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among a hundred is but little over an inch in height and diameter, and in earlier days they were literally worth their weight in gold. The flowers are open only in sunlight.

Variety *PECTINATA* KS.

Genus PHYLLOCACTUS Link.

Epiphytal plants with spineless flattened leaf-like branches, with a prominent midrib, mostly with large showy flowers, from creamy white to the richest crimson and scarlet, produced from notches in the margins of the stems.

Readily produced by cuttings or seeds, the phyllocacti are established favorites, and hundreds of varieties have been produced by hybridization. Young growth often cylindrical, then triangular, finally assuming the flattened form.

PHYLLOCACTUS ACKERMANNI Walp.

The King cactus was taken from Mexico to England prior to 1829 by George Ackermann, and bears the most gorgeous flowers, 6 to 8 inches in diameter, the acutely pointed, wavy petals of a deep brilliant crimson, bordered at the base with bright magenta, the interior decorated with a mass of white filaments and antlers, the 11 stigmata and style also white. The plant blooms freely and may be seen in many San Diego gardens. The plant before me is about a foot high and bears one open flower and three buds today (May 3, 1900).

PHYLLOCACTUS ACUMINATUS KS.

State of Rio de Janeiro, Brazil.

PHYLLOCACTUS ANGULIGER Lem.

PHYLLOCACTUS BIFORMIS Lab.

Honduras, Central America.

PHYLLOCACTUS CRENATUS Walp.

Honduras, Central America.

PHYLLOCACTUS HOOKERI S.

PHYLLOCACTUS KAMPMANNI Hort.

Kampmann's Case-knife cactus is a less robust plant than the King cactus, and the flowers are only about 3 inches in diameter, the petals broader in proportion, of a bright, but lighter, crimson. Filaments white, antlers canary yellow. This is a general favorite in San Diego gardens, also, producing its lovely flowers in the greatest profusion.

PHYLLOCACTUS LATIFRONS Walp.

The Queen cactus is quite the giant among the Phyllocacti, the stout flattened stems 4 to 5 inches broad, deeply crenated and commonly 8 to 10 feet high. The flowers are 7 to 8 inches long, about 6 inches in diameter, the petals of a delicate, clear, creamy white, the

sepals and tube of a reddish hue. Native of Mexico.

PHYLLOCACTUS PHYLLANTHOIDES Link.

PHYLLOCACTUS PHYLLANTHUS Link.

PHYLLOCACTUS RUSSELLIANUS S.

PHYLLOCACTUS STENOPETALUS S.

PHYLLOCACTUS STRICTUS Lem.

PHYLLOCACTUS THOMASIANUS KS.

PHYLLOCACTUS WRAYI Hort.

Genus PILOCEREUS Lemaire.

Included under the genus *Cereus*.

Tribe OPUNTIÆÆ.

Calyx tube not extending beyond the ovary; stems branched and jointed.

Genus HARIOTA Adans.

Adans Fam 2:243 (1763).

This genus is generally treated as a synonym of *Rhipsalis*, to which we refer all the species. Schumann maintains the genus as defined by De Candolle.

H. alternata Lem Hort Univ i t 50, is *R. paradoxa*.

H. cassytha Cels ex Foerst Handb 458, is *R. cassytha*.

H. cribrata Lem III Hort iv Misc 12 (1857), is *R. saglionis*?

H. floccosa Cels, ex Foerst Handb 458, is *R. floccosa*.

H. funalis Cels, ex Foerst Handb 457, is *R. funalis*.

H. mesembrianthemoides Lem Cact Aliq Nov Desc 29, is *R. mesembrianthemoides*

H. pentaptera Lem ex Foerst Handb 453, is *R. pentaptera*.

H. prismatica Lem III Hort x Misc 84 (1863), is *R. tetragona*?

H. cagliionis Lem Cact Aliq Nov Desc 39, is *R. saglionis*.

HARIOTA SALICORNIOIDES DC.

Rhipsalis salicornioides Haworth, of Brazil.

Variety *BAMBUSOIDES* Weber.

HARIOTA VILLIGERA KS.

KS Fl Br 266: S Paulo, Brazil.

H. clavata Web U S, is *R. clavata*.

Genus RHIPSALIS Gaertn.

RHIPSALIS CASSYTHA Gaertn.

RHIPSALIS SALICORNIOIDES Haw.

Schlumbergera epiphylloides Lem, is *Phyllocactus Russellianus*.

Stromatocactus Kotschubeyi Karw, is *Anhalonium sulcatum* S.

Tephrocactus andicolus Lem, is *Opuntia andicola*.

Tephrocactus aoracanthus Lem, is *Opuntia andicola* Pf.

Tephrocactus diadematus Lem, is *Opuntia diademata*.

Tephrocactus platyacanthus Lem, is *Opuntia platyacantha*.

Zygocactus Altenstemii KS, is *Epiphyllum truncatum* fide KS.

Genus PFEIFFERA Salm.

PFEIFFERA CEREIFORMIS Salm.

A synonym of *Rhipsalis cereiformis*.

Genus MAIHUENIA Phil.

M. POEPPIGII Weber.

M. BRACHYDELPHYS KS.

M. PHILIPPII Weber.

PTEROCACTUS KUNTZEI KS.

Rebutia minuscula KS, is Echinocactus minusculus.

Genus PERESKIA Plum.

PERESKIA ACULEATA Mill.

The Barbadoes gooseberry or Blad-apple; the leaves resemble those of the orange; much used for grafting purposes. West Indies.

PERESKIA BLEO P DC.

PERESKIA LYCHNIDIFLORA P DC.

PERESKIA PANAMENSIS Web.

PERESKIA TAMPICANA Web.

Genus NOPALEA Salm.

Erect, branching plants, with flattened elongated joints; flowers red or crimson, petals erect and slightly approaching each other at the apex, stamens longer than the corolla.

NOPALEA AUBERI Salm-Dyck.

Cuba; rapid growth; arborescent in form, and bearing numerous rose-colored flowers with exsert stamens; the branches armed with stout spines; readily grown from cuttings.

NOPALEA COCCINELLIFERA Salm.

The cochineal cactus, a native of Mexico.

NOPALEA DEJECTA Salm.

Salm-Dyck, Hort Dyck ed 2, 64, 233. Cuba.

NOPALEA KARWINSKIANA S.

NOPALEA MONILIFORMIS KS.

Genus OPUNTIA Tournefort.

"Tube of the flower very short, cup-shaped; petals spreading or rarely erect; ovary with bristle-bearing areolae in the axils of small terete deciduous sepals; berry succulent or sometimes dry, marked with bristly or spiny areolae, truncate with a wide umbilicus; seeds large, white, compressed, with the embryo coiled round the albumen; cot ledous la ge, foliaceous.—Articulated, much-branched plants, of various shapes, low and prostrate or erect and shrub-like; young branches with small terete subulate early deciduous leaves, and in their axils an areola with numerous short easily detached bristles, and, usually, stouter spines, all barbed. Flowers on the joints of the previous year, on the same areolae with the spines, mostly large, open only in sunlight. Fruit often edible, often large."—E.

Opuntia auberi Pf, is Nopalea auberi.

Opuntia camuessa Web, is robusta.

Opuntia decumana Gris, is monacantha.

Opuntia flavicans Lem, is robusta.

Opuntia maxima Hort (non Web), is robusta.

Opuntia stenopetala E, is glauscescens.

Subgenus CYLINDROPUNTIA E.—"Joints cylindrical, more or less tubercu-

lated; rhaps usually not prominent; therefore seed not margined; embryo forming less than one circle around the more copious albumen; cotyledons inconstant, contrary, oblique, or parallel to the sides of the seed."—E.

OPUNTIA ACANTHOCARPA E. & B.

"Arborescens; ramis alternis adscendentibus; articulis cylindricis; tuberculis elongatis; aculeis 8-25 stellato-divaricatis; bacca subglobosa tuberculata aculeata; seminibus multangularis. Mountains of Cactus Pass, between Santa Fe and the western Colorado. Stems 5-6° high; branches few, alternate, and separating from the stem at an acute angle. Joints as in [O. arborescens] 4-6 or 8' long, about an inch in diameter; tubercles 9-19 lines long; interior spines 1-1¼', exterior ones 4-10 lines long. Spines of fruit on the depressed tubercles 3-6 lin. long. Seeds large, unlike those of any other Opuntia seen by me."—E syn 308.

?O. californica E Emory's rep 157 f 11.

OPUNTIA ALCAHES Web.

OPUNTIA ANDICOLA Pfeiffer.

OPUNTIA AORACANTHA Lem.

OPUNTIA ARBORESCENS Engelm.

"Caule ligneo erecto, ramis horizontalibus, ramulis cylindricis, tuberculatis aculeatissimis; areolis oblongis, brevissime tomentosis, aculeos 12-30 corneos stramineo-vaginato teretes undique porrectos gerentibus; ramulis versus apicem floriferis; ovario tuberculato, tuberculis sub-20 apice sepala subulata et areolas tomentosas cum setis paucis albidis gerentibus; sepalis interioribus 10-13 obovatis; petalis obovatis, obtusis s. e marginatis; stigmatibus sub-8 patulis; bacca flava, sicca, ovato-globosa, tuberculata, profunde umbilicata. Mountains of New Mexico to Chihuahua, Parras and Saltillo; flowers in May and Je; fruit, at least about Santa Fe, ripening the 2nd year (Fendler); in the north 5-10, south 20 and more feet high, 5-10' in diam, last branches 2-4' long; spines of the specimens on Waggon-mound 20-30 in each bunch; further south only 12-20, gener-

ally fewer on the under side of the branchlets; spines horn-colored, with straw-colored loose sheaths, from 3-10 lines, generally about 6 lines long. Flowers purple, 3' in diam; stamens red; fruit about 1' long, yellow.

'On Waggon-mound the first (flowerless) specimens of a strange *Opuntia* were found, with an erect, ligneous stem, and cylindrical, horridly spinous horizontal branches. The plant was here only 5 ft high, but grows about Santa Fe to the height of 8 or 10 ft, and continues to be found as far as Chihuahua and Parras. In the latter more favorable climate it grows to be a tree of 20 or 30, and perhaps even 40 feet high, as Dr. Wislizenus informs me, and offers a most beautiful aspect when covered with its large red flowers. It is evidently the plant which Torrey and James doubtfully, though incorrectly, refer to *Cactus Bleo* HBK. It is nearly allied to *Opuntia furiosa*, Willd. but well distinguished from it; * * * the tree cactus, or *Foconoztle*, as called by the Mexicans, according to Dr. Gregg. The stems of the dead plant present a most singular appearance; the soft parts having rotted away, a net-work of woody fibres remains, forming a hollow tube, with very regular rhombic meshes, which correspond with the tubercles of the living plant."—E Wislizenus' report, 90.

OPUNTIA ARBUSCULA E.

OPUNTIA AUSTRALIS Web.

OPUNTIA BERNARDINA Engelm.

OPUNTIA BIGELOVII Engelm.

"*Ramis erectis adscendentibusve; articulis ovato-cylindricis pallide virescentibus congestis; tuberculis subhemisphaericis depressis confertis: aculeis 6-10 robustioribus et totidem gracilioribus inferioribus; ovario tuberculato; bacca tuberculata subinda (sterili!) aculeolata; seminibus parvis.*

"On William's river of the Californian Colorado. Stem 3-4' thick and 10-12 ft

high, the branches forming a dense contracted head, with joints 2-6' long; tubercles 3-4 lines long; larger spines are about 1' long, smaller ones 4-7 lines long."—E Am ac pr 3:307.

OPUNTIA BRACHYARTHRA E. & B.

OPUNTIA BULBISPINA E.

OPUNTIA CERIFORMIS Web.

OPUNTIA CHOLA Web.

OPUNTIA CIRIBE E.

OPUNTIA CLAVARIOIDES L-O.

OPUNTIA CLAVATA E.

OPUNTIA CORRUGATA S.

OPUNTIA CURASSAVICA Mill.

OPUNTIA CYLINDRICA DC.

OPUNTIA DARWINII Hensl.

OPUNTIA DAVISII E. & B.

OPUNTIA DIADEMATA Lem.

OPUNTIA ECHINOCARPA E. & B.

OPUNTIA EMORYI Engelm.

OPUNTIA FLOCCOSA S.

OPUNTIA FRAGILIS Haw.

OPUNTIA FULGIDA Engelm.

OPUNTIA GEISSEI R A Phil.

OPUNTIA GRAHAMII Engelm.

OPUNTIA GRATA R A Phil.

OPUNTIA IMERICATA P DC.

OPUNTIA INVICTA Brandegee.

OPUNTIA KLEINIAE P DC.

OPUNTIA LEONINA H-S.

OPUNTIA LEPTOCAULIS D C.

OPUNTIA LURIDA Hort.

OPUNTIA MAMILLATA Schct.

OPUNTIA MIQUELII Monv.

OPUNTIA MOLESTA Brandegee.

OPUNTIA NIGRISPINA KS.

OPUNTIA OVATA Pf.

OPUNTIA PARISHII Orcutt.

OPUNTIA PARRYI E.

OPUNTIA PENTLANDII S.

OPUNTIA PLATYACANTHA S.

OPUNTIA PROLIFERA Engelm.

OPUNTIA PULCHELLA E.

OPUNTIA PYCNACANTHA E.

Opuntia ramosissima E, is *tessellata*.

OPUNTIA ROSEA DC.

OPUNTIA ROSIFLORA KS.

OPUNTIA ROTUNDIFOLIA KS.

OPUNTIA SALMIANA Parm.

OPUNTIA SCHICKENDANTZII Web.

OPUNTIA SCHOTTII E.

OPUNTIA SERPENTINA Engelm.

OPUNTIA SPEGAZZINII Web.

OPUNTIA SPINOSISSIMA Mill.

OPUNTIA STAPELIAE P DC.

OPUNTIA SUBULATA Engelm.

OPUNTIA TARAPACANA R A Phil.

OPUNTIA TERES Cels.

OPUNTIA TESAJO Engelm.

"With very short woody stem, and growing in little clumps 3 dm or less in diameter; joints slender and not distinctly tuberculate; flowers simple, bell-shaped, yellow. Type, Cabb 26 in hb Mo bot gard. 'Among rocks, especially toward the west coast and in the more central portions', Lower California."—Coulter, Cont Na hb 3-448.

OPUNTIA TESSELLATA Engelm.

OPUNTIA THURBERI E.

OPUNTIA TUNICATA L-O.

OPUNTIA VERSCHAFFELTII Cels.

OPUNTIA VERSICOLOR E.

OPUNTIA VESTITA S.

OPUNTIA WHIPPLEI E. & B.

OPUNTIA TETRACANTHA Toumey.

§Cylindropuntia. "An irregularly branching shrub 6-15 dm high; primary branches erect or ascending from a stout woody trunk 5-8 cm in diameter, and bearing numerous short, lateral branches at irregular intervals; ultimate branches 12-15 mm in diameter; joints cylindrical, 25-30 cm long, with a reticulated woody skeleton; tubercles at first prominent, 16-22 mm long, but on old stems more or less inconspicuous; pulvini sparingly covered with wool and bearing a small crescent-shaped tuft of light brown bristles at the upper margin; spines usually 4, stout, loosely sheathed, straw-colored, strongly deflexed, flattened, 2-3.5 cm long, occasionally 1 or 2 smaller ones, not increasing in size and number after first season's growth; glands conspicuous, a half dozen or more between the spines and bristles; flowers greenish purple, 1.5-2 cm broad; fruit ovate to subglobose, narrowly but deeply umbilicate, 2-25 cm long, juicy, scarlet, usually nearly smooth, but sometimes some of the pulvini bearing 1-3 strong deflexed spines; seeds irregular, 3-5 mm in diameter, commissure broad, with conspicuous spongy appearance."—Toumey Garden and Forest 9: 432 (28 N 1896).

"An interesting species of Cylindropuntia grows in considerable abundance about 5 miles east of Tucson, but, so far as known, only in this one locality. It seems to be nearest related to Opuntia Thurberi E., but differs from that plant, so far as one can judge from the incomplete description and examination of type material in the Engelmann herbarium, in its longer more strongly deflexed spines, smaller and different-colored flowers, etc. It may be known from all related species by its bright scarlet fruit, 4 strongly deflexed spines and peculiar cork-like margin to the seeds. This plant and *O. leptocaulis* are the only Opuntias with which I am familiar that produce small lateral branches no larger than the fully developed fruits, the function of which seems to be to drop to the ground and develop into new plants. The fruit matures in Dec., but remains attached to the plant until the following May. It has an agreeable acid flavor and its bright color makes it very conspicuous against the green stems."—Toumey l.c.

This is probably *O. Stanlyi*, of which the following description is all that is known:—'Opuntia? Oct. 22, 1846. Abundant on the Del Norte and Gila. A remarkable plant, apparently more like a *Mamillaria* than like an *Opuntia*. The fruit is also represented without areolae or tubercles, exactly like the smooth fruit of a *Mamillaria*; but this may be an oversight of the artist. The habit of the plant suggests the belief that it is an *Opuntia* of the section *Cylindraceæ*. Joints or branches ascending, cylindrical, tuberculated, 4-6 inches long, 1-1¼ inches in diameter; tubercles very prominent, with about 8 long (1-1½ inches) straight spines; fruit obovate, umbilicate, scarlet, towards the top of the branches, about 9 lines long and 6 in diameter. It is a distinct species, which I am gratified to dedicate to the skilful artist who has drawn all these figures,—Mr. J. M. Stanly."—E in Emory r 158 f 9.

Subgenus PLATOPUNTIA E.—"Joints compressed; rhaps forming a prominent bony margin around the seed; embryo completing a little more than one circle around the scanty albumen; cotyledons contrary to the sides of the seed."—E.

OPUNTIA ANGUSTATA E. & B.

OPUNTIA ARENARIA Engelm.

OPUNTIA AURANTIACA Gil.

OPUNTIA BASILARIS Engelm.

Variety RAMOSA Parish.

OPUNTIA BECKERIANA KS.

OPUNTIA CAMANCHICA E-B.

OPUNTIA CANDELABRAFORMIS Mart.

OPUNTIA CHLOROTICA Engelm.

OPUNTIA CRASSA Haw.

OPUNTIA CRINIFERA Pf.

OPUNTIA DECUMBENS S.

OPUNTIA DULCIS Engelm.

OPUNTIA ENGELMANNI Slm-Dyck.

OPUNTIA FICUS-INDICA Mill.

OPUNTIA FILIPENDULA E.

OPUNTIA FOLIOSA S.

OPUNTIA FULVISPINA Slm-Dyck.

OPUNTIA FUSCOATRA E.

OPUNTIA GALAPAGEIA Hensl.

OPUNTIA GLAUDESCENS S.

OPUNTIA GLAUCOPHYLLA Wendl.

OPUNTIA GRANDIS Hort.

OPUNTIA HYSTRICINA E-B.

OPUNTIA HYPTIACANTHA Web.

OPUNTIA INAMOENA KS.

OPUNTIA INERMIS P DC.

OPUNTIA LANCEOLATA Haw.

OPUNTIA LARREYI Weber.

"Plant only 9-12 dm high, with large orbicular glaucous joints; fruit 'as large as a goose egg', juicy, pulpy, and with purple pulp; seeds small 'much like those of *O. ficus indica*'. Type unknown. A Mexican species, found by Dr. Weber about Queretaro, and pronounced by him the most delicious of all the fruits he had tasted. Known as 'camuessa'.—Coulter, Cont Na hb 3:423.

- OPUNTIA LEUCOTRICHA P DC.
 Opuntia lindheimeri E. is Engelmannii.
 OPUNTIA MACROCENTRA Engelm.
 OPUNTIA MACRORHIZA Engelm.
 OPUNTIA MACULACANTHA F.
 OPUNTIA MICRODASYDYS Pfeiff.
 OPUNTIA MICRODISCA Web.
 OPUNTIA MICROSCARPA KS.
 OPUNTIA MISSOURIENSIS P DC.
 OPUNTIA MONACANTHA Haw.
 OPUNTIA NIGRICANS Haw.
 OPUNTIA OCCIDENTALIS Engelm.
 OPUNTIA OLIGACANTHA S.
 OPUNTIA PALMERI Engelm.
 Joints oval, smooth (not tuberculated), pale glaucous, 20-25 cm long by 15-20 cm broad; pulvini 2.5-3 cm apart, with pale brownish or gray persistent wool, a few very slender straw-colored bristles, and slender flattened or compressed straw-colored spines 2.5-3 cm long (5-7 on upper pulvini with some smaller additional ones, 1-2 on lower pulvini), erect or spreading, or the upper ones (from upper part of pulvinus) mostly deflexed. Type, Palmer of 1877 in hb Mo bot gard. Near St. George, Utah.—Coulter, Cont Na hb 3-423.
 OPUNTIA PESCERVI Le Conte.
 OPUNTIA PHAEOCANTHA Engelm.
 OPUNTIA PILIFERA Web.
 OPUNTIA POLYANTHA Haw.
 OPUNTIA PROCUMBENS E-B.
 OPUNTIA PUBERULA Pf.
 OPUNTIA PYRRHACANTHA KS.
 OPUNTIA QUIMILLO KS.
 OPUNTIA QUIIENSIS Web.
 OPUNTIA RAFINESQUII Engelm.
 OPUNTIA RHODANTHA KS.
 OPUNTIA ROBUSTA Wendl.
 OPUNTIA RUBESCENS S.
 OPUNTIA RUBRIFOLIA Engelm.
 Prostrate, with thick ovate joints 12-15 cm long by 10 cm broad, not tuberculated; leaves spreading, somewhat recurved, reddish, 8-10 mm long; pulvini 2-2.5 cm apart, with brownish-gray persistent wool and numerous yellowish bristles (especially on the upper edge); spines often twisted, 2.5-6 cm long, often a few additional smaller ones, all deflexed (almost appressed); flowers and fruit unknown. Type, Palmer 3 in hb Mo bot gard. St. George, Utah.—Coulter, Cont Na hb 3:424.
 OPUNTIA RUFIDA Engelm.
 OPUNTIA RUTILA Nutt.
 OPUNTIA SCHEERI Web.
 OPUNTIA SENILIS Roezl.
 OPUNTIA SETISPINA E.
 OPUNTIA SPHAEROCARPA E-B.
 OPUNTIA SPINULIFERA S.
 OPUNTIA STREPTACANTHA Lem.
 OPUNTIA STRIGILIS E.
 OPUNTIA SULPHUREA Gill.
 OPUNTIA TENUIISPINA Engelm.
 OPUNTIA TOMENTOSA S.
 OPUNTIA TORTISPINA E-B.
 OPUNTIA TRELEASII Coulter.

Erect, diffusely branching; joints orbicular to obovate, fleshy, with terete base, 15-25 cm long; pulvini not depressed, with long (5- cm) dense dirty-yellow bristles; leaves on young shoots 5 mm long, spreading (more than twice as long as those of basilaris and darker-red); flower and fruit not seen.—Type, growing in Mo. Bot Gard. 1893, from collection made by Trelease in 1892. At Caliente, in the Te-

hachapi Mountains, California. Specimens examined: California (Trelease of 1892). This species is near *O. basilaris*, but differs in its rounder more fleshy joints (terete below), pulvini not depressed (in *O. basilaris* there is a depression for the pulvinus with a furrow on either side on the general surface), yellowish bristles, and especially in its much larger leaves.—Coulter (Cont Na hb 3:431-435).
 OPUNTIA TRIACANTHA P DC.
 OPUNTIA TUNA Mill.
 OPUNTIA URSINA Weber.

Opuntia ursina is a name given by Albert Weber to a curious and beautiful plant of the Mohave desert, advertised as the Grizzly Bear cactus. The joints are about 3 by 5 inches, densely covered with slender flexuous ivory white spines, the longest over 6 inches long, and completely hiding the plant. A cutting reminds one of the "Old Man" cactus of Mexico, but this belongs among the prickly pears—forming low wide spreading masses of interlacing snow white spines.

- OPUNTIA VULGARIS Mill.
 OPUNTIA XANTHOSTEMMA KS.

Subgenus Peireskiopuntia.

- OPUNTIA BRANDFEGEEI KS.
 OPUNTIA GOLZIANA KS.
 OPUNTIA PITTACHE Web.

Subgenus Brasilopuntia.

- OPUNTIA BRASILIENSIS Haw.

- RHIPSALIS LUMBRICOIDES Lem.
 RHIPSALIS MADAGASCARIENSIS Web.
 R. MESEMBRIANHENOIDEUS Haw.
 RHIPSALIS MICRANTHA DC.
 RHIPSALIS MINUTIFLORA KS.
 RHIPSALIS MONACANTHA Gris.
 RHIPSALIS MYOSURUS KS.
 RHIPSALIS NEVES-ARMONDII KS.
 RHIPSALIS PACHYPTERA Pf.
 Variety crassior S.
 RHIPSALIS PARADOXA S.
 RHIPSALIS PENDULIFLORA NEBr.
 RHIPSALIS PENTAPTERA Pf.
 RHIPSALIS PLATYCARPA Lem.
 RHIPSALIS PULVINIGERA Lindb.
 RHIPSALIS PUNICEO-DISCUS Lindb.
 RHIPSALIS RAMULOSA Pf.
 RHIPSALIS REGNELLII Lindb.
 RHIPSALIS RHOMBEA Pf.
 Variety CRISPATA KS.
 RHIPSALIS ACULEATA Weber.
 RHIPSALIS ALATA KS.
 RHIPSALIS ANCEPS Weber.
 RHIPSALIS CAPILLIFORMIS Weber.
 RHIPSALIS CAVERNOSA Lindb.
 RHIPSALIS CLAVATA Weber.
 RHIPSALIS COMORENSIS Weber.
 RHIPSALIS CONFERTA S.
 RHIPSALIS DISSIMILIS KS.
 RHIPSALIS ELLIPTICA Lindb.
 RHIPSALIS ELLIPTICA Lindb.
 RHIPSALIS ERYTHROCARPA KS.
 RHIPSALIS FLOCCOSA S.
 RHIPSALIS GIBBERULA Weber.
 RHIPSALIS GONACARPA Weber.
 RHIPSALIS GRANDIFLORA Haw.
 RHIPSALIS HADROSOMA Lindb.

RHIPSALIS HOULLETTIANA Lem.
 RHIPSALIS LINDBERGIANA KS.
 RHIPSALIS LINEARIS KS.
 RHIPSALIS SAGLIORIS Lem.
 RHIPSALIS SANSIBARICA Weber.
 RHIPSALIS SQUAMULOSA KS.
 RHIPSALIS SUAREZIANA Weber.
 RHIPSALIS TETRAGONA Weber.
 RHIPSALIS TRIGONA Pf.
 RHIPSALIS TUCMANENSIS Weber.
 RHIPSALIS VIRGATA Weber.
 RHIPSALIS WARMINGIANA KS.
 RHIPSALIS VILLIGERA Orcutt.

Hariota villigera KS Fl Br 266; mon 613.
 RHIPSALIS CEREFORMIS Foerster.
 Pfeiffera cereformis S HD 40 (1884); ed 2,
 61, 234; ab 2 t 9.

Pfeiffera ianthothele Weber Dict 944.
 KS mon 610.

CEREUS EXERENS Linke.
 CEREUS HERMENTIANUS Monv.
 Pilocereus hermentianus Lem et Cons
 III Hort JIII t 469.—Lem cact 63.—Foerster
 handb cact ed 2, 266.—KS mon 186.

CEREUS HOPPENSTEDTII Weber cat
 Pfersdorff, 1864.—Foerster handb cact ed
 2, 667.—KS Mfk 4:80; mon 177.

CEREUS HOUERTII Orcutt.
 CEREUS PECTEN-ABORIGINUM E.
 CEREUS PENTAGINODIOPHILUS Lab.
 CEREUS LANUGINOSUS Mill.

CEREUS MONITZIANUS Otto.
 CEREUS POLYOPHUS DC.
 CEREUS ROYENII Haworth.
 CEREUS STRICTUS DC.

CEREUS RUSSELLIANUS Otto.
 MELOCACTUS CAESIUS Wendl.
 MELOCACTUS COMMUNIS L & O.

MELOCACTUS DEPRESSUS Hook.
 MELOCACTUS GONICANTHUS Lem.
 MELOCACTUS LEMAIREI Miq.

MELOCACTUS MEONACANTHUS L & O.
 MELOCACTUS MICROCEPHALUS Miq.
 MELOCACTUS MIQUELII Lehm.
 MELOCACTUS OBTUSIPETALUS Lem.

MELOCACTUS PYRAMIDATUS S.
 MELOCACTUS VIOLACEUS Pf.
 MELOCACTUS ALBISPINUS Salm.
 CEREUS CELSIANUS Orcutt.

Pilocereus celsianus Lem Rev Hort 1862,
 428.
 CEREUS CHRYSACANTHUS Orcutt.

Pilocereus chrysacanthus Weber ex KS
 mon 178.

CERUSCOMETES Scheidw.
 CEREUS DAUTWITZII Orcutt.

Pilocereus dautwitzii Hge Gard Chron
 1873.
 1873, 1:7 f 1.

Rose, Contr U S Na Hb 5: 258 t 62.—
 "This seems to be the 'hikora rosapara'
 of which Lumholtz writes: 'Rosapara is
 a white and spiny hikora. * * * It
 must be touched with clean hands and
 only by people who are well baptized, for
 he is a good Christian, say the Christian
 Tarahumaris, and keeps a sharp eye upon
 the people around him'."

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 of works pertaining to cacti; we will be
 glad to have our attention called to any
 omitted, or to obtain the same.

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CEREUS GEOMETRIZANS Mart.

Arborescent, 20 feet high or more, assuming somewhat an umbrella form from its manner of branching; joints mostly short, thick; ribs 5 or 6, acute when young, with sharply defined intervals—on old plants often very obtuse, bearing large woolly spineless areolæ; stems of young growth 3 inches in diameter, areolæ $1\frac{1}{2}$ inch apart, woolly—in age the enlarged bulbous bases of the spines are in close contact, covering the areolæ completely (or spineless!); radial spines 3-5, $\frac{1}{4}$ - $1\frac{1}{2}$ inches long, central spine $1\frac{1}{2}$ inches in maximum length, straight or twisted, all stout, angled, ashy black, woody; central spine sometimes absent, lateral radials usually the longer, very variable. Plant smooth, bright apple green or glaucous, known as the garambullo. Fruit rarely over $\frac{1}{2}$ inch long, half as great in diameter, or globose, attached to a small tomentose areolæ, remains of flower often persistent, when deciduous leaving a small round scar; epidermis usually smooth, with 1-6 tomentose areolæ bearing minute scales (more rarely bearing in their axils a more minute spine), purple (sometimes glaucous) with purple pulp; fruit bursting irregularly at maturity. As many as 14 fruits were seen growing from one areolæ; one rib of 11 areolæ on a joint of 5 ribs bore 36 fruits, only 1 of the areolæ without fruit, and this is frequent on the hundreds of branches—old and young alike, almost to the trunk. Seeds large, black, 63 from one berry. Fruit ripening in June, 1902, in the state of Oaxaca, Mexico (Orcutt 2670); in July near San Luis Potosi (2609), where its growth is smaller, and large

quantities are collected by the inhabitants and eaten fresh, or dried; Tehuacan (2630).

Console made this the type of his genus *Myrtillocactus*. *Cereus cochal* Orcutt, from Lower California, is closely allied, and treated as a variety by some authors.

CEREUS TRIANGULARIS Miller.

Climbing over rocks and trees, joints 3-sided, $1\frac{1}{4}$ inches in diameter, 1 or 2 to many feet long, curving, the side next to tree or rock nearly flat, the others slightly concave; ribs acute, undulate-tuberculate, bearing in the depressions between the undulations small tomentose areolæ $1\frac{1}{4}$ - $2\frac{1}{4}$ inches apart, with 3-4 stout bulbous brown or blackish spines 1-2 mm long. Flowered (28 Je 1902) in the night; flower a foot long; tube of corolla 5 inches long, light apple green, spineless, with about 10 greenish yellow sepaloïd scales, $\frac{1}{2}$ inch wide or less, acuminate, yellowish, about 20; petals snowy white, an inch wide, 5 inches long, acuminate, about 20; filaments white, 2 inches shorter than the petals, anthers sulphur yellow; style 9 inches long, $\frac{1}{4}$ thick, white; 25 spreading slender white stigmata three-fourths inch long; fruit light crimson, 3 inches in diameter, 5 in length, with about 20 sepaloïd apple green scales, forming a pretty color-contrast, epidermis an eighth of an inch thick, pulp white, filled with about 3,000 small black seeds (fruit bought in Tehuacan market for 6 cents, 28 Je 1902). Plant rather light green, the acute ribs narrowly margined with brown, 1-2 mm wide or less on either side. Pitahalla or pitajaya of the Indians. States of Puebla and Oaxaca, Mexico (Orcutt 2710, 2711).

CEREUS GIGANTEUS Engelm.

The 'Suwarro' or giant cactus of Arizona and Sonora, 25-60 feet high, 1-2 in diameter, thickest about the lower third where generally the 2 or 3 alternate or sometimes opposite branches start, and from thence slightly taper toward the summit. Stems and branches marked by superficial transverse furrows, indicating, as it seems, the annual periods of growth, forming rings of 4-8 inches in height. Branches unequal, and always of less height than the main stem, mostly 5-6 feet long, with 12-18 ribs.

The contents and paging of the West American Scientist, volume 13, of California Art & Nature volume 2, and of the Review of the Cactaceæ volume 3, are identical (issued in order named).

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Brief notices inserted free for subscribers.

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