<u>Erophilic</u>

the passic ti and other succulents

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Tucson Area *Opuntia* The Pricklypears



Dave Ferguson Albuquerque, NM davef@opuntiads.com



Joe Shaw Germantown, MD jshaw@opuntiads.com

summary→

hese are *Opuntia* species that grow naturally within the greater Tucson, Arizona area. They can be found within 30 miles of the city limits. Most of these species are unstudied or little studied. A number were described about 100 years ago and then little noticed since then. Some

of the most often used English common names are given here, but most species will also have Spanish common names that it has proven difficult to sort to individual species.

*Opuntia*s are plastic in morphology, with vegetative characteristics that can be alter in response to varied growing conditions. This makes quantifying their vegetative traits rather a slippery slope, because the same plant can look totally different when growing in different locations. Identification of these plants in the field is more easily done when whole populations of individuals are surveyed.

More information on these *Opuntia* species is available at **Opuntia Web**.

It is a common belief that hybridization is rampant in the group and that many of the confusing "types" are hybrids. However, when one spends time learning them in the field, it becomes apparent that nearly all plants belong to well-defined populations and that real hybrids are infrequent.



Native Species in alphabetical order

Opuntia arizonica Griffiths, Arizona Pricklypear, Valencia Pricklypear

Report of the Missouri Botanical Garden 29: 93-94, pl.2 and 10, 1909. Type locality: near Kirkland, Arizona This species is best described as a somewhat

This species is best described as a somewhat smaller, low spreading version of *O. engelmannii*. As compared to *O. engelmannii*, it is also usually more spiny, generally with several spines per areole in nearly all areoles. It is very abundant in the Tucson area, particularly on the lower outwash slopes of the mountains. It is abundant along the loop drive in the east unit of the Saguaro National Park.

Opuntia basilaris Engelmann and Bigelow, Beavertail Cactus

Proceedings of the American Academy 3: 298, 1857.

Type locality: Cactus Pass, east of Kingman, Arizona

A number of varieties have been named, but native Tucson area plants are referred to

typical variety basilaris.

This distinctive spineless species with pink to magenta flowers is found in the desert, mostly in the mountains, mostly well westward from the Tucson area, but plants have been recorded from nearby.

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Opuntia blakeana Rose, Blake Pricklypear

Contributions from the U.S. National Herbarium 12: 402, 1909.

Type locality: Tumamoc Hill, Tucson, Arizona This species grows as low spreading plants with small relatively narrow pads that are often a bit squared off at the tip. Areoles are small,

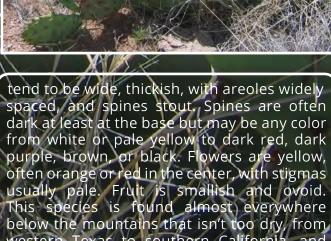
spines relatively few, short, and usually brown. Stem color is often dark and sometimes purplish or bluish. This taxon is related to 0. phaeacontha and *O. camanchica*, but recognizably distinct. Apparently, it only grows in the Santa Cruz basin of Arizona.

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Opuntia camanchica Engelmann and Bigelow, Comanche Pricklypear

Proceedings of the American Academy of Arts and Sciences 3: 293, 1856/1857. **Type locality**: near Cuervo, New Mexico **Synonyms**: *O. phaeacantha* var. *brunnea* Engelmann 1856; *O. chihuahuensis* Rose 1909. *O. camanchaca* is a common, widespread, variable species found widely in the Southwest and northern Mexico. It is often identified as *O. phaeacantha* var. *major*, which is a distinctly different and larger plant (i.e., *O. dulcis*). It is similar to *O. phaeacantha*, also being a low-spreading smallish plant. Pads



below the mountains that isn't too dry, from western Texas to southern California, and from southern Nevada, Utah, and Colorado south well into northern Mexico.

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Annual report Missouri Botanical Garden 20: 90, 1909.

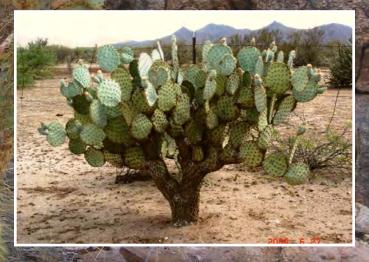
20: 90, 1909. Type locality: Florida Canyon., Santa Rita Mountains, Arizona Synonyms: ?O. flavescens Peebles 1937. This species is closely related to and similar to O. orbiculata but with pads usually narrower, spines fewer, and with fruit often pale in color (not always). Seedlings are apparently not hairy,

while they are strongly sø in *O. ørbiculata*, but this needs verified. This species seems to be in mountain areas and sometimes the valleys between, only in south-central Arizona and northern Sonora. *O. cañada* is not as cold hardy as *O. orbiculata*. *O. flavescens* from near Sells seems to be a synonym, as significant differences haven't been noticed, except fruits are darker than those from the Santa Rita Mountain plants.

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Opuntia chlorotica Engelmann and Bigelow

O. chlorotica var. chlorotica, Pancake Cactus / Pricklypear



Proceedings of the American Academy of Arts and Sciences 3: 291, 1856.

Type locality: Bill Williams Mountain, Arizona

This is a widespread bushy medium-sized tree-like species (though it can be relatively small or in exceptional cases can reach more than 8-ft/2,5m tall) of the southwestern US and northern Mexico. It takes on several appearances, mostly based on differing coloration and size. The plants have been divided by some into different species, but these blend where-ever they meet and behave as varieties. All varieties produce both spiny and spineless individuals. Flowers on all are bright yellow, only rarely with reddish centers.

The Mexican *O. setispina* Engelmann, with grayish pads and usually white spines, is also a member of this group, and is the oldest name (Engelmann, 1850). Our U.S. varieties will likely eventually be treated as varieties under this name.

 var. chlorotica, Pancake Cactus / Pricklypear Synonyms: O. palmeri Engelmann ex Coulter 1896.

This is the northern variety, with yellow spines and green pads. Fruits are large and usually bright red.



Opuntia chlorotica Engelmann and Bigelow

O. chlorotica var. gosseliniana (Weber) Ferguson

Cactus and Succulent Journal (U.S.) 60: 159, 1988.

Original description: O. gosseliniana Weber, Bull. Soc. Acclim. France 49: 83, 1902. **Type locality: coast** of Sonora, Mexico. This is basically a petit version of var. *santa*rita in which the spines are even more slender, sometimes almost hair-like, and fruits average

even smaller. It is found in the Sonoran Desert and in tropical deciduous scrub, mostly further west or south than var. santa-rita. It occurs in the United Sates, but only in a limited area, and only some wild plants to the south and southwest of the Tucson area approach this variety. The garden cultivars named 'Tubac' and 'Pinta Rita' seem closer to this variety than to var. santa-rita.

Opuntia chlorotica Engelmann and Bigelow

O. chlorotica var. santa-rita Griffiths and Hare, Purple Pricklypear

New Mexico Agricultural Experiment Station Bulletin 60: 64, 1906. **Type locality:** Santa Rita Mountains, Arizona **Synonyms:** *O. shreveana* C.Z. Nelson 1915 This taxon is found in the western Sonoran Desert in Arizona, Sonora, and a little bit in Chihuahua and New Mexico. It is basically the same as var. *chlorotica* and may be the same color, but usually pads tend to bluish or purplish.

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Spines (if present) are usually more slender, often longer, and more often reddish or brownish in color. Fruits are smaller and more purplish or pinkish.

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Proceedings of the Biological Society of Washington 27(6): 28, 1914.

Type locality: Tumamoc Hill, Tucson, Arizona This is a common species in the Tucson area, and is known only from south-central Arizona into adjacent Sonora, and also from a small population near Las Cruces in New Mexico. It is a relatively low bushy species with rounded pads that tend to be grayish in color, with spines appearing black and white (actually deep brown and cream). The spines are produced in two arrangements, often on the same plant. Some pads will have three or more long stout angular spines radiating from the areoles, typically with some radiating small whitish spines around them. Other pads will have only the small spines and one or two whitish spines that point almost straight down. There are sometimes intermediate conditions. Glochids are often very prominent and usually dark reddish in color. The flowers are showy, opening yellow with fine orange veining, deepening in color as they age until orange or nearly red. When yellow firstday flowers are mixed with older varied-colored flowers, the show can be incredible.

The name comes from the fact that Joseph Nelson Rose confused David Griffiths' name "arizonica" for Tumamoc Hill plants that were of the wrong species, ones that Griffiths would later name as *O. confusa*.

Opuntia discata Griffiths, Disk Pricklypear; Bird-foot Pricklypear



Annual Report of the Missouri Botanical Garden 19: 266, 1908.

Type locality: Florida Canyon., Santa Rita Mountains, Arizona. This is a large and bushy, rigidly woody plant with wide rounded often bluish, and often "wavy" pads that have pale spines that are up to roughly an inch long. Spines are stout and radiate out in a distinctive "bird's-foot" pattern. Spines are fairly erect and do not curve back towards the pad. Flowers are bright yellow with deep green stigmas, but they

may change to red before they close. Fruits are rounded, often a bit lumpy, dark, and sweet. The plant is usually smaller than similar species such as O. engelmannii and O. orbiculata, but the pads are often larger. This is one of the species with hairy seedlings.

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Proceedings of the American Academy of Arts and Sciences 3: 291, 1856. **Type locality**: near Presidio, Texas.

Synonyms: *O. eocarpa* Griffiths 1916; *O. expansa* Griffiths 1916

A relatively large bushy species (sometimes, lower and spreading) with large pads for the size of the plant. It is often confused with immature specimens of *O. engelmannii*. It has spines, flowers, and fruits more like O. phaeacantha, but the flowers and fruits are larger. The areoles are small with neatly and tightly arranged glochids. On new pads, glochids typically occur in a tight central clump and a surrounding tight ring of different length. Spines tend to be whitish with brownish bases but can be dark or yellowish. This is a common species in the Tucson area.

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Opuntia engelmannii Salm-Dyck ex Engelmann

O. engelmannii var. engelmannii Engelmann Pricklyp

Boston Journal of Natural History 6(2): 207, 1850.

Type locality: between El Paso, Texas and Chihuahua, Chihuahua, Mexico.

Synonyms: O. recurvospina Griffiths 1916; ? O. procumens Engelmann and Bigelow 1856 [this could be an older name for O. arizonica instead, but type specimens and plants observed at the type locality - Aztec Pass - favor the specific epithet, engelmannii]. Many other names have been referred to this species that don't belong.

A name widely misapplied to nearly any large, medium-large, or bushy Opuntia of the U.S.A or northern Mexico. Other species are more abundant, but this one has a wide distribution and is easily observed due to its

large size. Mature plants are upright and 1-2.5 m tall and typically form a dense plant. Plants may be taller than wide, however some plants spread and are much wider than tall. It usually has obovate pads that have large areoles and a variable number of stout, flattened, spreading spines, usually with at least one erect main spine. Some plants may be quite spiny and others nearly spineless. Spines are usually white to yellowish or buff with darker bases. However, some plants may have entirely dark spines. The fruit is large ovoid, dark, juicy and sweet. Flowers bright yellow with faint orange veining (sometimes the flowers turn orange in age). Stigmas are green. Seedlings are hairy—a distinctive feature of some species.

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Opuntia engelmannii Salm-Dyck ex Engelmann

O. engelmannii var. flavispina (L.D.Benson) B.D.Parfitt & Pinkava Yellow-spine Pricklypear

Madrono 35(4): 348, 1988 [1989]. **Type locality**: Alamo Canyon, Ajo Mountains, Arizona.

Alternatively treated as *O. phaeacantha* var. *flavispina*. The status as a full species is not formally published. However, it is distinct, and we consider it to be a species. It is a moderately large, spreading, bushy plant. The pads are often yellowish-green and may look more yellowish because of the yellow spines.

The spines are yellowish to bright yellow, sometimes dark at the base, long, sometimes twisting, usually with most areoles having one erect or somewhat deflexed spine distinctly longer than the rest. The flowers are quite showy bright yellow. Hairy seedlings have not been seen, but lack of this trait is not verified.

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Opuntia gilvescens Griffiths, Bajada Pricklypear

Annual Report of the Missouri Botanical Garden 20: 87, 1909

Type locality: near Florida Canyon, Santa Rita Mountains, Arizona.

Perhaps there are more than one species or varieties included here, because there is variation over its large range, but the plants are similar overall. These are low, spreading, bushy plants, sometimes up to waste high, but more often half that, with relatively large pads that may turn purplish or brownish-purple when stressed. Small areoles are closer together than

in most of the other similar native species, with few relatively slender short spines. Spines are generally 2-3 cm long and typically some shade of white to brownish or gray in color.

The ovaries and fruit have more areoles than average (to match the pads). The flowers are large and often a bit ruffled, usually with pale green stigmas and often just a touch of brassy orange in the center.

This is a common widespread species that is always called something else. Seedlings are not hairy.

Opuntia laevis Coulter, Spineless Pricklypear, Glossy Pricklypear, Smooth Pricklypear, Tulip Pricklypear



Contributions from the U. S. National Herbarium 3: 419, 1896.

Type locality: Canyons, Santa Catalina Mountains, Arizona.

A distinctive nearly spineless species with mostly narrow, generally spineless pads, and longish, narrow fruit. It is known only from mountains of southern Arizona and northern Sonora. This taxon can be confused with O. *cañada*. The two are and often found together. However, the pads of O. cañada are wider and the fruit is rounder. Usually O. cañada is spiny. Seeds of O. laevis are generally larger. Seedlings are not hairy, whereas those of O. cañada may be hairy (?).

O. laevis often grows on rock outcroppings, canyon walls, or in the rubble at their base. People seem to like to give this cactus common names, there are numerous different ones published.3

summary

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Opuntia lubrica Griffiths, Smooth Pricklypear

Annual Report of the Missouri Botanical Garden 21: 169, 1910.

Type locality: near Alonso, San Luis Potosi. Synonyms: ?O. × andersonii H.M. Hernández, Hinostrosa and Bárcenas 2003 (This name seems to belong to a redescription of O. lubrica.).

There is an interesting puzzle here. Is this taxon native to the Tucson area or not? It is highly variable here (pads varying from green to purple), but it does grow wild over a fairly large area. Could it be a hybrid of O. microdasys with other native species? It is much like O. rufida in appearance, but larger on average, and the

flowers are larger. The epidermis is smooth and fairly shiny, and the glochids are mostly yellow to orange or rusty red, instead of white to dark reddish brown or black of O. rufida. The species was described from northeastern Mexico, where it could also be derived from O. microdasys hybridizing with other species (perhaps O. cacanapa?). It is unclear whether Mexican and Arizona populations are the same, but they are quite similar. Mexican plants are bright green and sometimes a bit yellowish. Some plants have a few thin yellowish spines. Both Mexican and native plants are grown in gardens in the Tucson area.

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Opuntia macrocentra Engelmann, Black-spine Pricklypear

Proceedings of the American Academy of Arts and Sciences 3: 292, 1856 [1857]. **Type locality**: El Paso, Texas. **Synonyms**: *O. violacea* (Engelmann) B.D. Jackson 1895

This species can sometimes be difficult to differentiate from most varieties of *O. azurea* (not found in the Tucson area), but generally the pads have more areoles and thicker spines that are often even blacker. The two-tone yellow and red flowers average more intense in coloring. It occurs mostly north of Mexico from West Texas and New Mexico to southeastern Arizona. A majority of similar garden plants are *O. azurea*. The name "Opuntia violacea" is commonly applied to almost any purplepadded pricklypear, but is properly considered only a synonym of this species.

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Opuntia orbiculata Salm-Dyck ex Pfeiffer, Round-pad Pricklypear



Enumeratio diagnostica cactearum hucusque cognitarum 156, 1837.

Type locality: unknown; incorrectly cited as "Chile"; original plants of a type found in southwestern North America; perhaps from northern Mexico.

Synonyms: ? O. crinifera Salm-Dyck 1837; ? O. crinifera lanigera Pfeiffer 1837; ? O. senilis J. Parmenteer ex Pfeiffer; ? O. cantabrigiensis Lynch 1903 [a confused and apparently widely misapplied name]; O. dillei Griffiths 1909

This species is common and widespread in northern Mexico and the southwestern US. This is a large bushy species with mostly rounded

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pads (only occasionally wavy) that may be dark, bluish or sometimes yellowish green. Areoles are small except on spiniest plants, with glochids usually short and neat on younger pads. Spines are relatively slender and relatively short (usually not much over 1 inch) and one or few (or none) per areole. Spine color varies, but they are typically yellowish or whitish, often with darker bases. Glochids are usually dark. This is confused with *O. engelmannii* in Arizona and New Mexico and with *O. lindheimeri* in Texas.

It ranges from the greater Dallas area to the mountains of southern California and Nevada. This is one of the species with hairy seedlings.

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Opuntia phaeacantha Engelmann, **Brown-spine Pricklypear**

Memoirs of the American Academy of Arts and Science n.s. 4(1): 51, 1849. Type locality: near Rio Grande, west of Santa

Fe, New Mexico.

Synonyms: O. phaeacantha var. nigricans Engelmann 1856; *O. phaeacantha* var. *piercei* Fosberg 1934, Many other names have been referred to this species that don't belong/ This has been the catch-all name for almost

everything that is smaller than O. engelmannii. The real plant is low, spreading, and small. It is not at all woody (unlike many species of similar or larger size). It usually doesn't shrivel much in

winter as some of the even smaller northern species, but can become limp and flop over on its sides in very cold temperatures. Areoles are small and moderately far apart on obovate or round pads that are often dull green. Spines vary tremendously in color, but pale tips with brownish bases are normal.

Flowers vary a lot in color too, but yellow is most common, often with orange or red centers. It is widespread in all but the hotter parts the Sonoran and Mojave Deserts in Arizona, but becomes rare at lower hotter elevations.

Opuntia pottsii Salm-Dyck

O. pottsii var. *pottsii*, Potts Pricklypear, Delicate Pricklypear

Cacteae in Horto Dyckensi Cultae Anno 1849 236, 1850.

Type locality: near Chihuahua, Chihuahua, Mexico.

This is a small clumping plant with an enlarged tuberous taproot that often reproduces by slender rhizomes, found mostly in silt flats, grasslands and mountain woodlands. The pads vary in shape and color depending on the variety. Every population looks a little different, and the species is found statewide except in the Sonoran Desert in the southwest.

This species is usually misidentified in Arizona as *O. macrorhiza*, but that is a low creeping species, mostly found on sand, which is not verified to occur in Arizona (it may enter Apache County near Zuni, NN or north of Kayenta, but no plants have been seen. It does not occur near Tucson).

• var. *pottsii*, Potts Pricklypear, Delicate Pricklypear

Synonyms: *O. filipendula* Engelmann 1856; *O. ballii* Rose 1911; *O. delicata* Rose 1911.

Small flowers with slender ovaries tend to not open widely, usually have pale whitish stigmas, and vary in color from yellow (often red in middle) through oranges and pinks to pure red or magenta. Slender fruits are usually somewhat stipitate and vary in color when ripe from green or yellowish to deep purplish red, but are most often orangey or pinkish. A thick elongate central taproot is characteristic.

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Opuntia pottsii Salm-Dyck

O. pottsii var. montana (Engelmann) Bulot, Mountain Pricklypear





Succulentes 25, numero special: 40, 2002. Type locality: Sandia Mountains, New Mexico. Synonyms: *O. plumbea* Rose 1908; *O. loomisii* Peebles 1939.



Mountain plants with wide pads and shorter ovaries can be referred to as *O. pottsii* variety *montana*. This variety usually has a wide, often nearly globe-shaped central taproot.

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Opuntia riparia Griffiths, Arroyo Pricklypear

Proceedings of the Biological Society of Washington 27(6): 26, 1914. Type locality: above Florida Canyon., Santa Rita Mountains, Arizona.

This species is found near the upper edge of the desert from north of Phoenix to Superior and south to near Nogales; perhaps into Sonora and also near Alamogordo, NM. *O. riparia* is roughly a smaller version of *O. engelmannii*, about half the size, but with usually distinctly narrow pads, narrower fruits and larger seeds. There are usually spines that are stout and spreading in all of the areoles, usually white and often with darker bases. Plants average up to waist high, and often grow into sprawling thickets.

It is the most abundant wild pricklypears in the area of Boyce Thompson Arboretum. While only occasional in the Tucson area, it can be quite abundant in the rapidly developing northeast part of the city. It does not have hairy seedlings.

Opuntia tortispina Engelmann and Bigelow, Desert Grassland Pricklypear, Twist-spine Pricklypear

Proceedings of the American Academy of Arts and Sciences 3: 293, 1856 [1857]. **Type locality**: Camanche Plains [site of present day Lake Meredith near Borger, Texas]. **Synonyms**: *O. charlestonensis* Clokey 1943 [There is evidence that this is of hybrid origins.] This taxon is similar to *O. cymochila* (a more northeasterly species) on one hand, and to O. phaeacantha on the other. Flowers and fruits are like those of *O. phaeacantha*. The flowers are varied in color, often with darker centers, and with stigmas always green (stigmas are

often pale green to white in *O. phaeacantha*). Compared to *O. phaeacantha* this species averages smaller with areoles closer together, spines more numerous and a bit less stout, flowers larger, and fruit smaller.

This is primarily a grassland species, widespread in all but the Sonoran and Mojave Desert parts of Arizona. In the Tucson area it is occasional in the grasslands of more level areas to the east and at higher elevations. Despite the name, it no more often has twisted spines than do most other species.



Contributions from the U. S. National Herbarium 12: 402, 1909.

Type locality: Tumamoc Hill, Tucson, Arizona. This is another smaller *Opuntia* that is lumped into *O. phaeacantha* because guide books to not describe it. It is a spreading somewhat bushy plant, not too tall, averaging about knee high, with pads relatively large for its stature. It is common in the greater Tucson area, but seems to grow nowhere else. Pads are usually distinctly longer than wide and obovate, but they

are occasionally roundish. Areoles are widely spaced and small on younger pads. Larger spines are usually distinctly brownish, and one or sometimes more spines are distinctly longer than the others and point straight out from the areoles. The longer spines are often twisting and often over 2 inches/5cm long. Flowers are relatively large and yellow, sometimes orange or red in the center. Fruits are similar to those of 0 *phaeacantha* and *O. camanchica* but average larger and a bit narrower

Opuntia valida Griffiths, Valida Pricklypear

Proceedings of the Biological Society of Washington 27: 24, 1914.

Type locality: near San Antonio, New Mexico. Plants of this type are rarely found in the immediate Tucson area, but are more commonly seen in lower mountains and sometimes in the desert to the north and west. They can be abundant in the Organ Pipe, Phoenix, and Kingman areas. Typical plants occur in the Rio Grande and Pecos drainages in New Mexico and Texas. Arizona plants tend to be somewhat lighter in spine, glochid, and areole coloring than eastern plants, and spines may be more slender and longer on average. However, the two are quite similar otherwise.

These are generally medium-large stiff bushes about 1 to 1.5 m high and wide, with pads longer than wide, typically obovate but often rhomboid, often bluish, with several relatively stout flattened longish spines per areole, and with spines increasing in number and length on older trunks. Trunks of *O. engelmannii* become less spiny

with age, while they become more so on O. valida. In the Tucson area O. engelmannii tends to be a larger and taller plant, but with somewhat smaller and thicker pads. Fruits on *O. valida* tend to be more elongate with a sharper rim at the top, often somewhat spiny, and often earlier ripening.

Introduced Species

Opuntia lindheimeri Engelmann, Texas Pricklypear

Boston Journal of Natural History 6: 207, 1850.

Type locality: New Braunfels, Texas.

Synonyms: *O. ferruginispina* Griffiths 1908; *O. linguiformis* Griffiths 1908; *O. subarmata* Griffiths 1909 [This last could be considered as a distinct robust variety from near-desert areas.] Many other names have been referred to this species that don't belong.

O. lindheimeri is similar to *O. engelmannii* with the same growth habit, but a bit "softer" and more inclined to flop over during drought or severe cold. Pads are usually a richer green, and spines (if present) are yellow, sometimes reddish at the base (or reddish with yellow tips). Flowers are typically a deeper brighter yellow (or they may occasionally be bright orange or red). Fruit is more likely to have a neck, more likely to be rounded at the top instead of pitted, and less likely to have a waxy bloom. They are also of a more sour flavor. This species is found naturally almost entirely east of the Pecos River in New Mexico and Texas, but it is a common garden plant in Tucson, and is sometimes seen growing as if native, especially along arroyos where there is more moisture. This is one of the species with hairy seedlings.

The garden cultivar 'Linguiformis' - the 'Cow's Tongue' or 'Lengua de Vaca' - is a mutant form with indeterminate stems that can revert to normal growth. There is also a robust nearly spineless cultivar of this species commonly grown in gardens that was the basis for David Griffiths' *Opuntia subarmata*.

summary

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Opuntia microdasys (Lehmann) Pfeiffer, Bunny Ears

Cactus microdasys Lehmann, Semina in Horto Botanico Hamburgensi o Index Seminum (Hamburg) 16, 1827. Enumeratio Diagnostica Cactearum 154, 1837. Type locality: Hidalgo, Mexico.

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Synonyms: *O. pulvinata* De Candolle 1828; *O. macrocalyx* Griffiths 1908 Everyone knows the "Bunny Ears". It is sometimes found growing in wild patches as if it is native.

Tucson Area Opuntia

Garden Species

Opuntia woodsii, garden plant (Photo taken from the webbsite

Tucson is an ideal climate for growing most Prickypears, and many species of *Opuntia* are grown in area gardens and landscapes. Conceivably almost any of them could turn up growing as if wild, particularly in a place where garden waste has been dumped in the past. In general though, plants found growing in the wild are native species. Some of the most commonly grown non-

native species include the following, but there are many more: • O. aciculata (incl. O. flexospina)

- O. azurea
- O. bergeriana
- bonaerensis (usually called О. 0. paraguayensis)
- O. cacanapa cv. 'Ellisiana'
- O. (Nopalea) cochenillifera
- O. cv. 'Old Mexico' (species unknown, it shows similarities to O. gomei, but perhaps is more related to O. dillenii. It is basically

spineless with huge wavy and undulateedged pads.)

- O. dillenii
- O. elata
- O. ficus-indica (incl. O. megacantha and several other synonyms and cultivars)
- O. gomei (usually mislabeled as O. alta)
- O. leucotricha
- O. monacantha
- O. pilifera
- O. polyacantha (mostly plants of var. erinacea [or ursina types])
- O. quimilo (= O. distans)
- O. robusta
- O. rufida
- O. scheeri
- O. stenopetala
- O. streptacantha O. tomentosa
- O. vaseyi
- O. woodsii

Opuntia rufida, flower of a garden plant (Photo taken from the webbsite www.opuntiads.com

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