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- Cotton worm and boll worm.—Riley.
- office of experiment stations. b 1, 13, 25 6, circulars 11, 30, Record, i, ii. 5-8, 10, 12, iii. 12, iv-vii, 1-4, 6, 7, Farmers' b, 1, 3-31, 33- 6, 38, '9, — division of forestry, b '7, 9-11, annual r '87, '91-'93, Information to wood consumers, circulars 5-7, 10, 1', 13,
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Genus ANHALONIUM Lemaire.
ANHALONIUM ENGELMANNI Lem. A remarkable, spineless cactus, aptly called the Living Rock, found in Texas and Mexico. "Upper and exposed part of tubercle triangular in outline, convex, carinate and almost smooth below, convex and variously fissured and thereby verrucose above, sharp and crenate on the edges."--Engelmann.
 A. fissuratum is the valid name, 30 to 50c

Genus ARIOCARPUS Scheldw.
 A. prismaticum 30c to 1 00
Genus ASTROPHYTUM Lemaire.
ASTROPHYTUM MYRIOSTIGMA Lem.
CACTUS DENSPINUS Coulter.

Genus CERESUS Haworth.
CERESUS BERLANDIERI Engelm.
CERESUS CAESPITOSUS Engelm. The Lace Cactus, a beautiful little species, found in Texas and Mexico, with large magenta colored flowers, blooming when only 2 inches high, the flowers 2 inches across, and lasting 2 days. The plant is enveloped with fine white spines, and can be "handled without gloves."
CERESUS CHLORANTHUS Engelm.
CERESUS COCHAL Griseb.
CERESUS COLUBRINUS Otto.
CERESUS DASYACANTHUS Engelm.

THE VELVET CACTUS.

CEREUS EMORYI Engelmann. This is one of the best-known of California cacti, the slender, thickly-set yellowish spines giving it a peculiarly beautiful appearance. The spines on the young joints are shorter, soft and flexuous; the flowers are yellowish, followed by a small edible fruit.

CEREUS ENGELMANNI Parry. Heads several (sometimes, though rarely, a hundred,) 4 to 12 inches high, cylindrical or ovate, with 11 to 13 ribs bearing bunches of about 12 pale radiating spines, and about 4 darker (yellow, brown or black), stout and angular, straight or curved central spines, 1 to 3 inches long. Flowers very numerous, bright magenta, often 4 inches across, followed by delicious fruits, with much the same flavor of a strawberry, red, pulpy, filled with black seeds. Utah, California, Baja California and Arizona.

C. Engelmanni Varius forms occur with beautifully colored spines 50c o 2 00

CEREUS ENNEACANTHUS Engelm.

CEREUS ERUCA Brandegee.

CEREUS FLAGELLIFORMIS Haworth. The well-known whip-cord or Rat's-tail Cactus, so useful in hanging baskets or for grafting on columnar species; the bright rose-colored flowers are extremely attractive.

C. cernuatus. 50c up.

CEREUS GIGANTEUS Engelm.

CEREUS GREGGII Engelm.

QUEEN OF THE NIGHT.

CEREUS GRANDIFLORUS Haworth. "The night-flowering cereus has gained a fame which entitles it to prominent notice, and plants might well be included in every garden, for its flowering is a source of interest to the least observant persons."—Castle.

CEREUS GUMMOSUS Engelm.

C. hamatus.

CEREUS HOPPENSTEDTI.

CEREUS MAC DONALDIAE Hook. A handsome slender-stemmed species, of Honduras, Central America, and one of the finest of the night-flowering cacti. Flowers 12 to 14 inches across, with creamy white lanceolate petals, with an outer fringe of narrow yellow sepals; with a fragrance like vanilla.

CEREUS MARITIMUS M. E. Jones.

CEREUS MOJAVENSIS Engelm.

CEREUS PECTINATUS Engelm.

Cereus pecten-aboriginum 2½ ft high 10 00

CEREUS POLYACANTHUS Engelm.

CEREUS PRINGLEI S. Watson.

CEREUS PUGIONIFERUS Lem.

CEREUS RIGIDISSIMUS Engelm.

CEREUS SARGENTIANUS Orcutt.

CEREUS SCHOTTII Engelm.

CEREUS SENILIS Salm-Dyck.

OLD MAN CACTUS.

CEREUS STRAMINEUS Engelm.

CEREUS THURBERI Engelm.

CEREUS TRIANGULARIS Miller. The Strawberry Pear bears most beautiful flowers scarcely less handsome than *C. grandiflorus*, measuring 12 to 14 inches across; the bright scarlet fruit, the size of a goose's egg, has a flavor compared to strawberries; the plant is easily distinguished by its triangular stems, and makes a most luxuriant growth, climbing readily to the top of its support.

CEREUS TUBEROSUS.

CEREUS VARLABILIS Pfeiffer.

CEREUS VIRENS DC.

CEREUS VIRIDIFLORUS Engelm.

Genus ECHINOCACTUS Link & Otto.

ECHINOCACTUS BICOLOR Gal.

ECHINOCACTUS BREVIHAMATUS E.

ECHINOCACTUS CALIFORNICUS Mon.

ECHINOCACTUS CHRYSACANTHUS O.

ECHINOCACTUS COPTONOGONUS Lm.

ECHINOCACTUS CORNIGERUS DC.

ECHINOCACTUS CRISPATUS DC.

ECHINOCACTUS CYLINDRACEUS E.

ECHINOCACTUS EMORYI Engelm.

ECHINOCACTUS ERBCTOCENTRUS C.

ECHINOCACTUS HORIZONTHALONUS Lem

ECHINOCACTUS INTERTEXTUS Em.

ECHINOCACTUS JOHNSONII Engelm.

ECHINOCACTUS LECONTEI Engelm.

ECHINOCACTUS LIMITUS Engelm.

ECHINOCACTUS LONGIHAMATUS Gal.

ECHINOCACTUS MCDOWELLII Rebut.

ECHINOCACTUS MULTICOSTATUS.

ECHINOCACTUS ORCUTTI Engelm.

ECHINOCACTUS POPYRACANTHUS E.

ECHINOCACTUS PENINSULAE Eng.

ECHINOCACTUS POLYACANTHUS EB

ECHINOCACTUS POLYCEPHALUS E-B

ECHINOCACTUS SCHEERII Sm-Dyk.

ECHINOCACTUS SETISPINUS Engelm.

ECHINOCACTUS SILERI Engelm.

ECHINOCACTUS SIMPSONI Engelm.

ECHINOCACTUS SINUATUS Dietr.

ECHINOCACTUS TEXENSIS Hoepf. Depressed, 13 to 27 acute ribs; spines stout, annulated, 6 to 7 radical ones and a stronger central spine; flowers rose colored; fruit subglobose, pulpy, red, covered with spiny bristles and soft wool, crowned by the wooly remains of the flower.

ECHINOCACTUS TROLLIETI Rebut.

ECHINOCACTUS UNCINATUS Gal.

ECHINOCACTUS UNGUISPINUS Engm

ECHINOCACTUS VIRIDESCENS Nutt.

The Turk's Head cactus, that occurs at San Diego, California; very variable, but usually depressed, less than a foot in diameter, with strong, annulated reddish spines; 13 to 21 ribs; fruit greenish or sometimes tinged with magenta, very sour, enclosing numerous black seeds.

ECHINOCACTUS WHIPPLEI E. & B.

ECHINOCACTUS WISLIZENI Engelm.

Genus ECHINOCERUS Engelmann.

Genus ECHINOPSIS Zuccarini.

THE HEDGEHOG CACTUS.

ECHINOPSIS MULLERI. A hybrid, of rapid growth, blooming early, and with its large satiny rose-colored flowers is justly called the finest of its class.

ECHINOPSIS EYRIESII ZUCC. This is less brilliant in appearance than *E. Mulleri*, but produces lovely pure white flowers in great abundance.

Genus EPIPHYLLUM Pfeiffer.

EPIPHYLLUM TRUNCATUM Haw.

Genus LEPISIUM Pfeiffer.

Genus LEUCHTENBERGIA Fisch.

LEUCHTENBERGIA PRINCIPIS Fisch.

Genus LOPHOPHORA Coulter.

LOPHOPHORA WILLIAMSI Coulter.

Genus MALACOCARPUS Salm.

Genus MAMMILLARIA Haworth.

MAMMILLARIA ALVERSONI Hort.

MAMMILLARIA ARIZONICA Engelm.

MAMMILLARIA BARBATA Engelm.
M. Bequini, 50c
 MAMMILLARIA BOCASANA Poselg.
M. candida, covered with soft white spines, \$1
M. cornifera, 40c to 75c
 MAMMILLARIA DECIPIENS Schw.
 MAMMILLARIA DOLICHOCENTRA Lm
 MAMMILLARIA ECHINUS Engelm.
 MAMMILLARIA ELEGANS DC.
 MAMMILLARIA ELEPHANTIDENS Lem.
 MAMMILLARIA FULVISPINA Haw.
 MAMMILLARIA GABBII Engelm.
 MAMMILLARIA GLOCHIDIATA Mart.
 CALIFORNIA FISH-HOOK CACTUS.
 MAMMILLARIA GOODRIDGII Scheer. A small globular species, closely set with brownish or white spines, the central one curved into a hook. The delicate yellowish white flowers are succeeded by the club-shaped, scarlet berries that possess the flavor of wild-wood strawberries, and are sometimes called "hep-pitalas," the "llayina" of the Mexicans.
 MAMMILLARIA GRAHAMII Engelm. Plant 1 to 3 inches high, subglobose, simple or branching from the base; tubercles ovate, axils naked; radial spines in one series, 20 to 30 in number, 3 to 6 lines long, rigid and whitish, surrounding a stouter and longer hooked, brown one. Flowers small, nearly 1 inch wide, reddish; berry oval, green, with small pitted seeds. The well-known "Arizona Strawberry" or small Fishhook Cactus of N. M., Arizona and Utah, rare in California.
 MAMMILLARIA HALEI Brandegee.
 MAMMILLARIA HEYDERI Muehlenpfl.
 MAMMILLARIA LASIACANTHA Engelm.
 MAMMILLARIA MACROMERIS Engelm.
 MAMMILLARIA MELIACANTHA Engelm.
 MAMMILLARIA MENZIESII Engelm. A very Mexican species, cylindrical, forming numerous heads around the base, which readily take root when detached. About 20 slender white spines radiate from the center of each hemispherical tubercle, enveloping the plant like a bit of delicate lace; no central spine.
 MAMMILLARIA PECTINATA Engelm.
 MAMMILLARIA PHELLOSPERMA E.
 MAMMILLARIA PONDII Greene.
 MAMMILLARIA PUSILLA Sweet.
 MAMMILLARIA ROSEANA Bndg.
 MAMMILLARIA SCHEERII Muehlplf.
 MAMMILLARIA SENNII Ledeb.
 MAMMILLARIA SPINOSISSIMA Lem.
 MAMMILLARIA STEUBLA-AURATA Ml.
 MAMMILLARIA STROBILIFORMIS Shr.
 MAMMILLARIA UNCINATA Zucc.
 MAMMILLARIA WILCOXI Tournemey.
 MAMMILLARIA WRIGHTII Engelm.
 Genus MELOCACTUS De Caudole.
 MYRTILOCACTUS GOMETRIZANS C
 Genus NOPALEA Salm.
 NOPALEA AUBERI Salm-Dyck. A Cuban cactus, of rapid growth, assuming a tree-like form, and bearing numerous rose-colored flowers with exsert stamens; the branches armed with stout spines; readily grown from cuttings.
 NOPALEA COCCINELLIFERA Salm.
 Genus OPUNTIA Tournefort.
 OPUNTIA ACANTHOCARPA E. & B.
 OPUNTIA ANGSTATA E. & B.
 OPUNTIA ARBORESCENS Engelm.
 OPUNTIA ARENARIA Engelm.
 OPUNTIA BASILARIS Engelm. & B gelow.
 Low; joints 5 to 8 inches long, triangular,

proliferous from their base, pubescent, unarmed, but beset with numerous dense fascicles of short brownish bristles, as is also the ovary. Flowers large, 2½ to 4 inches in diameter, bright magenta, and very numerous; fruit dry, with large and thick seeds.
 Var RAMOSA Parish. In cultivation the typical form becomes branched like the variety. One of the most satisfactory cacti that we know for an amateur's collection, flowering profusely and growing readily. In the deserts of California, Arizona, Nevada and Mexico, the whole plant sometimes assumes a brownish red, but in cultivation it seems to maintain a glaucous green color.
 OPUNTIA BERNARDINA Engelm.
 OPUNTIA EIGELOVII Engelm.
 OPUNTIA BRACHYARTHRA E. & B.
 OPUNTIA BRASILIENSIS Haw.
 OPUNTIA CHLOROTICA Engelm.
 OPUNTIA CURASSAVICA Mill.
 OPUNTIA CYLINDRICA DC.
 OPUNTIA DAVISHII E. & B.
 OPUNTIA DULCIS Engelm.
 OPUNTIA ECHINOCARPA E. & B.
 OPUNTIA EMORYI Engelm.
 OPUNTIA ENGELMANNI Slim-Dyck.
 OPUNTIA FICUS-INDICA Mill.
 OPUNTIA FRAGILIS Haw.
 OPUNTIA FULGIDA Engelm.
 OPUNTIA FULVISPINA Slim-Dyck.
 OPUNTIA GLAUCOPHYLLA Wendl.
 OPUNTIA GRAHAMII Engelm.
 OPUNTIA GRANDIS Hort.
 OPUNTIA INVICTA Brandegee.
 OPUNTIA LEPTOCAULIS D C. This is the widely advertised *O. frutescens*, Engelm., of Texas and Mexico; 2 to 4 feet high, with slender terete joints a fourth of an inch thick; very small yellow flowers; berries scarlet. Quite ornamental and a favorite with cactus fanciers.
 OPUNTIA LURIDA Hort.
 OPUNTIA MACROCENTRA Engelm.
 OPUNTIA MACRORHIZA Engelm.
 OPUNTIA MAMILLATA Schot.
 OPUNTIA MICRODASYS Pfeiff.
 OPUNTIA MONACANTHA Haw.
 OPUNTIA NIGRICANS Haw.
 OPUNTIA OCCIDENTALIS Engelm. A Prickly Pear of luxuriant growth, with stout woody stems and innumerable branches; joints 9 to 12 inches long and 6 to 8 inches across; flower yellowish and orange; fruit 2 inches long, very sour and juicy.
 THE CHOLLAS.
 A former characteristic of Southern California landscapes were the thickets of cholla cactus, which still decorate some of our unenclosed hillsides, and abounds in the desert regions and unsettled parts of Lower California and Mexico. The cholla belongs to the same genus as the prickly pear, but differs mainly in the cylindrical, instead of flat, joints and in its non-edible fruits.
 OPUNTIA PARISHII Orcutt.
 OPUNTIA PHAEACANTHA Engelm.
 OPUNTIA PROLIFERA Engelmann. This densely-branching shrub bears a small flower of a pomegranate purple, and once grew in great abundance where the city of San Diego now exists.
 OPUNTIA RAFINESQUII Engelm.
 OPUNTIA ROSEA DC.
 OPUNTIA RUFIDA Engelm.
 OPUNTIA RUTILA Nutt.

- OPUNTIA SENILIS Roehl.
 OPUNTIA SERPENTINA Engelm. Procumbent, with yellow flowers, comparatively rare in cactus collections.
 OPUNTIA SUBULATA Engelm. A beautiful tropical species of rapid and rank growth, with persistent vivid green leaves, and long, straight spines.
 OPUNTIA TENNISPINA Engelm.
 OPUNTIA TESSELLATA Engelm.
 OPUNTIA TUNA Mill.
 OPUNTIA VULGARIS Mill.
 OPUNTIA WHIPPLEI E. & B.
 Genus **PELECYPHORA** Ehrenb.
 PELECYPHORA ASELLIFORMIS Ehrenb.
 Genus **PFEIFFERA** Salm.
 PERESKIA ACULEATA Mill.
 Genus **PHYLLOCACTUS** Link.
 PHYLLOCACTUS ACKERMANNI Walp.
 PHYLLOCACTUS ANGULIGER Lem.
 PHYLLOCACTUS CRENATUS Walp.
 PHYLLOCACTUS KAMPFMANNI Hort.
 QUEEN CACTUS.
 PHYLLOCACTUS LATIFRONS Walp.
 PHYLLOCACTUS WRAYI Hort.
 Genus **PILOCEREUS** Lemaitre.
 Genus **RHIPSALIS** Gaertn.
 RHIPSALIS CASSYTHA Gaertn.
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 AMNICOLA LONGINQUA Gld.
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CENTURY PLANTS.

The agaves form a beautiful class of decorative plants, tropical in aspect, and belong to the amaryllis family, though often erroneously considered as belonging to the cactus family. They are called century plants from another popular fallacy, that they require 100 years before blooming. In tropical countries they attain maturity, blossom and die, in less than twenty years usually.

AGAVE AMERICANA Linnaeus. The mescal plant of Mexico, from which a useful fibre is secured. Pulque, the national drink of Mexico, is produced mainly from this plant, and the juice is also distilled into an alcoholic beverage known by the name of mescal. Thousands of acres are devoted to its cultivation in Mexico, where it ranks with corn, wheat and beans in commercial importance. It makes rapid growth, attaining to a large size, and in the United States is largely planted for its decorative value.

Var. **VARIEGATA** Hort. Large, broad leaves, margined with white, the finest of many forms in cultivation.

AGAVE CORDEROYI Versch. A very beautiful Mexican species.

AGAVE DECIPIENS. Tall growing, deep green foliage.

AGAVE DESERTI Engelm.

AGAVE FLORIDA Lem.

AGAVE LECHECUILLA Torr.

AGAVE MARGARITAE Brandege. A recent introduction from the islands of Lower California, and one of the handsomest of the smaller growing agaves.

AGAVE MICRACANTHA Slim-Dyck.

AGAVE PALMERI Engelm. A very symmetrical species, found in the mountains of Southern Arizona.

AGAVE FARRYI Engelm.

AGAVE PRINGLII Engelm.

AGAVE SHAWII Engelm. Very compact, dark olive-green leaves, margined with stout spines. Peculiar to the coast region of Southern and Lower California.

AGAVE STIPATA Zucc.

AGAVE UNIVITTATA Haw.

AGAVE UTAHENSIS Engelm.

AGAVE VICTORIAE-REGINAE T. Mee.

AGAVE XYLONACANTHA Slim-Dyck.

AGAVE americana L. 0.50

-v. milleri, glaucous form 20c- 1.00

-v. variegata 1.00

applanata 1.00

atrovirens, Karst 70

attenuata, Salzm 1.00

besseriiana—see macrocantha

enge manni Trelease 1.00

espadilla (v. o. x. lanceolata?) 1.50

ferox, C. Koch (xylocantha?) 2.00

geminiflora Ker-Gawl 1.00

giesbreghtii, K. Koch 1.00

gilbeyi Hort. (horrida) 40c-

macrocantha, Zucc. 1.00

maculata Regel ["Texana"] 50

potatorum Zucc. 1.00

rigida Willd —

v. saliana 25

salmiana Otto—see atrovirens.

subulata? 1 00

sulcata? 2 00

verschaffeltii Lem. 1 00

ALOE AFRICANA Mill.

ALOE ARBORESCENS Mill. This very fine species throws up a flower spike three feet high, orange red flowers.

ALOE BABELIFOLIA Mill.

ALOE CILIARIS Haw. A climbing South African species; produces a profusion of orange scarlet flowers.

THE PARTRIDGE-BREAST ALOE.

ALOE VARIEGATA Linnaeus. An African plant of great beauty, producing spikes of brilliant coral red flowers. It is found in many old-fashioned gardens and receives its common name from the feathery mottling of the leaves.

CARAGUATA LINGULATA Lindl.

Genus **COTYLEDON** Linnaeus.

FAIRY FINGER TIPS.

COTYLEDON ATTENUATA Watson. This dwarfish plant is destined to attain great popularity for beds and borders. It was discovered in Lower California in 1886 by C. R. Orcutt, and first introduced into cultivation in 1894. It resembles dwarf *C. Edulis*, and produces panicles of pretty yellowish or ice purple flowers that do not detract from its adaptability for borders or edging to beds.

C. CALIFORNICA Baker. A very symmetrical, small-growing species especially valuable for bedding purposes.

C. DESMETIANA Hemsl. An exceedingly beautiful Mexican species, quite rare in collections.

C. EDULIS Brewer. This sometimes grows two feet across and bears a tall panicle of greenish flowers. It has become widely known under the name of "Finger Tips," from the long, slender leaves, which the Indians of California formerly used as a salad.

C. FARINOSA Benth. & Hook. Leaves rich vivid green, sometimes splashed with red; the clusters of brilliant red flowers, with a faint glow of yellow at the centers, are quite showy.

C. LANCEOLATA B. & H. A plant that does well under good treatment, producing a spike of red flowers. The lanceolate flat leaves sometimes of a dull crimson color, but commonly green.

C. LAXA Benth. & Hook. Leaves curiously twisted; flowers red, or yellowish in some forms.

C. LINEARIS Greene. A near ally to *C. lanceolata*, with greenish yellow flowers. Baja California.

C. NEVADENSIS Watson. Flowers yellow, tinged with red; occurs in the Yosemite valley.

C. ORBICULATA Linnaeus. An old-fashioned garden plant, attaining to a tropical luxuriance of growth and producing large pendulous orange-colored flowers of great persistence.

COTYLEDON ORCUTTII Greene.

C. PULVERULENTA Baker. Leaf elegant in form, the broad leaves forming a beautiful rosette and covered with a thick white sand.

C. SECUNDA Baker. A showy and very symmetrical Mexican species, very useful in beds and borders; showy red flowers; of quick growth.

COTYLEDON VISCIDA S. Watson.
TRASSULA FALCATA Wendl. A South American plant, grayish in color, producing gorgeous panicles of brilliant red flowers.

DASYLIRION Zucc.
 Yucca-like, and very choice ornamental plants, belonging to the lily family, with narrow, grass-like leaves.

D. Bigelovii Torr.—See *Nolina Bigelovii*.
D. GLAUCOPHYLLUM Hook. A low growing, spiny, Mexican species.

D. longifolium Zucc.—See *Nolina longifolia*.
BORYANTHES PALMERI W. Hill. Australian Torch Lily; red and white; 8 feet high; a plant of marvelous beauty.

DRACAENA DRACO Linn. The Dragon-blood tree of the Canary Islands; an imposing feature in scenic horticulture; a celebrated one at Oriana was estimated by Humboldt to be 600 years old; yields the Dragon-blood resin.

ETHELGRUBIA SPLENDENS Eoj.
PURCRAEA BARILLETTI Jacobi.

GASTERIA MACULATA Jacq.

STAPELIA FUSCATA Jacq.

STAPELIA PULCHELLA Mass.

STAPELIA TRISULCA Donn.

Genus MESEMBRYANTHEMUM Linn.

MESEMBRYANTHEMUM AEQUILATERALE. Haworth. Beach Strawberry or Sea-apple. An Australian and West American creeping plant, spreading readily over saline ground, whether clayey, sandy or rocky. "Sheep are very fond of this succulent plant, and require but little water when browsing on it; or in cold coast districts they will do without any water, even in summer, while thriving well on the foliage." The brilliant red flowers are very fragrant, followed by large, sweet and delicious fruit, faintly suggestive of a strawberry. An ornamental plant, easily grown from cuttings.

Plants, 25 cents each.

MESEMBRYANTHEMUM CRYSTALLINUM
MESEMBRYANTHEMUM NODIFLORUM L
Genus NOLINA Michx.

NOLINA BIGELOVII Watson. Leaves flat, rough margined, an inch or more wide; with age attains a height of eight or ten feet; produces heavy panicles of small whitish flowers.

NOLINA LONGIFOLIA Hemsl. A Mexican species; the bright green, drooping leaves several feet long; grows ten feet high.

NOLINA PARRYI S. Watson.

ROCHEA FALCATA DC. See *Crassula falcata*.

STAPELIAS, OR "TOAD CACTUS."

STAPELIA ASTERIAS Mass.

STAPELIA CONSPURCATA Willd.

STAPELIA GRANDIFLORA Mass.

STAPELIA MARMORATA Jacq.

STAPELIA PICTA Donn.

STAPELIA VARIEGATA Linnaeus.

These curious plants, native to South Africa, belong to the *Asclepias* (or milkweed) family, but are popularly known by the names "toad cactus," or "carrion cactus," the former from the mottled color of the flower of the best-known variety, the latter from the strong fetid

Genus YUCCA Linnaeus.

YUCCA ALOIFOLIA Linn.

YUCCA BREVIFOLIA Engelm.

YUCCA MACROCARPA Engelm.

YUCCA MOJAVENSIS Sargent.

YUCCA VALIDA Brandegee.

YUCCA WHIPPLEI Torr.

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