAMILY (LABIATAE/LAMIACEAE)

Purple sage grows on sand dunes in southeastern Utah. It is an attractive, pleasantly aromatic, much branched, leafy shrub that forms low, soil stabilizing mounds. It blooms from May to September. The blossoms are borne on terminal spikes and are pale blue-rose or lavender. They have dark-colored dots on the lower lip. The calyx tends to have a purple cast that gives this plant its common name. Some Indians are reported to have used its leaves as a pot herb and its blossoms as seasoning.

PURPLE SAGE

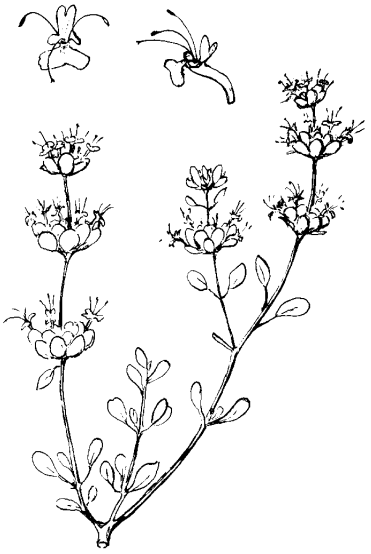


MEXICAN BLADDER-SAGE

Mexican bladder-sage or **paper bag bush** (*Salazaria mexicana*)

MINT FAMILY (LABIATAE/LAMIACEAE)

Mexican bladder-sage or **paper bag bush** extends its distribution into Utah only in the extreme southwest region where it grows with other warm desert species. Reaching 3 feet in height, this aromatic shrub is intricately branched with spiny, blue-gray twigs and small, sparse gray-green leaves. In spring it is covered with interesting blossoms that have a color combination of rich blue-purple and greenish white. It becomes particularly handsome in the summer and fall as its inflated papery fruits mature and become rose-colored.



GRAY BALL SAGE

Gray ball sage (*Salvia dorrii*)

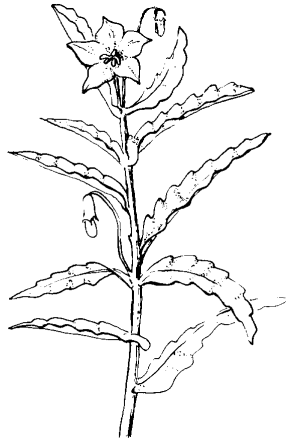
MINT FAMILY (LABIATAE/LAMIACEAE)

A blooming plant of **Gray ball sage** is spectacularly beautiful. In late spring blue-lavender flowers encased by pale rose to bright red-purple leafy bracts cause it to stand out in brilliant contrast to the gray tan of the sandy, rocky slopes of western Utah. It is a rounded closely branched little shrub from 4 inches to 3 feet tall and just as broad.

Silver nightshade or **horsenettle** (*Solanum elaeagnifolium*)

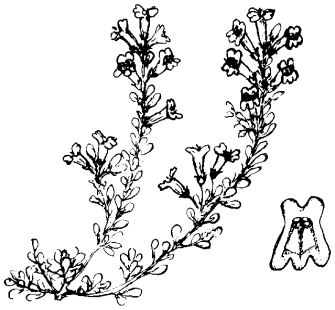
POTATO or NIGHTSHADE FAMILY (SOLANACEAE)

Silver nightshade or **horsenettle** is perhaps the most handsome of several **nightshades** that are common along roadsides and in sandy areas in southern Utah. In favored spots, it grows to be about 3 feet tall and has velvety, gray-green leaves and stems. From May to October it bears attractive, purple blossoms with yellow stamens in the center. The mature fruit is about one-half inch in diameter and resembles a small tomato. These are used by Pima Indians in making cheese. Many of the nightshades are poisonous.



SILVER NIGHTSHADE

Mat penstemon or **beardtongu**e
(*Penstemon caespitosus*)
SNAPDRAGON or FIGWORT FAMILY
(SCROPHULARIACEAE)


MAT PENSTEMON

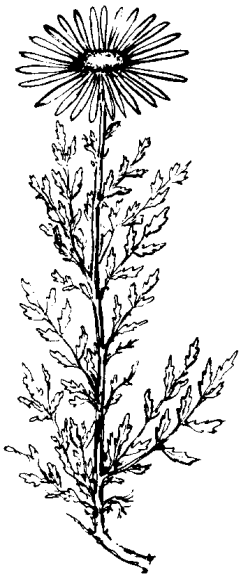
Mat penstemon or **beardtongu**e is one of the smallest of penstemons, growing to only about 4 inches tall. It spreads out with widely creeping, densely leafy stems to form thick perennial mats in eastern Utah. The summer blossoms are pale lavender-blue and distinguished by two vertical ridges at the bottom of the throat.

Shortstem penstemon (*Penstemon breviculus*)
SNAPDRAGON OR FIGWORT FAMILY (SCROPHULARIACEAE)


SHORTSTEM
PENSTEMON

Shortstem penstemon has erect stems up to about 14 inches high. Its lavender-blue blossoms are marked with dark veins and arranged in clusters at spaced intervals along the stem. This *Penstemon* is not widespread, but is common in some of southeastern Utah's open woodland areas. It makes an impressive show in May and June when it blooms.

Tansyleaf aster (*Machaeranthera tanacetifolia*)
SUNFLOWER FAMILY (COMPOSITAE/ASTERACEAE)


TANSEYLEAF ASTER

Tansyleaf aster is a plant of sandy washes in southern and southeastern Utah. It is an annual with a taproot and branches from the base that are up to 12 inches in height. It blooms from July to October with one to three-quarter inch flower heads. The rays are bright violet. The Hopi Indians used this plant for medicine.

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