

THE GENUS *CEREUS* AND ITS ALLIES IN NORTH AMERICA.

By N. L. BRITTON and J. N. ROSE.

INTRODUCTION.

Studies of North American Cactaceae, conducted now for several years in the museums and greenhouses at New York and Washington and supplemented by field work in the West Indies, Mexico, and the southwestern United States, have rendered us familiar with the habit and morphology of a large number of species. The information thus obtained makes it clear that a considerable number of generic types must be recognized, additional to those established by previous authors, in order to present a rational classification of this family. We have been greatly aided in our study by A. Berger's admirable paper entitled, "A systematic revision of the genus *Cereus* Mill."^a This is by far the most satisfactory treatment of the group which has ever appeared. We think, however, that he has erred in referring to *Cereus* the genera *Cephalocereus* and *Echinocereus*, which are now almost universally considered distinct.

But it is also true that these units have no more claim to generic rank than most of the other subgenera established by him. While, therefore, we differ from Mr. Berger as to the importance of these groups, we realize that he has been consistent and logical in his work. The genera have very distinct flower and fruit characters as well as clearly defined habit and stem structure. We have experienced some difficulty in forming a lineal arrangement of the genera which seemed to be logical. Mr. Berger's arrangement as given in his synopsis of the subgenera of *Cereus* is in the main satisfactory but has certain defects. We have formed a new arrangement which will be followed here, although further study will doubtless lead to various changes in it. Although the present paper deals only with North American species, we may express the conviction incidentally that *Eulychnia* of Philippi and *Cleistocactus* of Lemaire, South American groups, should be restored to generic rank.

In the present communication we submit a list, with bibliographic references and indication of geographic distribution and of type localities, of the genera and species with descriptions of the genera.

Plates LXV and LXVI and LXVIII to LXXIII are from photographs furnished by Dr. D. T. MacDougal, which are here used by courteous permission of the Carnegie Institute of Washington.

^a Rep. Mo. Bot. Gard. 16: 57-86. 1905.

DESCRIPTIONS OF GENERA WITH LISTS OF SPECIES.

1. **CEREUS** Mill. Gard. Dict. ed. 8. 1768.

CEREUS subgenus PIPTANTHOCEREUS Berger.

Night-flowering cacti with columnar upright, branching, ribbed, fluted or angled stems and branches, the areoles bearing several spines; flowers funnellform, elongated, the corolla falling away from a ring a little above the ovary after expanding; ovary bearing a few small scales but no spines nor wool; corolla tube nearly cylindrical, somewhat expanded above, bearing a few similar scales, or naked; outer perianth segments obtuse, the inner acute, the petaloid ones bright white; stamens numerous, differing much in length; style included, the linear stigmas numerous; fruit fleshy, naked, sunken at the top, the persistent style recurved; seeds numerous, black, the testa punctate.

Type species *Cereus peruvianus* Mill.

Cereus hexagonus (L.) Mill. Gard. Dict. ed. 8. no. 1. 1768.

Cactus hexagonus L. Sp. Pl. 466. 1753.

Cactus peruvianus L. Sp. Pl. 467. 1753.

Cereus peruvianus Mill. Gard. Dict. ed. 8. no. 4. 1768.

Cereus alacriportanus Mart.; Pfeiff. Enum. Cact. 87. 1837.

TYPE LOCALITY: Jamaica; there, however, not indigenous but introduced from Peru.

DISTRIBUTION: South America; widely planted and naturalized in the West Indies and Central America.

ILLUSTRATIONS: Vell. Fl. Flum. pl. 18. 19; Pfeiff. Abb. u. Beschr. pl. 5; DC. Mem. Mus. Paris 17: pl. 11.

Clearly of South American origin.

Cereus jamacaru DC. Prod. 3: 467. 1828.

PLATE LXI.

TYPE LOCALITY: In Brazil.

DISTRIBUTION: South America. Planted in the West Indies; perhaps naturalized on some islands.

ILLUSTRATION: Pison, Hist. Nat. Bras. 100. f. 1; Bot. Mag. 95: pl. 5775, as *C. lividus*.

EXPLANATION OF PLATE LXI.—From a photograph taken by M. A. Howe, at Santurce, Porto Rico.

Cereus nudiflorus Engelm. Anal. Acad. Cienc. Habana 6: 98. 1869.

TYPE LOCALITY: Beaches near Havana and Guantanamo, Cuba.

DISTRIBUTION: Cuba.

ILLUSTRATIONS: Contr. Nat. Herb. 12: pls. 49-51; Journ. N. Y. Bot. Gard. 10: pl. 18.

Erroneously referred by Schumann to *Cereus lepidotus* Salm-Dyck, a native of northern South America, planted in the West Indies.

2. **RATHBUNIA** gen. nov.

Plants not large, the stem and branches often weak; spines stout, those of the flowering areoles not differing from the others; flowers diurnal, single from the areoles, very narrow and elongated, trumpet-shaped, somewhat curved, oblique at mouth, scarlet; petals very short, spreading, reflexed, or rolled back; stamens inserted near the middle of the tube, exerted; fruit globular; seeds black, compressed, minutely pitted, with a large basal oblique hilum.

Named for Dr. Richard Rathbun, Assistant Secretary of the Smithsonian Institution in charge of the U. S. National Museum, a well-known authority on marine invertebrates.

Type species *Cereus sonorensis* Runge.



CEREUS JAMACARU (L.) MILL.

Rathbunia alamosensis (Coul.).*Cereus alamosensis* Coul. Contr. Nat. Herb. 3: 406. 1896.

TYPE LOCALITY: Near Alamos, Sonora.

DISTRIBUTION: Southern Sonora and northern Sinaloa, Mexico.

Rathbunia kerberi (Schum.).*Cereus kerberi* Schum. Gesamtb. Kakteen 89. 1899.

TYPE LOCALITY: On Volcano of Colima, Mexico.

DISTRIBUTION: Sinaloa, Tepic, and Colima, Mexico.

Rathbunia sonorensis (Runge).*Cereus sonorensis* Runge in Schum. Monatssch. Kakteenk. 11: 135. 1901.

TYPE LOCALITY: In Sonora.

DISTRIBUTION: Central Sonora, Mexico.

ILLUSTRATION: Monatssch. Kakteenk. loc. cit.; Schumann, Gesamtb. Kakteen Nachtr. f. 4, as *C. stellatus*; Ann. Rep. Mo. Bot. Gard. 16: pl. 3. f. 5.**3. CEPHALOCEREUS** Pfeiff. Allg. Gartenz. 6: 142. 1838.

Usually very large plants, either with a simple trunk or more or less branched; upper areoles usually developing wool, in some species forming a distinct cephalium either at the top or at one side near the top; flowers nocturnal, thick, fleshy, comparatively small, one from an areole, with a short definite funnel-shaped tube with few bracts; sepals and petals rather fleshy; ovary globular, naked or with a few bracts, spineless; fruit a small globular or depressed-globose berry; seeds numerous, small, reticulate, black or brownish, shining, with an oblique basal depressed hylum.

Type species *Cactus senilis* Haw. (which is also the type species of *Pilocereus* Lem. Cact. Gen. Nov. & Sp. 6. 1839).

Cephalocereus aleusis (Weber).*Pilocereus aleusis* Weber; Gosselin, Bull. Mus. Paris 11: 508. 1905.

TYPE LOCALITY: Sierra del Alo (and near Manzanillo, in forests bordering the sea), Mexico.

DISTRIBUTION: Known only from the type locality, but doubtless of wider distribution. Clearly a *Cephalocereus*, but known to us only from description.**Cephalocereus bahamensis** Britton, sp. nov.

Plant 3 to 4 meters high, often 20 cm. thick at the base, the branches divergent-ascending, 7 to 9 cm. thick, dull green, not pruinose, 10 or 11-ribbed, the ribs blunt or acutish, rather higher than wide; areoles 1 to 1.5 cm. apart; spines 15 to 20, acicular, radiately spreading and ascending, gray-brown to yellow-brown when old, 1 to 1.5 cm. long, the young ones yellowish with darker bases, the uppermost 2.5 to 3 cm. long; wool very short (shorter than the spines), or none; flower 5 to 6 cm. long, brownish outside, the petals creamy-white; style slightly exserted; fruit depressed-globose, 3 to 4 cm. in diameter.

BAHAMAS: Frozen Cay, Berry Islands (*Britton & Millspaugh* 2221, January 30, 1905, type); Eleuthera (*Britton & Millspaugh* 5431); Andros (*Northrop* 699; *Brace* 5054); Cat Island (*Wilson* 7185); Crooked Island (*Brace* 4695); Abaco (*Brace* 2051).

Cephalocereus bakeri, sp. nov.

Plant 3 to 4 meters high, branching near and above the base, the branches 7 to 10 cm. thick, dull green, slightly glaucous; ribs 10 or 11, acutish; areoles 1 to 1.5 cm. apart; spines 15 to 20, acicular, 1 to 2.5 cm. long, yellow when young, becoming gray; flowering areoles closely set, producing only short yellow spines, the centrals hardly different from the radials; flowers deep purple, glaucous, 5 cm. long; ovary naked except for a few ovate bracts.

Collected by C. F. Baker at Cojimar, Province of Havana, Cuba, March 14, 1905 (no. 2731); collected also by C. Wright (no. 2621) and recorded by Grisebach as *C. royeri armatus*.

Cephalocereus chrysacanthus (Weber).*Pilocereus chrysacanthus* Weber; Schum. Gesamt. Kakteen 178. 1899.*Cereus chrysacanthus* Orcutt, West. Am. Scientist 13: 63. 1902.

TYPE LOCALITY: Near Tehuacan, Mexico.

DISTRIBUTION: Type locality and vicinity.

ILLUSTRATIONS: MacDougal, Bot. N. Am. Deserts *pl.* 17 in part.**Cephalocereus colombianus** Rose, sp. nov.

PLATES LXII, LXIII.

Tree, 5 to 6 meters high, more or less branched throughout, the branches nearly erect; ribs 8, obtuse; spines very many, 25 or more, long and slender; wool from the areoles long and white, produced for 1 meter down from the top; flowers 7 cm. long, smooth, pale pink.

Collected by H. Pittier at Ventanas del Dugua, Western Cordillera of Colombia in the State of Cauca, altitude 600 to 900 meters, February 22, 1906, type; also by W. R. Maxon at Puerto, Colombia (no. 3845). To be looked for in Panama.

Described from photographs and a living specimen.

EXPLANATION OF PLATES LXII, LXIII.—Pl. LXII, plant. Pl. LXIII cross section and portion of surface showing spines; flower and bud. Both from photographs taken by H. Pittier.

Cephalocereus cometes (Scheidw.).*Cereus cometes* Scheidw. Allg. Gartenz. 8: 339. 1840.*Pilocereus jubatus* Salm-Dyck, Cact. Hort. Dyck. 24. 1845.*Cereus flavicomus* Salm-Dyck, Cact. Hort. Dyck. ed. 2. 202. 1850.*Pilocereus cometes* Mittl.; Först. Handb. Cact. 357. 1846, as synonym.*Pilocereus flavicomus* Salm-Dyck; Rümpl. Först. Handb. Cact. ed. 2. 658. 1886.

TYPE LOCALITY: Near San Luis Potosí, Mexico.

DISTRIBUTION: San Luis Potosí, Mexico.

Cephalocereus hermentianus (Monv.).*Cereus hermentianus* Monv. Ill. Hort. 6: misc. 90. 1859.*Pilocereus hermentianus* Lem.; Weber in Bois, Dict. Hort. 965. 1898.

TYPE LOCALITY: Not cited.

DISTRIBUTION: Haiti, according to Weber.

Described as having about 19 ribs.

Cephalocereus hoppenstedtii (Weber) Schum. in Engl. & Prantl, Pflanzenfam.3^{ea}: 181. 1894.*Pilocereus hoppenstedtii* Weber, Cat. Pfersdorff. 1864.*Cereus hoppenstedtii* Berger, Ann. Rep. Mo. Bot. Gard. 16: 70. 1905.

TYPE LOCALITY: Zapotitlan, near Tehuacán, Mexico.

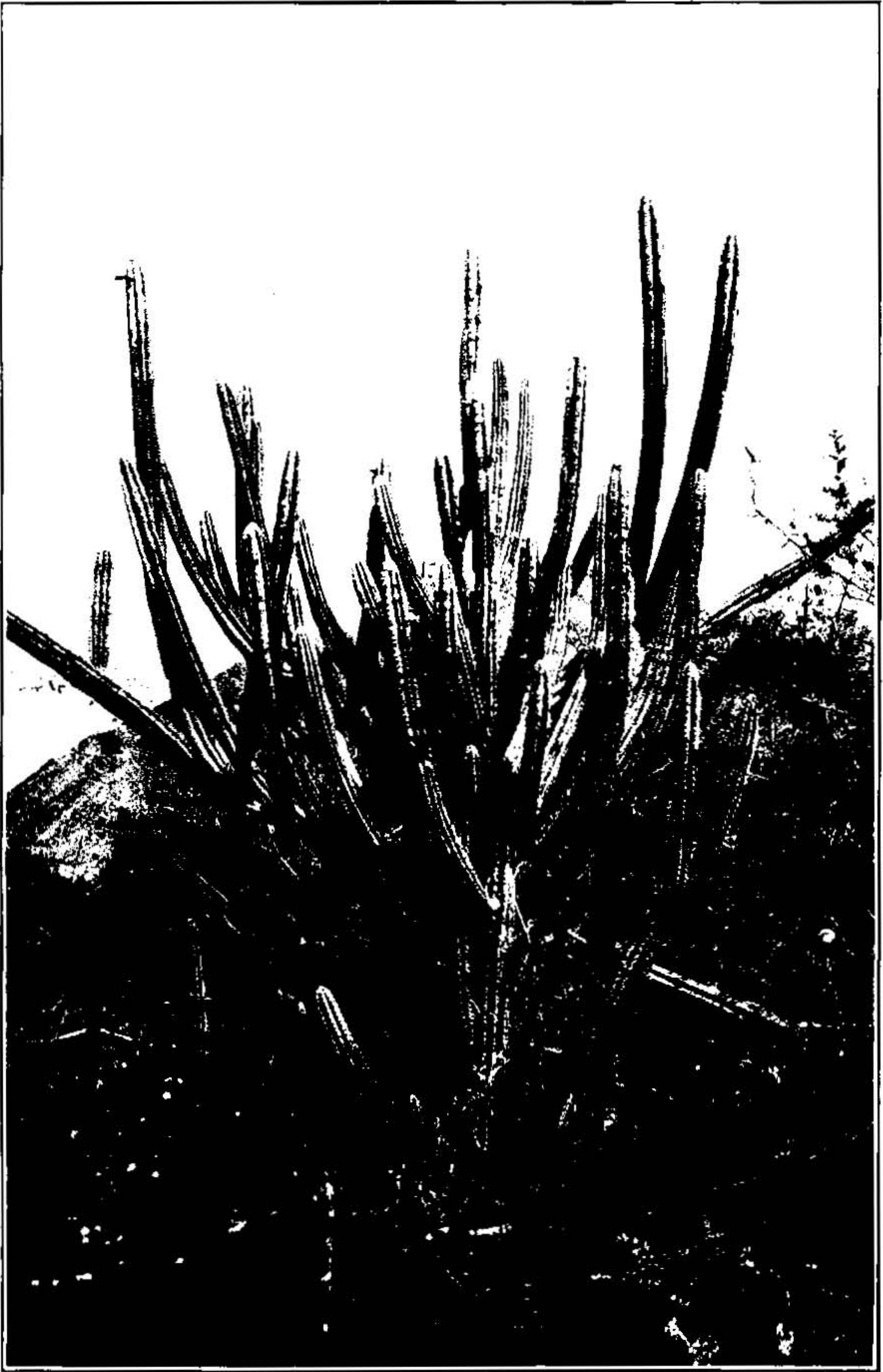
DISTRIBUTION: Type locality and vicinity.

Cephalocereus keyensis sp. nov.

Plant 5 to 6 meters high, much branched, the branches almost erect, 5 to 6 cm. in diameter, the trunk up to 12 cm. thick; ribs 9 or 10, narrow, separated by deep grooves, blue green, very glaucous; areoles 1 to 2 cm. apart, slightly elevated; spines about 15, acicular, yellow, diverging, 1.5 cm. long or less; wool very short, less than 1 mm. long, white, turning grayish; flowers brownish purple, narrowly campanulate, 6 cm. long, with a strong odor of garlic when opening in the late afternoon or evening, odorless the next morning; outer perianth segments oblong-spatulate, bluntly pointed, the inner acutish; style scarcely exerted; fruit depressed-globose, reddish, 3.5 cm. thick, about 2 cm. high.

Hammock, Key West, Florida, N. L. Britton, April 7, 1909, no. 518, type; flowers collected also on Key West by A. H. Curtiss in 1885, and many years before by Dr. Blodgett. Doubtfully recorded by Dr. Chapman^a as *C. monoclonos* DC., but the flowers described by him are those of *Harrisia*.

ILLUSTRATION: Journ. N. Y. Bot. Gard. 10: *f.* 25.^a Southern Flo. 144.



CEPHALOCEREUS COLOMBIANUS ROSE.



CEPHALOCEREUS COLOMBIANUS ROSE.



CEPHALOCEREUS MAXONII ROSE.

Cephalocereus lanuginosus (L.).*Cactus lanuginosus* L. Sp. Pl. 467. 1753.*Cereus lanuginosus* Mill. Gard. Dict. ed. 8. no. 3. 1768, as to name only.*Cereus repandus* Mill. Gard. Dict. ed. 8. no. 5. 1768.*Pilocereus lanuginosus* Rümpl. Först. Handb. Cact. ed. 2. 672. 1886.

TYPE LOCALITY: Island of Curaçao, South America.

This species is commonly referred to Cuba, Porto Rico, and other West Indian Islands, but is apparently to be excluded from our range. Recently Miss Albertina Lens sent plants from the type locality which are very different from any of our North American material.

Cephalocereus leucocephalus (Poselg.).*Pilocereus leucocephalus* Poselg. Allg. Gartenz. 21: 126. 1853.*Pilocereus fürsteri* Lem. Ill. Hort. 13: under pl. 472. 1866.*Pilocereus houletii* Lem. Rev. Hort. 1862: 428. 1862.*Cereus houletii* Berger, Ann. Rep. Mo. Bot. Gard. 16: 70. 1905.

TYPE LOCALITY: Of *P. leucocephalus*, "prope Horcasetas" in Sonora, Mexico; of *P. houletii*, "In Sonora."

DISTRIBUTION: Sonora and southeastern Chihuahua, Mexico.

ILLUSTRATIONS: Rev. Hort. 1862: f. 38-41; Rümpl. Först. Handb. Cact. ed. 2. f. 89, 90; Lem. Cact. f. 5, 6; Pflanzenfam. 3^{6a}: f. 59. A, B.

This species was described from cultivated specimens which were said to have come from "Sonora." So far as we know no species of this genus has in recent years been collected in Sonora, but Dr. E. Palmer collected from some *Cephalocereus* in a barranca near Batopilas, Chihuahua, in 1885, long hair similar to that figured by Lemaire. This barranca runs down into Sonora. Schumann only refers to a plant collected at Naulingo, between Vera Cruz and Jalapa. This is undoubtedly a different species.

Cephalocereus macrocephalus Weber; Schum. Gesamtb. Kakteen 197. 1899.*Cereus macrocephalus* Berger, Ann. Rep. Mo. Bot. Gard. 16: 62. 1905.

TYPE LOCALITY: Tehuacán, Mexico.

DISTRIBUTION: Type locality and vicinity.

ILLUSTRATIONS: Contr. Nat. Herb. 10: pl. 43B; MacDougal, Bot. N. Am. Deserts pl. 15.

Cephalocereus maxonii Rose, sp. nov.

PLATE LXIV.

Plant 2 to 3 meters high, with few long branches; in mature plants the tops of the branches for about 30 cm. clothed with long (4 to 5 cm.) white hairs; ribs 6 to 8, acute, pale blue and somewhat glaucous; areoles small; spines about 10, slender, yellow, the central single (4 cm. long), all nearly hidden by the long white hairs; flowers purple, 4 cm. long; ovary naked except for a few small bracts; fruits 3.5 cm. broad, broader than high; seeds brownish, reticulated with an oblique basal hilum.

Collected by William R. Maxon near El Rancho, Guatemala, April 4, 1905 (no. 3769, type); and later, seeds only, by W. A. Kellerman, January 10, 1908 (no. 7061). Also near Salamá, by Mr. Maxon (no. 3381).

Type U. S. National Herbarium no. 473710.

One living specimen is growing in Washington, and flowers and fruit are preserved in formalin. Prints from a number of good photographs taken by Cook and Collins, W. A. Kellerman, H. Pittier, and William R. Maxon have been mounted.

EXPLANATION OF PLATE LXIV.—From a photograph taken by William R. Maxon of a plant near Salamá.

Cephalocereus millspaughii Britton, sp. nov.

Stem branched, 2 to 6 meters high, 20 cm. thick at the base, the branches nearly erect, 8 to 12 cm. thick, pale grayish green, pruinose, 8 to 13-ribbed, the ribs

acutish, about as wide as high or a little wider; areoles 1 to 2 cm. apart; spines about 20, acicular, widely radiating, 1 to 2 cm. long, or at the flower-bearing (upper) areoles 3 to 7 cm. long, the old ones gray brown, the young ones yellow or yellow brown, with darker bases; upper areoles on one side of the plant with large tufts of whitish wool often as long as the spines or longer; flowers 6 cm. long; fruit depressed-globose, about two-thirds as long as thick.

BAHAMAS: Cave Cay, Exuma Chain, February 19, 1905, *Britton & Millspaugh* 2832, type; Conception Island, *Britton & Millspaugh* 6025; Watlings Island, *Britton & Millspaugh* 6112; Acklins Island, *Brace* 4300; Mariguana, *Wilson* 7567; South Caicos, *Wilson* 7678; Little Inagua, *Nash & Taylor* 1195; *Wilson* 7773.

Cephalocereus monoclonos (DC.).

Cereus monoclonos DC. Prod. 3: 464. 1828.

TYPE LOCALITY: Caribbæan Islands.

ILLUSTRATION: Plumier, Pl. Am. ed. Burmann. pl. 191.

Clearly a *Cephalocereus* without wool, and presumably from Santo Domingo.

Cephalocereus nobilis (Haw.).

Cereus nobilis Haw. Syn. Pl. Succ. 179. 1812.

Cactus strictus Willd. Enum. Suppl. 32. 1813, not *C. strictus* Haw. 1803.

Cereus strictus DC. Prod. 3: 465. 1828.

Pilocereus strictus Rümpl. Först. Handb. Cact. ed. 2. 687. 1886.

Pilocereus nobilis Schum. in Engl. & Prantl, Pflanzenfam. 3^{ea}: 181. 1894.

Cactus haworthii Spreng. Syst. 2: 495. 1825.

Cereus haworthii DC. Prod. 3: 465. 1828.

Pilocereus haworthii Console; Lem. Rev. Hortie. 1862: 428. 1862.

Pilocereus consolei Lem. loc. cit. 427. 1862.

Cereus curtisii Otto; Pfeiff. Enum. Cact. 81. 1837.

Pilocereus curtisii Salm-Dyck, Cact. Hort. Dyck. ed. 2. 40. 1850.

For additional synonymy see Schumann, Gesamtb. Kakteen 189.

TYPE LOCALITY: "West Indies."

DISTRIBUTION: St. Kitts to Grenada.

ILLUSTRATION: Bot. Mag. pl. 3125, as *Cereus royeri*.

Cephalocereus palmeri Rose, sp. nov.

Tree 2 to 6 meters high, with 20 or more branches (often 5 to 8 cm. in diameter), dark green or glaucous and bluish when young; ribs 7 to 9, rounded on the edge, rather closely set, clothed from top downward for 20 to 30 cm. with long white hairs (4 to 5 cm. long) usually hiding the spines; radial spines 8 or 12, slender, yellow when young; central one much longer than the others, 2 to 3 cm. long; areoles 1 cm. apart, scarcely woolly except toward the top; flowers 6 cm. long, somewhat tubular, brownish, the ovary without spines or hairs; fruit globular, about 6 cm. in diameter, naked but the surface somewhat warty; seeds black, shining, minutely pitted, 2 mm. long, oblique at base.

Collected by Dr. E. Palmer near Victoria, Mexico, February, 1907 (no. 362, type), and near the same place by E. A. Nelson, March 15, 1902 (no. 6865).

Type U. S. National Herbarium no. 572593.

Living specimens, including seedlings, are now growing in Washington.

It is called "organo," a common name also for *Cereus marginatus* and other species of *Cereus*.

Cephalocereus polygonus (Lam.).

Cactus polygonus Lam. Encycl. 1: 539. 1783.

Cereus polygonus DC. Prod. 3: 466. 1828.

Pilocereus plumieri Lem. Rev. Hortie. 1862: 427. 1862.

TYPE LOCALITY: Santo Domingo.

DISTRIBUTION: Santo Domingo.

ILLUSTRATION: Plumier, Pl. Am. ed. Burmann *pl.* 196.

From the figure, which shows a plant without wool, and from the description, which mentions no wool, this resembles *C. bahamensis* Britton. It is doubtless a *Cephalocereus*.

***Cephalocereus polylophus* (DC.).**

Cereus polylophus DC. Mem. Mus. Paris 17: 115. 1828.

Pilocereus polylophus Salm-Dyck, Cact. Hort. Dyck. ed. 2. 40. 1850.

TYPE LOCALITY: "In Mexico."

DISTRIBUTION: Eastern Mexico.

Known to dealers in cacti as *Cereus nickelsii*.

***Cephalocereus royeri* (L.).**

Cactus royeri L. Sp. Pl. 467. 1753.

Cereus royeri Haw. Syn. Pl. Succ. 182. 1812.

Pilocereus floccosus Lem. Ill. Hort. 13: under *pl.* 470. 1866.

Cereus armatus Otto; Pfeiff. Enum. Cact. 81. 1837.

Cereus floccosus Otto; Pfeiff. Enum. Cact. 81. 1837.

Pilocereus royeri Rümpl. Först. Handb. Cact. ed. 2. 682. 1886.

Pilocereus fouachianus Weber; Gosselin, Bull. Mus. Paris 10: 386. 1904.

TYPE LOCALITY: In America, presumably St. Croix.

DISTRIBUTION: St. Croix, St. Thomas, Culebra, Porto Rico, Cuba?

ILLUSTRATION: Journ. N. Y. Bot. Gard. 7: *f.* 4.

The Cuban plant may prove to be specifically distinct.

***Cephalocereus sartorianus* Rose, sp. nov.**

Plant 3 to 5 or more meters high with nearly erect branches, 7 to 10 cm. in diameter, light or yellowish green, apparently not pruinose; ribs (in three individuals examined) 7, 2 cm. deep, marked by a pair of grooves descending obliquely, one on each side, from the areoles; areoles closely set, usually 1.5 cm. apart; radial spines at first 7 or 8, others apparently developing later; central normally one; all spines short, 1 cm. or less long, at first straw-colored, in age grayish; all areoles producing few or many cobwebby hairs; the flowering areoles appearing on one side of the plant, in the specimen under observation on a single rib, and producing long white hairs 4 to 6 cm. long; flowers 6 to 8 cm. long, "dirty rose red;" fruit red.

Described from two young plants and the top of an old one sent by Dr. C. A. Parpus and the late Dr. A. Sartorius from the State of Veracruz, Mexico.

Type U. S. National Herbarium no. 574992.

This is doubtless the *Pilocereus houletii* of Schumann's Monograph and of most writers, but the type of the original species came from Sonora, Mexico.

ILLUSTRATION: Blühende Kakteen *pl.* 79, as *Pilocereus houletii*.

***Cephalocereus scoparius* (Poselg.).**

Pilocereus scoparius Poselg. Allg. Gartenz. 21: 126. 1853.

TYPE LOCALITY: Soledad, near Veracruz, Mexico.

DISTRIBUTION: Type locality and vicinity.

***Cephalocereus senilis* (Haw.) Pfeiff. Allg. Gartenz. 6: 142. 1838.**

Cactus senilis Haw. Phil. Mag. 63: 41. 1824.

Cereus senilis DC. Prod. 3: 464. 1828.

Pilocereus senilis Lem. Cact. Gen. & Sp. Nov. 6. 1839.

Cactus bradypus Lehm. Index Sem. Hamburg 17. 1826.

TYPE LOCALITY: Mexico.

DISTRIBUTION: Hidalgo and Guanajuato, Mexico.

ILLUSTRATIONS: Lehm. Nov. Act. Acad. Nat. Cur. 16¹: pl. 12; Monatssch. Kakteenk. 1: 32; Monatssch. Kakteenk. 4: 124, 125; Gesamtb. Kakteen f. 40; Rev. Hort. 1889: f. 139; 1890: f. 38, 39; Rümpl. Först. Handb. Cact. ed. 2. f. 91, 92; Engl. & Prantl, Nat. Pflanzenf. 3^{6a}: pl. 2. f. 60.

Cephalocereus swartzii (Griseb.).

Cereus swartzii Griseb. Fl. Brit. West Ind. 301. 1860.

TYPE LOCALITY: Jamaica.

DISTRIBUTION: Jamaica.

Cephalocereus urbanianus (Schum.).

Pilocereus urbanianus Schum. Gesamtb. Kakteen 193. 1899.

TYPE LOCALITY: Guadaloupe.

DISTRIBUTION: Guadaloupe.

The following is clearly a *Cephalocereus*, but is known to us only from the description:

PILOCEREUS SCHLUMBERGERI Weber; Schum. Gesamtb. Kakteen 186. 1899.

TYPE LOCALITY: Not cited.

DISTRIBUTION: Haiti, in the vicinity of Gonaives, according to Weber, as cited by Schumann, Gesamtb. Kakteen Nachtr. 66.

Described as having 13 ribs, and clearly a *Cephalocereus*, but known to us only from the description. *C. polygonus*, from the same island, is figured as with 11 ribs, but without any wool.

4. ESCONTRIA Rose, Contr. Nat. Herb. 10: 125. 1906.

Large and much branched plants; ribs few; spines all similar, arranged in peculiar pectinate clusters; flowers small, yellow, tubular, one from an areole, diurnal; ovary globular, covered with imbricating chartaceous translucent persistent scales without spines or hairs; petals erect, narrow; stamens and style included; fruit globular, scaly, purple, fleshy, edible; seeds numerous, black.

Type species *Cereus chiotilla* Weber.

Only one species is known.

Escontria chiotilla (Weber) Rose, Contr. Nat. Herb. 10: 126. 1906. PLATE LXV.

Cereus chiotilla Weber; Schum. Gesamtb. Kakteen 83. 1899.

TYPE LOCALITY: "Oajaca."

DISTRIBUTION: Oaxaca, Mexico.

ILLUSTRATIONS: Rose, loc. cit. pl. 43A.

EXPLANATION OF PLATE LXV.—From a photograph taken by Dr. D. T. MacDougal.

5. PACHYCEREUS gen. nov.

Usually very large plants, more or less branched from a definite trunk; flowers diurnal (?), with a rather short tube; petals short, spatulate; stamens included, numerous, inserted along the throat; style included; ovary and tube covered with small bracts and woolly hairs and bristles; fruit large, bur-like, dry, densely covered with clusters of deciduous spines and bristles; seeds large and black.

Type species *Cereus pringlei* S. Wats.

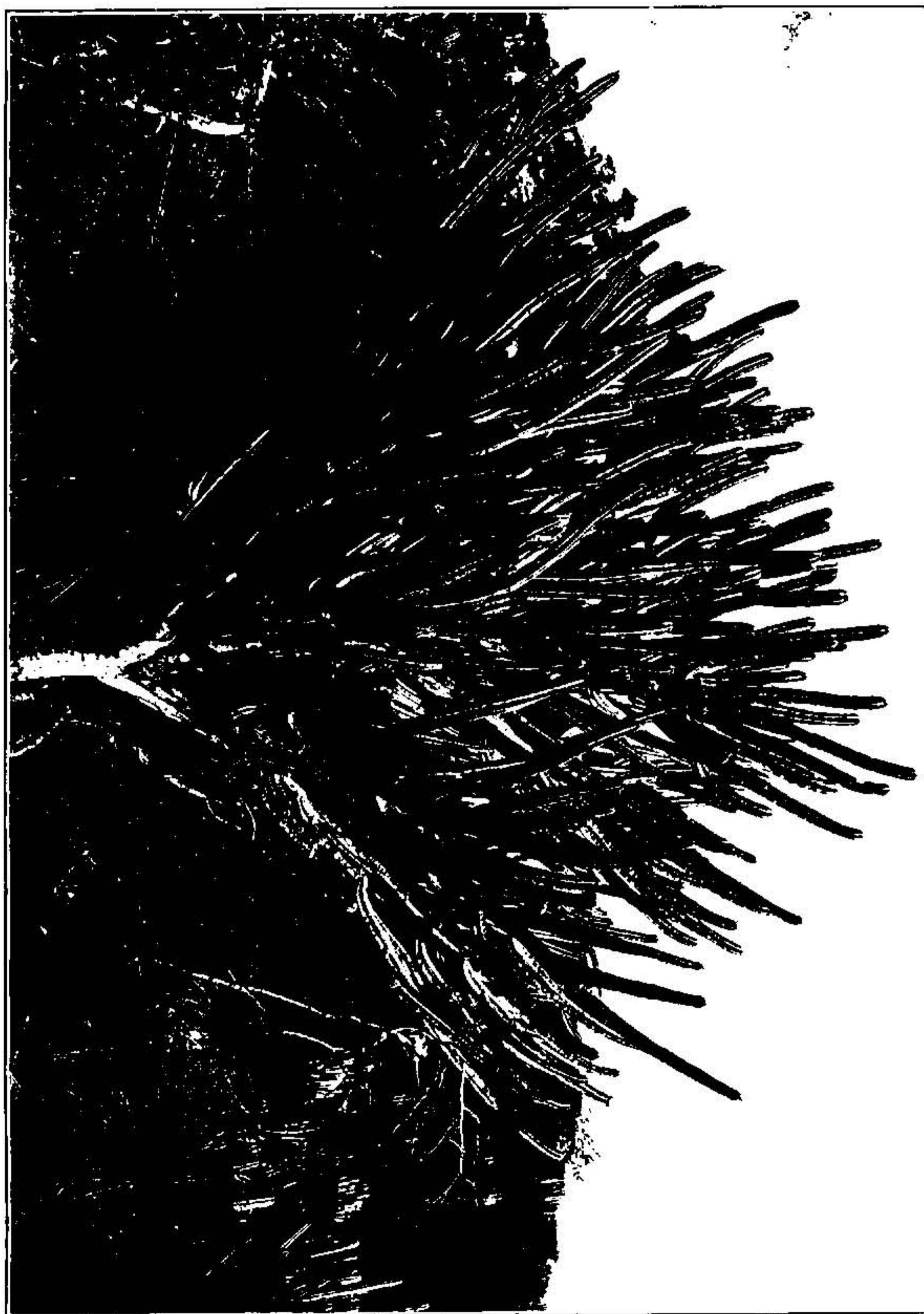
This was made a subgenus by A. Berger, whose name we have adopted.

Pachycereus calvus (Engelm.).

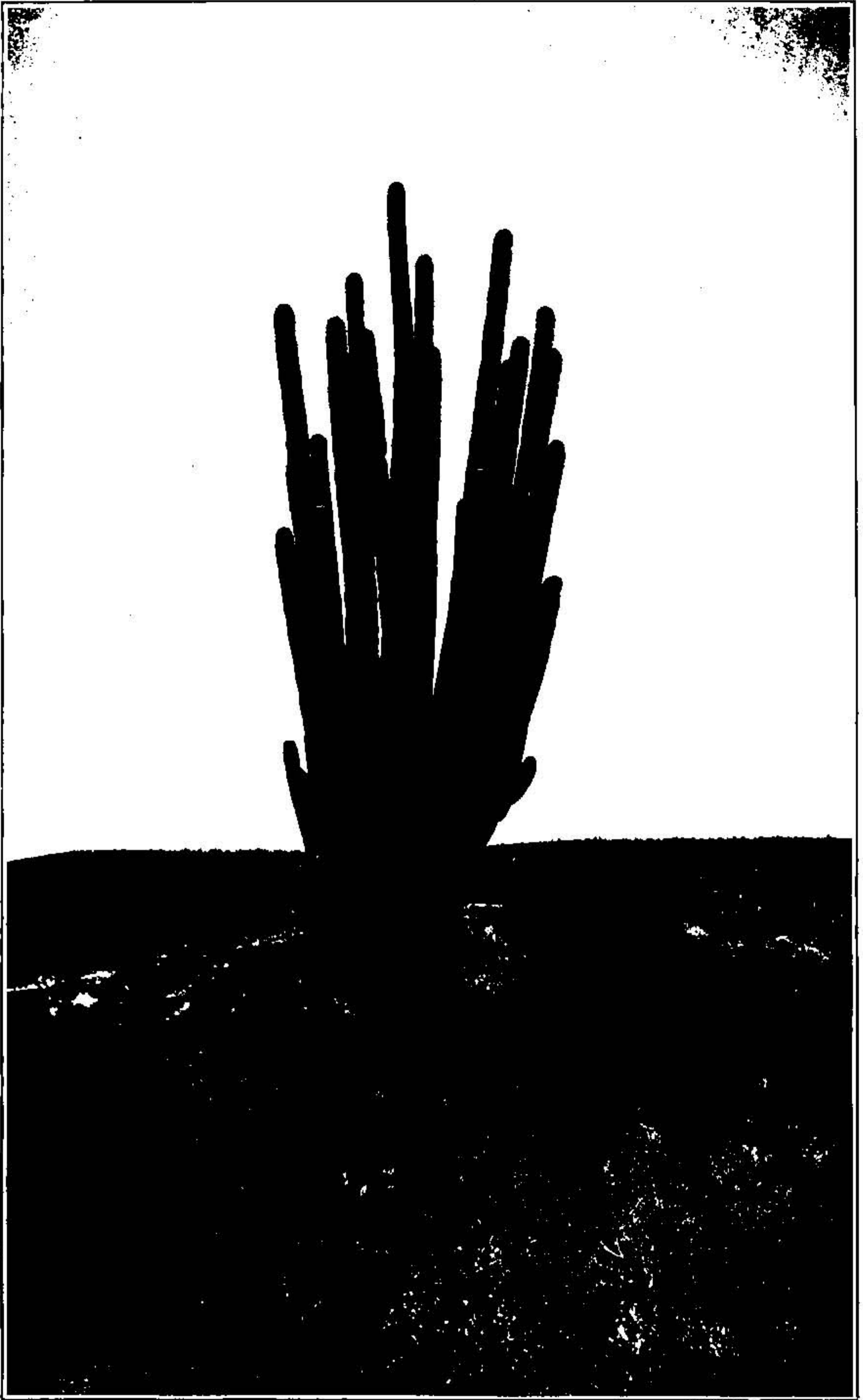
Cereus calvus Engelm.; Coult. Contr. Nat. Herb. 3: 409. 1896.

TYPE LOCALITY: "From Cape San Lucas northward," Lower California.

DISTRIBUTION: Southern Lower California.



ESCONTRIA CHIOTILLA (WEBER) ROSE.



PACHYCEREUS CHRYSOMALLUS (LEM.) BRITTON & ROSE.

Pachycereus chrysomallus (Lem.)

PLATE LXVI.

Cephalocereus chrysomallus (Lem.) Schum. in Engl. & Prantl, Pflanzenfam. 3^{ta}: 182. 1894.

Pilocereus chrysomallus Lem. Fl. Serres 3: sub pl. 242. 1847.

Cereus chrysomallus Hemsl. Biol. Centr. 1: 541. 1880.

Pilocereus fulviceps Weber; Schum. Gesamtb. Kakteen 176. 1899.

Cereus fulviceps Berger, Ann. Rep. Mo. Bot. Gard. 16: 64. 1905.

Pilocereus rupiceps Weber; Gosselin, Bull. Mus. Paris 11: 506. 1905.

TYPE LOCALITY: In Mexico.

DISTRIBUTION: Puebla and Oaxaca, Mexico.

ILLUSTRATIONS: Contr. Nat. Herb. 10: pl. 18; MacDougal, Bot. N. Am. Deserts pl. 16.

EXPLANATION OF PLATE LXVI.—From a photograph taken by Dr. D. T. MacDougal.

Pachycereus columna-trajani (Karw.).

Cephalocereus columna-trajani (Karw.) Schum. in Engl. & Prantl, Pflanzenfam. 3^{ta}: 182. 1894.

Cereus columna-trajani Karw.; Pfeiff. Enum. Cact. 76. 1837.

Pilocereus columna Lem. Cact. Gen. & Sp. 9. 1839.

Pilocereus lateribarbus Pfeiff.; Rümpl. Först. Handb. Cact. ed. 2. 672. 1886.

Cereus tetazo Coult. Contr. Nat. Herb. 3: 409. 1896.

Pilocereus tetazo Weber; Schum. Gesamtb. Kakteen 175. 1899.

TYPE LOCALITY: San Sebastián, Puebla, Mexico.

DISTRIBUTION: Puebla and Oaxaca, Mexico.

ILLUSTRATIONS: Rev. Hortic. 1890: 129. f. 40; MacDougal, Bot. N. Am. Deserts pl. 22.

Pachycereus grandis Rose, sp. nov.

Large plants 6 to 10 meters high, often with a single erect trunk but generally, especially in old plants, much branched near the base, the trunk sometimes 1 meter in diameter; branches columnar and generally simple, becoming erect almost from the first, repeatedly constricted (this especially noticeable from a distance), pale green in color; ribs 9, 10, or 11, acute; areoles 2 to 3 cm. apart, not running together nor extending below the spines as in *P. pecten-aboriginum*; old spines grayish or white with black tips; radial spines 9 or 10; centrals 3, the lower one longer (sometimes 6 cm. long), somewhat flattened laterally, the two upper opposite, similar to the radial; flowering areoles very large, elliptical, 2 cm. long, thickly set below with stout brown bristles, in the upper half with short yellow bristles; flowers rather small, about 4 cm. long; ovary and corolla tube covered with tawny wool; fruit large, globular, dry, covered with long yellow bristles and yellowish wool.

Collected on the pedregal near Cuernavaca by J. N. Rose and J. S. Rose, August 14, 1906 (no. 11087).

Type U. S. National Herbarium no. 453872.

This giant cactus is common on the edge of the pedregal near Cuernavaca and extends for many miles down the valley southward.

The species is near *P. pecten-aboriginum* but is generally more branched and probably larger. Technically, it has very different areoles and much longer spines.

Pachycereus marginatus (DC.).

Cereus marginatus DC. Mem. Mus. Paris 17: 116. 1828.

Cereus gemmatus Zucc.; Pfeiff. Enum. Cact. 96. 1837.

TYPE LOCALITY: Mexico.

DISTRIBUTION: Hidalgo, Querétaro, and Guanajuato, Mexico.

ILLUSTRATIONS: Contr. Nat. Herb. 5: pl. 59, 60.

Pachycereus orcuttii (K. Brandegeee).*Cereus orcuttii* K. Brandegeee, *Zoe* 5: 3. 1900.

TYPE LOCALITY: Rosario, Lower California.

DISTRIBUTION: Known only from the type locality.

Pachycereus pringlei (S. Wats.).*Cereus pringlei* S. Wats. Proc. Am. Acad. 20: 368. 1885.

TYPE LOCALITY: "South of the Altar River," Sonora, Mexico.

DISTRIBUTION: Sonora and northeastern Lower California.

ILLUSTRATION: Ann. Rep. Mo. Bot. Gard. 16: pl. 1.

Pachycereus pecten-aboriginum (Engelm.).*Cereus pecten-aboriginum* Engelm.; S. Wats. Proc. Am. Acad. 21: 429. 1886.

TYPE LOCALITY: Hacienda San Miguel, Chihuahua.

DISTRIBUTION: Chihuahua and Sonora; southern Lower California.

ILLUSTRATION: Gard. & For. 7: f. 54. Contr. Nat. Herb. 5: pl. 57, 58, f. 32.

Pachycereus queretarensis (Weber).*Cereus queretarensis* Weber; Mathsson, Monatssch. Kakteenk. 1: 28. 1891.

TYPE LOCALITY: In Querétaro, Mexico,

DISTRIBUTION: Central Mexico.

Pachycereus titan (Engelm.).*Cereus titan* Engelm.; Coult. Contr. Nat. Herb. 3: 409. 1896.

TYPE LOCALITY: From Cape San Lucas to San Quentin, Lower California.

DISTRIBUTION: Southern Lower California.

6. HARRISIA Britton, Bull. Torr. Club 35: 561. 1908.

Night-flowering cacti with slender upright-branched cylindrical stems, the branches fluted, with from 8 to 11 rounded ribs separated by shallow grooves bearing areoles at frequent intervals, each areole with several acicular spines; flowers borne at areoles near the ends of the branches, funnellform, large, with a cylindrical scaly but spineless tube as long as the limb or longer; buds globose, ovoid or obovoid, densely scaly, the scales bearing long or short woolly hairs; sepals pink or greenish, linear-lanceolate; petals white; stamens shorter than the petals; style somewhat longer than the stamens; fruit globose to ovoid-globose, green to yellow, spineless but with deciduous scales, the corolla withering-persistent; seeds very numerous, small.

Type species *Cereus gracilis* Mill.**Harrisia eriophora** (Pfeiff.) Britton, Bull. Torr. Club 35: 562. 1908.*Cereus cubensis* Zucc.; Seitz, Allg. Gartenz. 2: 244. 1834.*Cereus eriophorus* Pfeiff. Enum. Cact. 94. 1837.

TYPE LOCALITY: Cuba.

DISTRIBUTION: Cuba.

ILLUSTRATION: Pfeiff. & Otto, Abb. u. Beschr. Cact. pl. 22; Blühende Kakteen pl. 84.

Harrisia brookii Britton, Bull. Torr. Club 35: 564. 1908.

TYPE LOCALITY: Georgetown, Long Island, Bahamas.

DISTRIBUTION: Bahama Islands; Florida Keys.

Harrisia fernowi Britton, Bull. Torr. Club 35: 562. 1908.*Cereus pellucidus* Griseb. Cat. Pl. Cub. 116. 1866, not Otto, 1837.

TYPE LOCALITY: Between Rio Grande and Rio Ubero in eastern Cuba.

DISTRIBUTION: Eastern Cuba.

Harrisia gracilis (Mill.) Britton, Bull. Torr. Club **35**: 563. 1908.

Cereus gracilis Mill. Gard. Dict. ed. 8. no. 8. 1768.

Cereus repandus Haw. Syn. Pl. Succ. 183. 1812, not *Cactus repandus* L. 1753.

?*Cereus subrepandus* Haw. Suppl. Pl. Succ. 78. 1819.

TYPE LOCALITY: "British Islands of America."

DISTRIBUTION: Jamaica.

Harrisia nashii Britton, Bull. Torr. Club **35**: 564. 1908.

TYPE LOCALITY: Between Gonaives and Plaisance, Haiti.

DISTRIBUTION: Haiti.

ILLUSTRATION: Descourt. Fl. Med. Antill. 1: pl. 66, as *Cactus divaricatus*.

Harrisia portoricensis Britton, Bull. Torr. Club **35**: 563. 1908.

TYPE LOCALITY: Near Ponce, Porto Rico.

DISTRIBUTION: Porto Rico.

Harrisia taylora Britton, Bull. Torr. Club **35**: 565. 1908.

TYPE LOCALITY: Between Rio Grande and Rio Ubero, in eastern Cuba.

DISTRIBUTION: Cuba.

Harrisia undata (Pfeiff.) Britton, Bull. Torr. Club **35**: 564. 1908.

Cereus undatus Pfeiff. Enum. Cact. 94. 1837.

TYPE LOCALITY: Not given.

DISTRIBUTION: Eastern Cuba.

ILLUSTRATIONS: Pfeiff. & Otto, Abb. u. Besch. Cact. pl. 23.

The following two species now under *Cereus* are likely to prove to be members of this genus:

CEREUS DIVARICATUS Lam. Encycl. 1: 540. 1783.

Cereus divergens Pfeiff. Enum. Cact. 95. 1837.

Pilocereus divaricatus Lem. Rev. Hort. **1862**: 427. 1862.

TYPE LOCALITY: Santo Domingo.

DISTRIBUTION: Santo Domingo and Haiti.

ILLUSTRATION: Plumier, Pl. Amer. ed. Burmann pl. 198.

CEREUS ERECTUS Karw.; Pfeiff. Enum. Cact. 95. 1837.

TYPE LOCALITY: Mexico.

7. NYCTOCEREUS gen. nov.

Erect or straggling, slender, sparingly branched cacti, with cylindric fluted stems and branches, the numerous areoles bearing a tuft of short white wool and small radiating acicular bristles or weak spines; flowers large, white, nocturnal; ovary bearing small scales and tufts of weak spines or bristles; corolla funnelform, the nearly cylindric tube gradually expanded above, bearing scales and tufts of weak bristles below the middle, above the middle bearing distant, narrowly lanceolate scales, which grade into the blunt outer perianth segments; inner perianth segments widely spreading, obtuse or acutish; stamens numerous, shorter than the perianth; style about as long as the stamens; fruit scaly and spiny or bristly. The genus is, perhaps, heterogamous.

Type species *Cereus serpentinus* DC.

Nyctocereus was considered a subgenus by A. Berger under this name.

Nyctocereus serpentinus (Lag. & Rodrig.).

Cactus serpentinus Lag. & Rodrig. Anal. Cienc. Nat. **4**: 261. 1801.

Cactus ambiguus Bonpl. Pl. Jard. Novar. et Malmais. pl. 38. 1803.

Cereus serpentinus DC. Prod. **3**: 467. 1828.

Cereus ambiguus DC. loc. cit.

Echinocereus serpentinus Lem. Cact. 57. 1868.

TYPE LOCALITY: None given; described from garden plant.

DISTRIBUTION: Mexico.

ILLUSTRATIONS: Link & Otto, Ic. Pl. Select. pl. 42; Bonpl. loc. cit.; DC. Mem. Mus. Paris 17: pl. 12; Bot. Mag. 64: pl. 3566; Regel, Gartenfl. pl. 1079.

Nyctocereus hirschtianus (Schum.).

Cereus hirschtianus Schum. Gesamtb. Kakteen 130. 1899.

TYPE LOCALITY: Nicaragua.

DISTRIBUTION: Known only from the type locality.

ILLUSTRATION: Gesamtb. Kakteen f. 31.

Nyctocereus neumannii (Schum.).

Cereus neumannii Schum. Gesamtb. Kakteen Nachtr. 37. 1903.

TYPE LOCALITY: Near Chiquitillo, Metagalpa, Nicaragua.

DISTRIBUTION: Known only from the type locality.

8. CARNEGIEA Britt. & Rose, Journ. N. Y. Bot. Gard. 9: 187. 1908.

Usually very large plants with stout upright stems and few or no branches, strongly ribbed, the spines on flowering and sterile areoles very different; flowers borne on the uppermost areoles, diurnal, funnellform, thickish, the tube nearly cylindrical, about half as long as the limb, bearing a few broadly triangular, ovate, acute scales with tufts of wool in their axils; petals white, short, widely spreading and somewhat reflexed when fully expanded; ovary spineless or nearly so, oblong, covered with scales similar to those of the tube but somewhat closer together; stamens very numerous, about three-quarters as long as the petals; stigmas 12 to 18, narrowly linear, reaching a little above the stamens; fruit an oblong or somewhat obovoid berry containing red pulp and bearing small distinct scales; seeds very small, numerous, black, and shining.

Type species *Cereus giganteus* Engelm.

Carnegiea gigantea (Engelm.) Britt. & Rose, Journ. N. Y. Bot. Gard. 9: 188. 1908.

Cereus giganteus Engelm. in Emory, Notes Mil. Rec. 158. 1848.

Pilocereus engelmannii Lem. Ill. Hortie. 9: misc. 97. 1862.

Pilocereus giganteus Haage & Schmidt, Cat. 230. 1898.

TYPE LOCALITY: Along the Gila River, Arizona.

DISTRIBUTION: Arizona, southeastern California; Sonora, Mexico.

ILLUSTRATIONS: Cact. Mex. Bound. pl. 61, 62; Bot. Mag. pl. 7222; Journ. N. Y. Bot. Gard. 9: pls. 49, 50.

9. LEMAIROCEREUS gen. nov.

Plants usually very large, tall and branching or sometimes prostrate; spines usually stout and numerous; flowers diurnal, single at the areoles, with a more or less elongated funnellform tube; stamens numerous, borne in many rows all along the surface of the throat; surface of ovary covered with fleshy tubercles, each crowned by a small bract; axils of the bracts filled with short hairs or dense wool, at first spineless but soon developing a cluster of spines; fruit globular to oval, beset with deciduous spines, in most species, at least, irregularly bursting when old, exposing the seeds, often edible; seeds many, black.

Type species *Cereus hollianus* Weber.

Lemaireocereus cumengei (Weber).

Cereus cumengei Weber, Bull. Mrs. Hist. Nat. Paris 1: 317. 1895.

TYPE LOCALITY: Lower California.

DISTRIBUTION: Lower California.



LEMAIREOCEREUS GRISEUS (HAW.) BRITTON & ROSE.



LEMNAEOCLEIS MIXTECENSIS - PURPUS BRITTON & ROSE.

Lemaireocereus dumortieri (Salm-Dyck).*Cereus dumortieri* Salm-Dyck, Cact. Hort. Dyck. ed. 2. 210. 1850.? *Cereus anisacanthus* DC. Mem. Mus. Paris 17: 116. 1828.

TYPE LOCALITY: Not cited.

DISTRIBUTION: Michoacan, Zacatecas, Hidalgo, and Morelos, Mexico.

Lemaireocereus eruca (Brandege).*Cereus eruca* Brandege, Proc. Cal. Acad. II. 2: 163. 1889.

TYPE LOCALITY: "Magdalena Island and about San Jorge," Lower California.

DISTRIBUTION: Lower California.

ILLUSTRATION: Brandege, loc. cit. pl. 7.

Lemaireocereus griseus (Haw.).

PLATE LXVII.

Cereus griseus Haw. Syn. Pl. Succ. 182. 1812.*Cereus eburneus* Salm-Dyck, Obs. Bot. 6. 1822.*Echinocactus pruinosus* Otto; Pfeiff. Enum. Cact. 54. 1837.*Cereus pruinosus* Otto; Först. Handb. Cact. 398. 1846.*Cereus clavatus* Otto & Dietr. Allg. Gartenz. 6: 28. 1838.*Cereus laerigatus* Salm-Dyck, Cact. Hort. Dyck. ed. 2. 204. 1850.

TYPE LOCALITY: South America.

DISTRIBUTION: Mexico to Venezuela.

EXPLANATION OF PLATE LXVII.—From a photograph taken by Mr. G. N. Collins. Scale about 1.

Lemaireocereus gummosus (Engelm.).*Cereus gummosus* Engelm.; Brandege, Proc. Cal. Acad. II. 2: 162. 1889.

TYPE LOCALITY: Southern Lower California.

DISTRIBUTION: Lower California.

Lemaireocereus hystrix (Salm-Dyck).*Cactus hystrix* Salm-Dyck, Obs. Bot. 7. 1822.*Cereus hystrix* Salm-Dyck; DC. Prod. 3: 464. 1828.

DISTRIBUTION: Jamaica; Haiti; Cuba.

ILLUSTRATION: Journ. N. Y. Bot. Gard. 10: f. 20.

Lemaireocereus hollianus (Weber).*Cereus hollianus* Weber; Coult. Contr. Nat. Herb. 3: 411. 1896.*Cereus barosus* Weber; Schum. Gesamtb. Kakteen 84. 1899.

TYPE LOCALITY: Tehuacán, Puebla, Mexico.

DISTRIBUTION: Puebla.

Lemaireocereus mixtecensis (Purpus).

PLATE LXVIII.

Cereus mixtecensis Purpus, Monatssch. Kakteenk. 19: 52. 1908.

TYPE LOCALITY: Sierra de Mixteca, Oaxaca, Mexico.

DISTRIBUTION: Puebla and Oaxaca, Mexico.

ILLUSTRATION: Purpus loc. cit. 53.

This species is perhaps nearest *Lemaireocereus stellatus*.

EXPLANATION OF PLATE LXVIII.—From a photograph taken by Dr. D. T. MacDougal.

Lemaireocereus schumanni (Mathsson).*Cereus schumanni* Mathsson; Schum. Monatssch. Kakteen 9: 131. 1899.

TYPE LOCALITY: Honduras.

DISTRIBUTION: Known only in cultivation.

Lemaireocereus stellatus (Pfeiff.).

PLATE LXIX.

Cereus stellatus Pfeiff. Allg. Gartenz. 4: 258. 1836.*Cereus dyckii* Mart.; Pfeiff. Enum. Cact. 87. 1837.*Cereus tonellianus* Lem. Ill. Hortie. 2: misc. 63. 1855.

TYPE LOCALITY: Central Mexico.

DISTRIBUTION: Mexico.

ILLUSTRATION: Berger, Ann. Rep. Mo. Bot. Gard. 16: pl. 3. f. 1-4.

EXPLANATION OF PLATE LXIX.—From a photograph taken by Dr. D. T. MacDougal.

Lemaireocereus thurberi (Engelm.).*Cereus thurberi* Engelm. Am. Journ. Sci. II. 17: 234. 1854.

TYPE LOCALITY: Canyon near the mountain pass of Bachuachi.

DISTRIBUTION: Sonora and Lower California.

ILLUSTRATION: Engelm. Cact. Mex. Bound. pl. 74. f. 15.

Lemaireocereus treleasei Rose, sp. nov.

PLATE LXX.

Plants 5 to 7 meters high, simple or with a few strict branches; ribs about 20; areoles closely set, each with a peculiar V-shaped depression just above it; spines rather short, yellowish; flowers pinkish, 4 to 5 cm. long, diurnal; bracts on ovary and flower tube bearing slender whitish bristles; fruit red, about 5 cm. in diameter, covered with clusters of deciduous spines; seeds black with a dull rugose surface and a large oblique basal hilum.

Collected by J. N. Rose on the road between Mitla and Oaxaca, September 5, 1906 (no. 11300, type). The species had previously been collected by Dr. William Trelease in this same region.

Type U. S. National Herbarium no. 454090.

This species has flowers and fruit much resembling those of *Lemaireocereus stellatus*, but it has a different habit, the stems have more ribs, and it has different areoles. Mr. C. H. Thompson, of the Missouri Botanical Garden, has called my attention to the fact that this V-shaped groove is not known to occur in any of our North American species of *Cereus*, but is a character of several South American species.

EXPLANATION OF PLATE LXX.—From a photograph taken by Dr. D. T. MacDougal.

Lemaireocereus weberi (Coul.).

PLATE LXXI.

Cereus weberi Coul. Contr. Nat. Herb. 3: 410. 1896.*Cereus candelabrum* Weber; Schum. Gesamtb. Kakteen 106. 1899.

TYPE LOCALITY: A few miles south of Tehuacán, Puebla, Mexico.

DISTRIBUTION: Puebla, Mexico.

ILLUSTRATIONS: Gesamtb. Kakteen loc. cit. f. 24; MacDougal, Bot. N. Am. Deserts pl. 21.

EXPLANATION OF PLATE LXXI.—From a photograph taken by Dr. D. T. MacDougal.

Near *L. griseus* belong:

CEREUS CHENDE Gosselin, Bull. Mus. Hist. Nat. Paris 11: 506. 1903.

CEREUS CHICHIPE Gosselin, Bull. Mus. Hist. Nat. Paris 11: 507. 1903.

See Monatssch. Kakteenk. 18: 155. 1908.

10. **LOPHOCEREUS** gen. nov.

Plants either simple or with a few branches, or much branched at base; ribs few, areoles on the lower part of stem very different from the upper ones; flowering areoles (in the wild state) developing long bristle-like hairs standing out at right angles to the axis of the stem; flowers several from each areole, small (4 cm. or less long), funnelliform with a narrow short tube; petals red; stamens short, included; fruit small, red, globular, less than 2 cm. in diameter, glabrous or with a few spines in the axils of small bracts; seeds numerous, small, black, shining, with a basal depressed hilum.

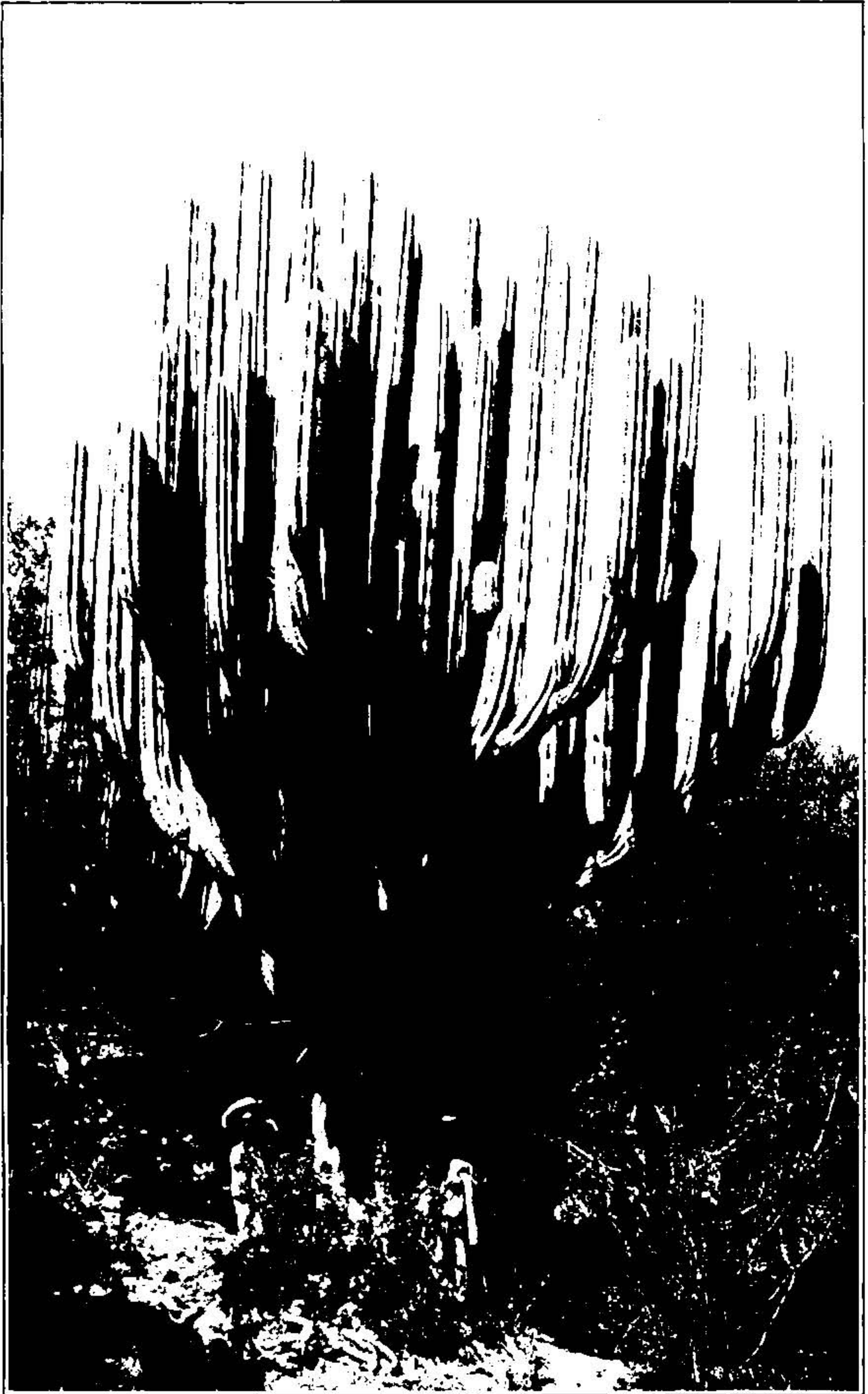
Type species *Cereus schottii* Engelm.



LEMNAIREOCEREUS STELLATUS (PFEIFF.) BRITTON & ROSE.



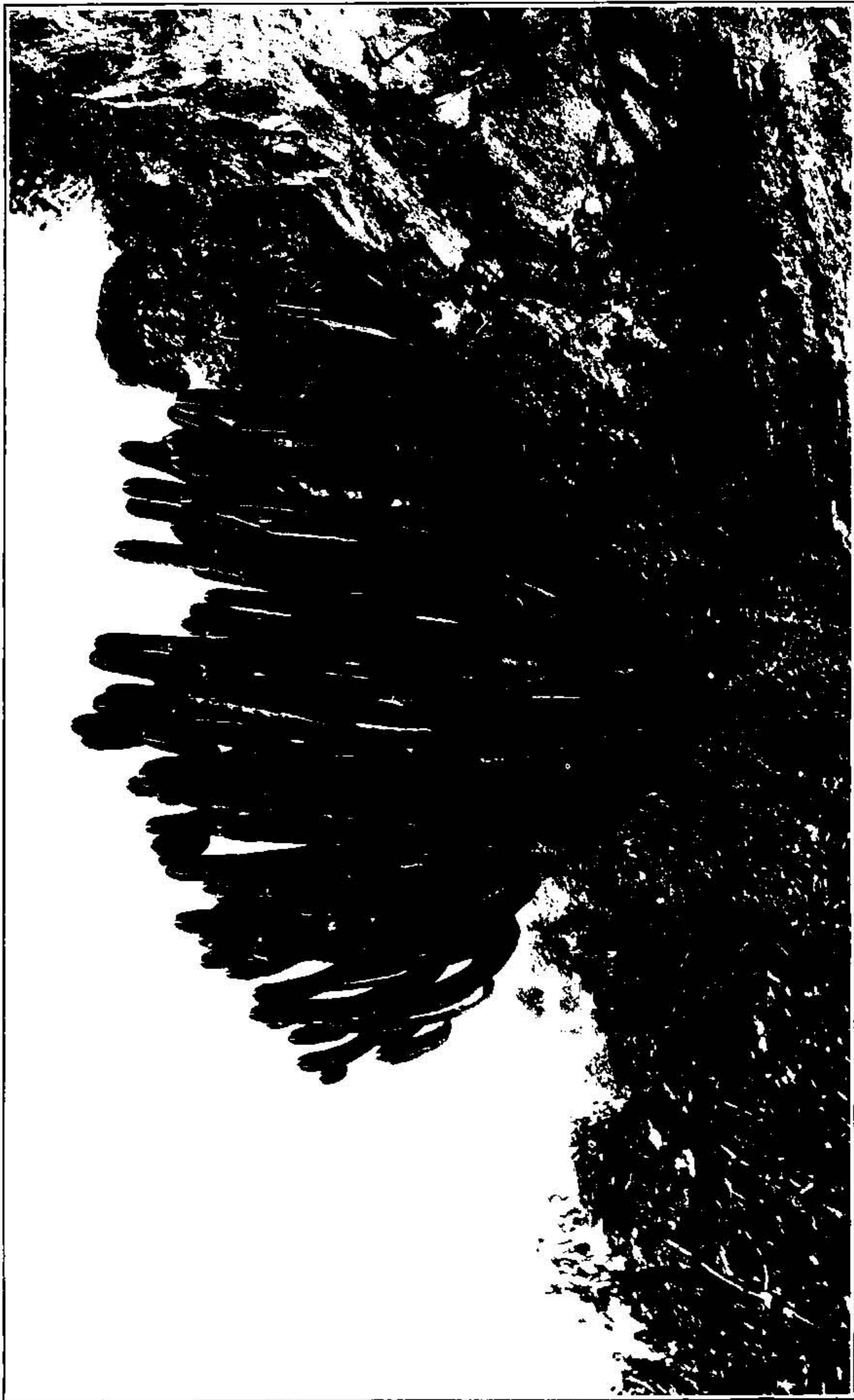
LEMAIREOCEREUS TREALEASII ROSE.



LEMAIREOCEREUS WEBERI (COULT.) BRITTON & ROSE.



MYRTILLOCACTUS GEOMETRIZANS (MART.) CONSOLE.



MYRTILLOCACTUS SCHENCKII (PURPUS) BRITTON & ROSE.

Lophocereus australis (K. Brandegeee).*Cereus schottii australis* K. Brandegeee, *Zoe* 5: 4. 1900.

TYPE LOCALITY: Not cited.

DISTRIBUTION: Southern Lower California and southwestern Sonora.

Lophocereus sargentianus (Orcutt).*Cereus sargentianus* Orcutt, *Gard. & For.* 4: 436. 1891.*Pilocereus sargentianus* Orcutt, *Monatssch. Kakteenk.* 2: 76. 1892.

TYPE LOCALITY: San Quentin, Lower California.

DISTRIBUTION: Northern Lower California.

ILLUSTRATION: Orcutt, *Gard. & For.* loc. cit. f. 69; *Monatssch. Kakteenk.* 5: 87.**Lophocereus schottii** (Engelm.).*Cereus schottii* Engelm. *Proc. Am. Acad.* 3: 288. 1856.*Pilocereus schottii* Lem. *Rev. Hortie.* 1862: 428. 1862.*Cereus palmeri* Engelm.; *Coult. Contr. Nat. Herb.* 3: 401. 1896.

TYPE LOCALITY: Toward Santa Magdalena, Sonora, Mexico.

DISTRIBUTION: Sonora, Arizona, and northeastern Lower California.

ILLUSTRATIONS: *Bot. Mex. Bound. pl.* 74. f. 16 (seed); *Gesamtb. Kakteen* f. 37, 38.**11. MYRTILLOCACTUS** Console, *Bull. Ort. Bot. Palermo* 1: 8. 1897.

Plants usually with a single trunk and a large much-branched top; ribs few; spines of all the areoles similar; flowers diurnal, very small, several from a single areole, with a very short tube and widely spreading petals; ovary bearing a few minute bracts, spineless; fruit a small globular edible berry; seeds small, black, with a basal hilum.

Type species *Cereus geometrizzans* Mart.**Myrtillocactus cochal** (Orcutt).*Cereus cochal* Orcutt, *West. Am. Scientist* 6: 29. 1899.*Cereus geometrizzans cochal* K. Brandegeee, *Zoe* 5: 4. 1900.

TYPE LOCALITY: Todos Santos Bay, Lower California.

DISTRIBUTION: Lower California.

ILLUSTRATION: *Monatssch. Kakteenk.* 5: 74.**Myrtillocactus geometrizzans** (Mart.) Console, *Bull. Ort. Bot. Palermo* 1: 8. 1897.

PLATE LXXII.

Cereus geometrizzans Mart.; *Pfeiff. Enum. Cact.* 90. 1837.*Cereus pugionifer* Lem. *Cact. Nov.* 30. 1838.*Cereus quadrangulispinis* Lem.; *Ehrenb. Linnaea* 19: 363. 1847, hyponym.

TYPE LOCALITY: Mexico.

DISTRIBUTION: San Luis Potosí to Oaxaca, Mexico.

ILLUSTRATIONS: *Karsten, Ber. Deutsch. Bot. Gesell.* 15: pl. 2; *Schum. Gesamtb.* f. 23.

EXPLANATION OF PLATE LXXII.—From a photograph taken by Dr. D. T. MacDougal.

Myrtillocactus schenckii (Purpus).

PLATE LXXIII.

Cereus schenckii Purpus, *Monatss. Kakteenk.* 19: 38. 1909.

TYPE LOCALITY: "Sierra de Mixteca."

DISTRIBUTION: Puebla and Oaxaca, Mexico.

ILLUSTRATION: Purpus, loc. cit. 39.

EXPLANATION OF PLATE LXXIII.—From a photograph taken by Dr. D. T. MacDougal.

12. **PENIOCEREUS** gen. nov.

Plants low, slender, erect from an enormous fleshy, turnip-shaped root, usually 4 or 5-ribbed, rarely 3 or 6-ribbed; spines of all the areoles similar; flowers very large for the size of the plant, only one from a single areole, nocturnal, white or tinged with red; tube of flower long, slender, with small clusters of spines scattered over the outer surface; fruit ovoid, long-acuminate, bright scarlet, fleshy and edible with elevated spineless areoles; seeds black, rugose, with a large oblique hilum.

Type species *Cereus greggii* Engelm.

Peniocereus was considered a subgenus of *Cereus* by A. Berger, whose name we have adopted.

Peniocereus greggii (Engelm.).

PLATES LXXIV, LXXV.

Cereus greggii Engelm. in Wislitz. Mem. Tour North. Mex. 102. 1848.

Cereus pottsii Salm-Dyck, Cact. Hort. Dyck. ed. 2. 208. 1850.

Cereus greggii transmontanus Engelm. Proc. Am. Acad. 3: 287. 1856.

TYPE LOCALITY: North and south of Chihuahua, Mexico.

DISTRIBUTION: Texas to Arizona; Sonora, Chihuahua, and Zacatecas, Mexico.

ILLUSTRATIONS: Engelm. Cact. Mex. Bound. pl. 63-65; Schum. Monatsch. Kakteenk. 5: 150, 151; Gesamtb. Kakteen f. 18.

EXPLANATION OF PLATES LXXIV, LXXV.—Pl. LXXIV, A, root; B, plant in flower. Pl. LXXV, A, flowers; B, plant in flower. All from photographs taken by Francis E. Lloyd.

13. **HYLOCEREUS** gen. nov.

Climbing cacti, with elongated, 3-angled or 3-winged stems and branches emitting aerial roots, their areoles bearing several short spines and a tuft of very short wool; flowers very large, nocturnal, funnellform, the limb as long as the tube or longer; ovary and tube bearing large foliaceous scales but without spines, wool, or hairs; outer perianth segments similar to the scales of the tube, but longer; petaloid perianth segments narrow, acute or acuminate, mostly white; stamens very many, in two series equalling or shorter than the style; style cylindric, rather stout, the linear stigmas numerous; fruit with several or many persistent foliaceous scales.

Type species *Cereus triangularis* (L.) Haw.

Hylocereus was considered a subgenus of *Cereus* by A. Berger under this name.

Hylocereus calcaratus (Weber).

Cereus calcaratus Weber, Bull. Mus. Hist. Nat. 8: 458. 1902.

TYPE LOCALITY: Valley of Tuis, Costa Rica.

DISTRIBUTION: Costa Rica.

This species belongs to this genus, not to *Selenicereus*.

Hylocereus costaricensis (Weber).

Cereus trigonus costaricensis Weber, Bull. Mus. Hist. Nat. 8: 457. 1902.

TYPE LOCALITY: Costa Rica.

DISTRIBUTION: Costa Rica, Central America.

Older joints gray-glaucous, like those of *H. ocumponis*.

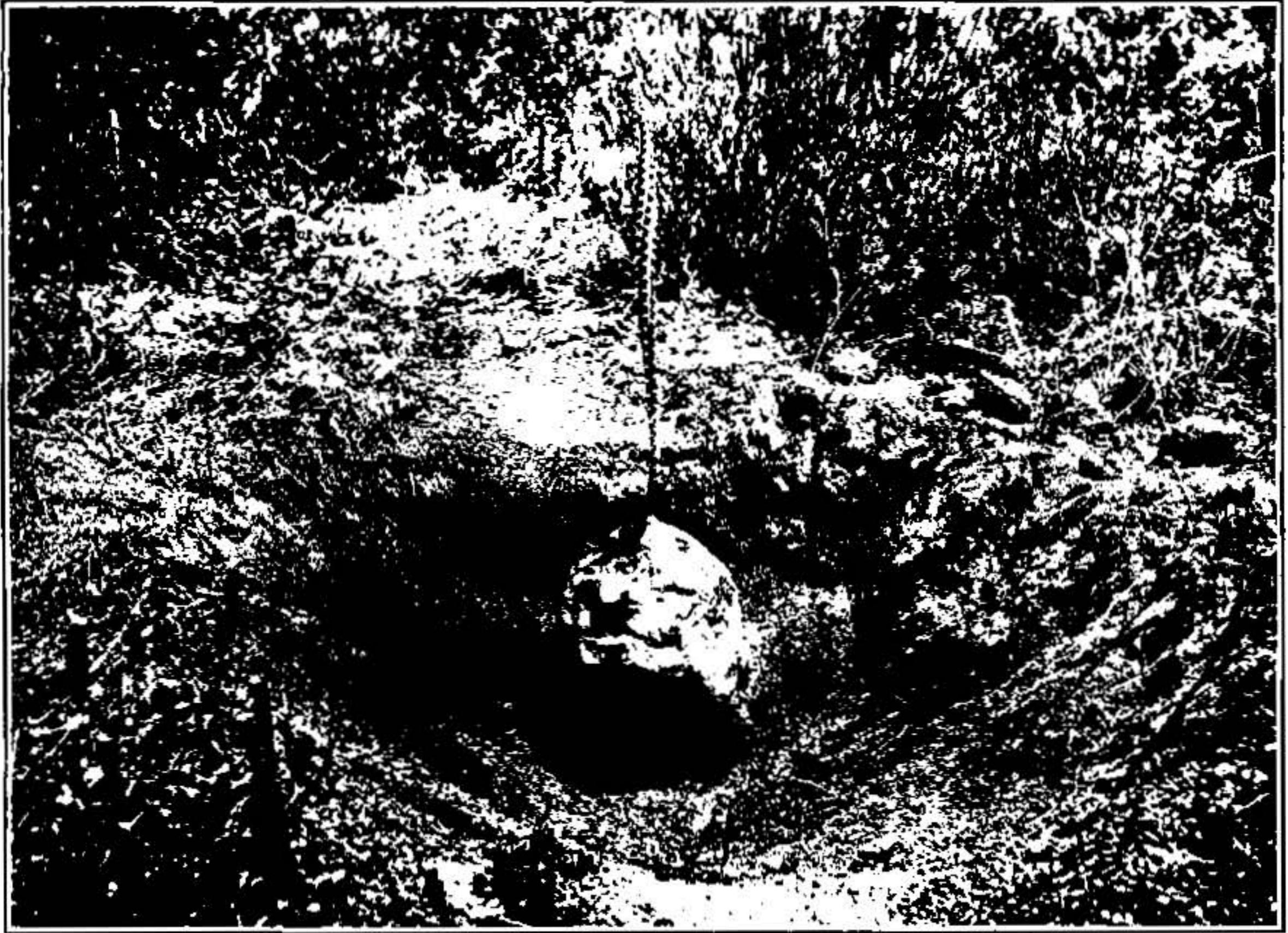
Eylocereus lemairei (Hook.).

Cereus lemairei Hook. Bot. Mag. 80: pl. 4814. 1854.

TYPE LOCALITY: Thought to be Antigua.

DISTRIBUTION: Antigua, Montserrat, Culebra(?), and Porto Rico(?), Antilles.

ILLUSTRATION: Bot. Mag. loc. cit.



A



B

PENIOCEREUS GREGGII (ENGELM.) BRITTON & ROSE.



A



B

PENIOCEREUS GREGGII ENGELM., BRITTON & ROSE.

Hylocereus napoleonis (Graham).*Cereus napoleonis* Graham, Bot. Mag. **63**: pl. 3458. 1836.*Cereus triangularis major* Salm-Dyck, in Pfeiff. Enum Cact. 117. 1837, as synonym.

TYPE LOCALITY: Unknown; described from a cultivated plant.

DISTRIBUTION: West Indies and southern Mexico, according to Schumann.

ILLUSTRATION: Bot. Mag. loc. cit.

Hylocereus ocamponis (Salm-Dyck).*Cereus ocamponis* Salm-Dyck, Cact. Hort. Dyck. ed. 2. 220. 1850.

TYPE LOCALITY: Mexico or Colombia.

DISTRIBUTION: Mexico?

Hylocereus stenopterus (Weber).*Cereus stenopterus* Weber, Bull. Mus. Nat. Hist. **8**: 458. 1902.

TYPE LOCALITY: "Vallée de Tuis," Costa Rica.

DISTRIBUTION: Costa Rica, Central America.

Hylocereus triangularis (L.).*Cactus triangularis* L. Sp. Pl. 468. 1753.*Cereus compressus* Mill. Gard. Dict. ed. 8. no. 10. 1768.*Cereus triangularis* Haw. Syn. Pl. Succ. 180. 1812.*Cereus trigonus* Haw. op. cit. 181.*Cereus anizogonus* Salm-Dyck, Cact. Hort. Dyck. ed. 2. 52. 1850, as synonym.

TYPE LOCALITY: "In Brasilia, Jamaica," according to Linnæus, but doubtless really Jamaica.

DISTRIBUTION: Southern Mexico to Panama; Jamaica; Cuba to Porto Rico; widely planted and escaped from cultivation in tropical America, the West Indies, and southern Florida.

ILLUSTRATIONS: Pluk. Alm. pl. 29. f. 3; Plumier, Pl. Am. ed. Burmann pl. 200. f. 1, 2; Bot. Mag. pl. 1884; Schum. in Mart. Fl. Bras. 4²: pl. 42.Gosselin recognizes *Cereus trigonus* as a good species.

The relative thickness of the stems is not a valid specific character in the West Indian plants of this genus.

Hylocereus tricostatus (Gosselin).*Cereus tricostatus* Gosselin, Bull. Soc. Bot. France **54**: 664. 1907.

TYPE LOCALITY: Description based on plants from two localities in Mexico, viz, Huejolitlan, Puebla, and Guadalajara, Jalisco.

DISTRIBUTION: Only known from type collection.

14. SELENICEREUS gen. nov.

Stems slender, trailing or climbing, elongated, with low ribs, giving off roots irregularly; flowers large, often very large, nocturnal; bracts of ovary and flower tube usually bearing long hairs and bristles; fruit large, reddish, covered with clusters of deciduous spines.

Type species *Cactus grandiflorus* L.*Selenicereus* was considered a subgenus of *Cereus* by A. Berger under this name.**Selenicereus boeckmanni** (Otto).*Cereus boeckmanni* Otto; Salm-Dyck, Cact. Hort. Dyck. ed. 2. 216. 1850.*Cereus eriophorus* Griseb. Cat. Pl. Cub. 116. 1866, not Pfeiff. 1837.

TYPE LOCALITY: Not cited.

DISTRIBUTION: Cuba; introduced into the Bahamas.

Selenicereus coniflorus (Weingart).*Cereus coniflorus* Weingart, Monatssch. Kakteenk. 14: 118. 1904.

TYPE LOCALITY: Supposed to be Haiti.

DISTRIBUTION: Known only from plant in cultivation.

Definitely known to us only from description.

Selenicereus grandiflorus (L.).*Cactus grandiflorus* L. Sp. Pl. 467. 1753.*Cereus grandiflorus* Mill. Gard. Dict. ed. 8, no. 11. 1768.

TYPE LOCALITY: Jamaica; Vera Cruz.

DISTRIBUTION: Jamaica, Cuba. Widely planted in tropical America and escaped from cultivation.

ILLUSTRATIONS: Trew, Pl. Ehret. pl. 31, 32; DC. Pl. Grass. pl. 52; Bot. Rep. 8: pl. 508; Bot. Mag. 62: pl. 3381; Descourt. Fl. Antill. pl. 65; Bot. Cab. 17: pl. 1625; Schum. Gesamtb. Kakteen. f. 34.

We accept Jamaica as the type locality.

Selenicereus hamatus (Scheidw.).*Cereus hamatus* Scheidw. Allg. Gartenz. 5: 371. 1837.*Cereus rostratus* Lem. Cact. Nov. 29. 1838.

TYPE LOCALITY: Mexican.

DISTRIBUTION: Southern Mexico.

ILLUSTRATION: Schum. Gesamtb. Kakteen Nachtr. f. 7 (fruit).

Selenicereus hondurensis (Schum.).*Cereus hondurensis* Schum.; Weingart, Monatssch. Kakteenk. 14: 147. 1904.*Cereus kunthianus* Schum. Gesamtb. Kakteen Nachtr. 48. 1903, not Otto. 1850.

TYPE LOCALITY: Cultivated in Berlin Botanical Garden as from Honduras.

DISTRIBUTION: Known only in cultivation.

Selenicereus kunthianus (Otto).*Cereus kunthianus* Otto; Salm-Dyck, Cact. Hort. Dyck. ed. 2. 217. 1850.Surely not *S. macdonaldiae*.

TYPE LOCALITY: Not given.

DISTRIBUTION: Only known in cultivation. Said to have come from Honduras.

Selenicereus macdonaldiae (Hook.).

PLATE LXXVI.

Cereus macdonaldiae Hook. Bot. Mag. 79: pl. 4707. 1853.

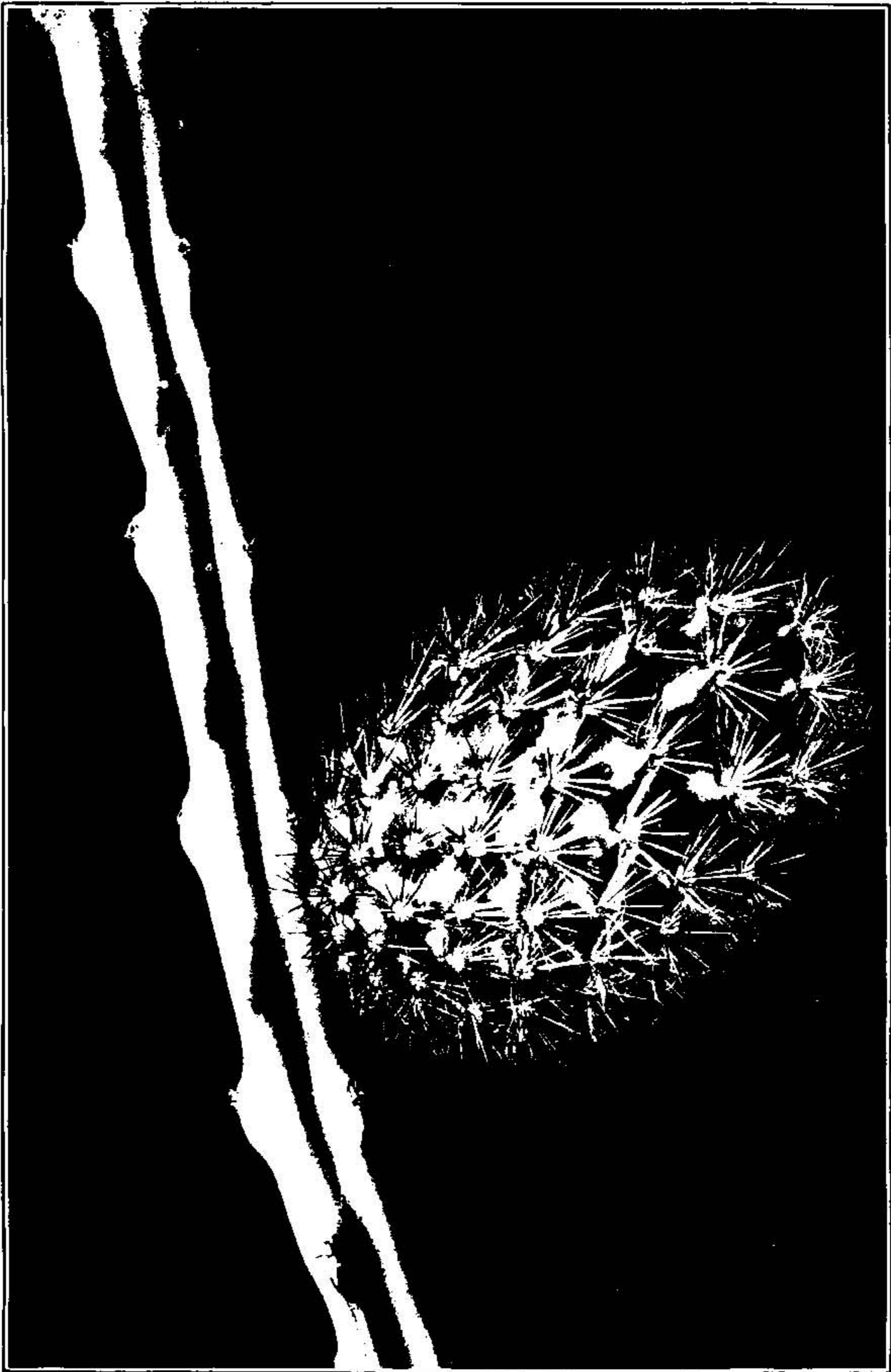
TYPE LOCALITY: Honduras.

DISTRIBUTION: Honduras.

ILLUSTRATION: Bot. Mag. loc. cit.; Planch. Fl. des Serres 9: pl. 896, 897.

EXPLANATION OF PLATE LXXVI.—Photograph of branch with fruit of a plant in the botanical garden at Washington. Scale $\frac{1}{2}$.**Selenicereus maxonii** Rose, sp. nov.

Stems light green, but often becoming deep purple throughout, often 3 cm. in diameter; ribs 5 or 6, rather prominent but less so on the older branches; areoles small, white; spines short, yellowish; reflexed bristles or hairs from the lower part of the areoles several, white, longer than the spines; flowers nocturnal, 20 cm. long; sepals and bracts linear, greenish or brownish, sometimes nearly rose-colored; petals white, rather broad; stamens numerous; style cream-colored, stout; tube proper about 10 cm. long, bearing scattered short, linear bracts, the axils bearing short white wool and long silky white hairs and white bristles; ovary similarly clothed but with the bracts more closely set. This species has flowered twice in cultivation (April and May, 1909).



SELENICEREUS MACDONALDIAE HOOK. BRITTON & ROSE.

Collected from the fibrous head of a palm (*Thrinax* sp.) about 8 meters high, near Berraco, 8 miles east of Daiquiri, province of Oriente, Cuba, altitude about 90 meters, by William R. Maxon (no. 4024), April 13, 1907. Specimens of this (07.330) have flowered twice in cultivation (April and May, 1909).

Type no. 535827 U. S. National Herbarium.

Selenicereus miravallensis (Weber).

Cereus miravallensis Weber, Bull. Mus. Hist. Nat. 8: 459. 1902.

TYPE LOCALITY: Volcano of Miravalles, Costa Rica, Central America

DISTRIBUTION: Known only from the type locality.

Selinicereus pringlei Rose, sp. nov.

Stout, high climber, yellowish green, sometimes darker green or purplish, strongly ribbed; tip of stem and of leaves pinkish; ribs 6 or 7; areoles 1 to 1.5 mm. apart; spines divaricate, at first yellow, in age white, acicular; radial spines 5 or 6; central spine 1; bristles often 5, white; flowers white, about 20 cm. long; sepals elongated, linear, 3 to 4 mm. broad; petals white, shorter than the sepals, long-acuminate; wool on flower buds, in axils of bracts, and on ovary brownish.

Collected by C. G. Pringle near Jalapa, Vera Cruz, Mexico, April 3, 1899 (no. 7841, type); also obtained in the living state by J. N. Rose of J. A. McDowell in the City of Mexico, but said to have come from the State of Vera Cruz, and again by Dr. C. A. Purpus near Consoquitla, Vera Cruz. The last two specimens are now growing at Washington.

Type U. S. National Herbarium no. 342875.

Selenicereus pteranthus (Link & Otto).

Cereus pteranthus Link & Otto, Allg. Gartenz. 2: 209. 1834.

Cereus nycticalus Link, Ver. Bef. Gartenb. 10: 372. 1834.

Cereus brevispinulus Salm-Dyck, Hort. Dyck. 339. 1834.

TYPE LOCALITY: In Mexico.

DISTRIBUTION: Mexico.

ILLUSTRATION: Ver. Bef. Gartenb. 10: pl. 4.

A common plant in conservatories.

Selenicereus spinulosus (DC.).

Cereus spinulosus DC. Mem. Mus. Paris 17: 117. 1828.

TYPE LOCALITY: Mexico.

DISTRIBUTION: Eastern Mexico.

ILLUSTRATIONS: Blühende Kakteen pl. 53.

15. WEBEROCEREUS gen. nov.

Slender climbing cacti with angled stems and branches emitting aerial roots, the areoles bearing a tuft of short wool and several weak acicular bristles; flowers pink or rose-color, nocturnal, short-funnelform or funnelform-campanulate; ovary tubercled, areolate, the areoles bearing weak filiform bristles or stiff hairs, the lower part of the corolla-tube with a few similar areoles, the upper part with a few foliaceous scales; outer perianth segments reflexed-spreading, blunt, linear-oblong, the inner lanceolate, acutish or obtuse; stamens about as long as the style; stigmas few, linear; fruit "elongated, spinose, yellow" (Schumann).

Type species *Cereus tunilla* Weber.

Weberocereus biolleyi (Weber).

Rhipsalis biolleyi Weber, Bull. Mus. Nat. 8: 467. 1902.

Cereus biolleyi Weber; Schum. Gesamtb. Kakteen Nachtr. 60. 1903.

TYPE LOCALITY: Vicinity of Port Limon, Costa Rica.

DISTRIBUTION: Costa Rica, Central America.

Weberocereus tunilla (Weber).*Cereus tunilla* Weber, Bull. Mus. Hist. Nat. 8: 460. 1902.*Cereus gonzalezii* Weber, Bull. Mus. Hist. Nat. 8: 460. 1902.

TYPE LOCALITY: Near Tablon, southwest of Cartago, Costa Rica.

DISTRIBUTION: Costa Rica, Central America.

16. WERCKLEOCEREUS gen. nov.

An elongated climbing cactus, the 3-angled or 4-angled branches emitting aerial roots, the areoles bearing short circular bristles and a tuft of very short wool; flowers nocturnal; corolla creamy-white, funnel-form, the tube nearly twice as long as the limb; ovary and corolla tube bearing many areoles each with several nearly black acicular bristles and a tuft of short black wool; outer perianth segments lanceolate, acutish, the inner broader; stamens many, bluntly pointed; style about as long as the longer stamens, with several linear stigmas; berry globose, its apex umbilicate, citron-yellow, the flesh white, the seeds shining (according to Schumann).

Type species *Cereus tonduzii* Weber.**Werckleocereus tonduzii** (Weber).*Cereus tonduzii* Weber, Bull. Mus. Hist. Nat. 8: 459. 1902.

TYPE LOCALITY: Copey, near Santa Maria de Dota, Costa Rica.

DISTRIBUTION: Costa Rica, Central America.

17. ACANTHOCEREUS gen. nov.

Night-flowering cacti, with elongated, erect or reclining, 3 to 6-angled rootless stems and large funnellform flowers; areoles of the stems distant from each other, bearing a tuft of short wool and several stiff spines; ovary with several or many areoles bearing wool and spines; corolla-tube green, cylindric, slender, expanded only at the summit, bearing a few similar areoles subtended by a small scale, the limb somewhat shorter than the tube, widely expanded; sepals narrowly lanceolate, acuminate, green, shorter than the white petals; stamens shorter than the petals; style very slender, divided at the apex into several linear stigmas; berry (according to Schumann^a) scaly and spiny, with a thick skin, red flesh, and numerous thick black seeds.

Both Schumann and Berger regard this group as consisting of a single species, while Pfeiffer recognized several. Plants cultivated in New York show great differences in the length of spines, one from Panama, collected by Cowell, having spines of the stem only 6 mm. long or less, while those from Florida and Texas have spines up to 2.5 cm. long, agreeing in this with herbarium specimens from Guadeloupe.

Type species *Cactus pentagonus* L.Acanthocereus was considered a subgenus of *Cereus* by A. Berger.**Acanthocereus pentagonus** (L.).*Cactus pentagonus* L. Sp. Pl. 467. 1753.*Cereus pentagonus* Haw.; Pfeiff. Enum. Cact. 109. 1837.*Cereus acutangulus* Otto; Pfeiff. Enum. Cact. 107. 1837.*Cereus baxaniensis* Karw.; Pfeiff. Enum. Cact. 109. 1837.*Cereus ramosus* Karw.; Pfeiff. Enum. Cact. 108. 1837.*Cereus princeps* Pfeiff. Enum. Cact. 108. 1837.*Cereus pellucidus* Otto; Pfeiff. Enum. Cact. 108. 1837.*Cereus nitidus* Salm-Dyck, Cact. Hort. Dyck, ed. 2. 212. 1850.*Cercus variabilis* Engelm. Bost. Jour. Nat. Hist. 5: 205. 1845, not Pfeiff. 1837.^aGesamtb. Kakteen Nachtr. 29.

Cereus vasmeri Young, Fl. Texas 276. 1873.

Cereus dussii Schum. Gesamtb. Kakteen 89. 1899.

Cereus sinul Weber; Gosselin, Bull. Mus. Paris 10: 384. 1904.

TYPE LOCALITY: America.

DISTRIBUTION: Southern Texas, south along the coast of Mexico to Costa Rica, Central America; Florida Keys; Cuba; Guadeloupe.

ILLUSTRATION: Engelm. loc. cit. pl. 60. f. 5, 6.

According to Salm-Dyck^a this is *Cactus pentagonus* L. = *Cereus pentagonus* (L.) Haw., and this view is supported by Weber.^b

18. LEPTOCEREUS gen. nov.

Stems diffusely branching; branches slender, usually with 6 prominent thin ribs, so far as known not giving off roots; spines slender, similar; flowers diurnal(?), small; calyx tube short; stamens and style included; ovary and fruit very spiny.

Type species *Cereus assurgens* Griseb., as also of A. Berger's subgenus *Leptocereus*.

Leptocereus assurgens (Griseb.).

Cereus assurgens Griseb. Cat. Pl. Cub. 116. 1866.

TYPE LOCALITY: Western Cuba.

DISTRIBUTION: Cuba.

ILLUSTRATION: Schum. Gesamtb. Kakteen f. 33; Hartmann, loc. cit.

The following species referred to *Cereus* when better known may be found to belong to *Leptocereus*:

CEREUS QUADRICOSTATUS Bello, Ann. Soc. Espan. Hist. Nat. 10: 276. 1881.

TYPE LOCALITY: Porto Rico.

DISTRIBUTION: Porto Rico.

19. HELIOCEREUS gen. nov.

Stems usually weak, procumbent or climbing over rocks and bushes, in cultivation often erect; branches strongly angled, giving off roots irregularly; ribs usually 3 or 4, sometimes 7; spines of all areoles similar; flowers diurnal, large for the size of the plant, only one from an areole, usually scarlet; tube short but definite; petals elongated; stamens numerous, declined; ovary spiny.

Type species *Cactus speciosus* Cav.

Heliocereus was considered a subgenus of *Cereus* by A. Berger, whose name we have adopted.

Heliocereus amecaensis (Heese).

Cereus amecaensis Heese; Rother, Praktischer Ratgeb. 11: 442. 1896.

TYPE LOCALITY: Iztaccihuatl near Amecameca, Mexico.

DISTRIBUTION: Known only from the type locality.

ILLUSTRATION: Heese, loc. cit.

Heliocereus coccineus (Salm-Dyck).

Cereus coccineus Salm-Dyck; Pfeiff. Enum. Cact. 122. 1837.

TYPE LOCALITY: Mexico.

DISTRIBUTION: Mexico.

ILLUSTRATION: Pfeiff. & Otto, Abb. u. Besch. 1: pl. 15.

^a Cact. Hort. Dyck 49.

^b Bull. Mus. Hist. Nat. 8: 457.

Heliocereus schrankii (Zucc.).*Cereus schrankii* Zucc.; Seitz, Allg. Gartenz. 2: 244. 1834.

TYPE LOCALITY: Mexico.

DISTRIBUTION: Mexico.

ILLUSTRATION: Pfeiff. & Otto, Abb. u. Beschr. 2: pl. 27.

Heliocereus speciosus (Cav.).*Cactus speciosus* Cav. Anal. Cienc. Nat. Madrid 6: 339. 1803.*Cactus speciosissimus* Desf. Mem. Mus. Paris 3: 193. 1817.*Cereus bifrons* Haw. Suppl. Pl. Succ. 76. 1819.*Cereus speciosissimus* DC. Prod. 3: 468. 1828.*Cereus speciosus* Schum. in Pflanzenfam. 3^{6a}: 179. 1894.

TYPE LOCALITY: Mexico.

DISTRIBUTION: Mexico.

ILLUSTRATIONS: Colla, Hort. Ripul. pl. 10; Mem. Mus. Paris loc. cit. pl. 9, Bot. Reg. 6: pl. 486; Bot. Mag. 49: pl. 2306; Herb. Amat. pl. 391; Bot. Cab. pl. 924; Reichenb. Fl. Exot. pl. 180; Schum. Gesamtb. Kakteen f. 36.

20. WILCOXIA gen. nov.

Stems usually low and weak from a cluster of fleshy roots, slender, more or less branched, the branches often only 1 cm. or less in diameter; ribs few and low; spines of all the areoles similar; flowers diurnal, large for the size of the plant, only one from an areole; tube rather short, its areoles bearing spines and wool; ovary and fruit with spines at the areoles; seeds black, the aril large, basal.

Two species from the United States and Mexico.

Type species *Cereus poselgeri* (Lem.) Coult.

The type species has been included in *Echinocereus*, but its habit is very unlike that of any species of that genus. The second species has been considered an anomalous *Cereus*. The two seem to form a well defined group and are therefore brought together under the above generic name.

The genus is named for Brig. Gen. Timothy E. Wilcox, U. S. A., retired, who has been an enthusiastic student of plants for many years.

Wilcoxia poselgeri (Lem.).*Echinocereus poselgeri* Lem. Cact. 57. 1868.*Echinocereus tuberosus* Rümpl; Först. Handb. Cact. ed. 2. 783. 1886.*Cereus tuberosus* Poselg. Allg. Gartenz. 21: 135. 1853, not Pfeiff. Enum. Cact. 1837.*Cereus poselgeri* Coult. Contr. Nat. Herb. 3: 398. 1896.

TYPE LOCALITY: Not given.

DISTRIBUTION: Southern Texas and Coahuila.

ILLUSTRATIONS: Engelm. Cact. Mex. Bound. pl. 59. f. 12; Blühende Kakteen pl. 38.

Wilcoxia striata (Brandege).*Cereus striatus* Brandege, Zoe 2: 19. 1891.*Cereus diguetii* Weber, Bull. Mus. Hist. Nat. 1: 318. 1895.

TYPE LOCALITY: "San José del Cabo," Lower California.

DISTRIBUTION: Lower California and Sonora.

21. APOROCACTUS Lem. Ill. Hortie. 7: misc. 67. 1860.

Plants slender, vine-like creeping or clambering, sending out aerial roots freely; flowers rather small, one from an areole, slender, irregular, bright red, bent above the ovary; filaments inserted near the base of the tube, somewhat exserted; fruit globose, small, reddish, setose; seeds few, reddish brown, obovate.

Type species *Cactus flagelliformis* L.Aporocactus was considered a subgenus of *Cereus* by A. Berger under this name.

Aporocactus flagelliformis (L.) Lem. Ill. Hort. 7: misc. 68. 1860.

Cactus flagelliformis L. Sp. Pl. 467. 1753.

Cereus flagelliformis Mill. Gard. Dict. ed. 8. no. 12. 1768.

TYPE LOCALITY: In South America.

DISTRIBUTION: Mexico. Reported from Jamaica, but not found there by recent collectors.

ILLUSTRATIONS: Trew, Pl. Ehret. *pl.* 30; Bot. Mag. 1: *pl.* 17. DC. Pl. Grass. *pl.* 127; Baill. Hist. Pl. 9: *f.* 52, 53.

Aporocactus flagriformis (Zucc.) Lem.

Cereus flagriformis Zucc. Cat. Cact. Monac. 1836.

TYPE LOCALITY: San Jose de l'Oro, Oaxaca.

DISTRIBUTION: Mexico.

ILLUSTRATION: Pfeiff. & Otto, Abb. u. Besch. 1: *pl.* 12.

Aporocactus leptophis (DC.).

Cereus leptophis DC. Mem. Mus. Paris 17: 117. 1828.

Cereus flagelliformis leptophis Schum. Gesamtb. Kakteen 143. 1899.

TYPE LOCALITY: "In Mexico."

DISTRIBUTION: Mexico.

ILLUSTRATION: DC. Mem. Cact. *pl.* 12.

22. BERGEROCACTUS gen. nov.

A low, much-branched, day-blooming cactus, with spreading or ascending stout, cylindrical, low-ribbed stems and branches, the areoles close together, bearing many yellow acicular radiating spines, those of contiguous areoles interlocking, one spine usually much longer than the others; corolla short-funnelform, greenish yellow, the rather widely expanding limb as long as the tube or longer; ovary densely covered with areoles bearing short brownish wool and acicular spines; corolla tube with a few similar distant areoles; sepals narrowly obovate, obtuse; petals obtuse, little longer than the stamens; style, including the linear stigmas, about as long as the stamens; fruit globose, densely spiny; seeds obovate.

Type species *Cereus emoryi* Engelm.

Bergerocereus emoryi (Engelm.).

Cereus emoryi Engelm. Am. Journ. Sci. II. 14: 338. 1852.

Echinocereus emoryi Rümpl. Först. Handb. Cact. ed. 2. 804. 1886.

TYPE LOCALITY: "About the boundary line" of California and Lower California.

DISTRIBUTION: Southern California and Lower California.

ILLUSTRATION: Engelm. Cact. Mex. Bound. *pl.* 60. *f.* 1-4.

23. ECHINOCEREUS Engelm. in Wislitz. Mem. Tour North. Mex. 91. 1848.

Always low plants, erect or prostrate, single or cespitose, globular to shortly cylindrical; spines on flowering and sterile areoles similar; flower large, diurnal; corolla short-funnelform, scarlet or purple, rarely yellow, the tube and ovary spiny; stigmas always green; seeds black, tuberculate.

Type species *Echinocereus viridiflorus*.

Professor Schumann recognizes 38 species in this genus, but more than 125 species and varieties have been proposed. The species of this genus will be treated in a later publication.

SPECIES OF UNKNOWN GENERIC RELATIONSHIP.

Cereus aragoni Weber, Bull. Mus. Hist. Nat. 8: 456. 1902.

TYPE LOCALITY: In Costa Rica.

DISTRIBUTION: Costa Rica, Central America.

Ovary and fruit scaly. As indicated by Berger, perhaps a *Lemaireocereus*.

Cereus beneckeii Ehrenb. Bot. Zeit. 2: 835. 1844.

Cereus farinosus Haage; Salm-Dyck, Allg. Gartenz. 13: 355. 1845.

TYPE LOCALITY: Probably Mexico.

DISTRIBUTION: Central Mexico.

ILLUSTRATION: Schum. Gesamtb. Kakteen f. 22.

Flowers and fruit unknown.

Cereus conformis Salm-Dyck, Cact. Hort. Dyck. ed. 2. 203. 1850.

Only known from description. Collected by Ehrenberg in Mexico in 1840.

Cereus ghiesbreghtii Schum. Gesamtb. Kakteen 81. 1899.

TYPE LOCALITY: Mexico.

DISTRIBUTION: Mexico.

ILLUSTRATION: Schum. loc. cit. f. 16.

The plant in the New York collection looks a little like a small *Cephalocereus*, and Schumann's figure is not against this view.

Cereus longicaudatus Weber; Gosselin, Bull. Mus. Paris 10: 384. 1904.

TYPE LOCALITY: Near Mesquititlan, Mexico.

Flowers and fruit undescribed.

This species is undoubtedly the same as *Cereus rayans* Brandegee. Both were published in 1904.

Cereus mamillatus Engelm.; Coult. Contr. Nat. Herb. 3: 405. 1896.

TYPE LOCALITY: "Mountain sides, south of Moleje, Lower California."

DISTRIBUTION: Known only from the type locality.

This is probably an *Echinocereus*.

Cereus martianus Zucc. Flora 15: beibl. 66. 1832.

TYPE LOCALITY: Mexico.

DISTRIBUTION: Southern Mexico.

ILLUSTRATIONS: Bot. Mag. 66: pl. 3768; Berger, Ann. Rep. Mo. Bot. Gard. 16: pl. 12. f. 1; Blühende Kakteen pl. 65.

We agree with Mr. Berger in excluding this from *Aporocactus*, but we do not know its fruit.

Cereus paniculatus (Lam.) DC. Prod. 3: 366. 1828.

Cactus paniculatus Lam. Encycl. 1: 540. 1783.

TYPE LOCALITY: Santo Domingo.

ILLUSTRATION: Plumier, Pl. Am. ed. Burmann pl. 192.

Not referred by Schumann. Illustrated and described as a 4-angled upright species.

Cereus plumieri Gosselin, Bull. Soc. Bot. France 54: 668. 1907.

Cereus napoleonis Pfeiff. Enum. Cact. 117. 1837, not Graham. 1836.

TYPE LOCALITY: West Indies.

DISTRIBUTION: West Indies.

ILLUSTRATIONS: Plumier, Pl. Am. ed. Burmann pl. 199. fig. 2.

Perhaps an *Acanthocereus*.

Cereus repandus (L.) Haw. Syn. Pl. Succ. 183. 1812, not Mill. 1768.

Cactus repandus L. Sp. Pl. 467. 1753.

TYPE LOCALITY: Curaçao [South America] (according to L. Hort. Cliff.).

From description clearly a *Cephalocereus*. Willdenow^a refers to this a Jamaica species, which is doubtfully correct. The plant taken by Schumann as *C. repandus* is *Harrisia*. Until plants can be had from Curaçao, this species must remain doubtful.

^aSp. Pl. 2: 940.

Cereus rigidissimus Muhlenpf. Allg. Gartenz. **16**: 12. 1842, not Lem. 1840.

Said to have come from Mexico, but we know it only from description.

Cereus testudo.

This is a plant recently collected by Dr. C. A. Purpus in the State of Vera Cruz, Mexico. It is said^a to be a parasitic species, in habit resembling *C. wittii*, but the material in our possession does not enable us to determine its relationship. As far as we can learn, it has not been formally published.

Cereus vagans K. Brandege, Zoe **5**: 191. 1904.

TYPE LOCALITY: Mazatlan, Mexico.

Cereus viperinus Weber; Gosselin, Bull. Mus. Paris **10**: 385. 1904.

TYPE LOCALITY: Zapotitlan, Mexico.

Cereus weingartianus Hartm. Monatsch. Kakteenk. **14**: 155. 1904.

TYPE LOCALITY: Hayti.

DISTRIBUTION: Known only from the type plant.

Flowers and fruit unknown.

Cereus wercklei Weber, Bull. Mus. Hist. Nat. **8**: 460. 1902.

TYPE LOCALITY: Cerro Mogote, near Miravalles, Costa Rica.

DISTRIBUTION: Known only from the type locality.

Pilocereus albisetosus (Haw.) Schum. Gesamtb. Kakteen **196**. 1899.

Cereus albisetosus Haw. Suppl. Pl. Succ. **77**. 1819.

TYPE LOCALITY: "Domingo."

Described as a trailing, white-spined, 5-angled species. Evidently not a *Cephalocereus*.

Pilocereus fimbriatus (Lam.) Lem. Rev. Hortie. **1862**: 427. 1862.

Cactus fimbriatus Lam. Encycl. **1**: 539. 1783.

Cereus fimbriatus DC. Prod. **3**: 464. 1828.

Cereus serruliflorus Haw. Phil. Mag. **1830**: 109. 1830.

TYPE LOCALITY: Santo Domingo.

DISTRIBUTION: Santo Domingo.

ILLUSTRATION: Plumier, Pl. Am. ed. Burmann *pl.* **195**. *f.* **1**.

Although admitted to *Pilocereus* by Lemaire, the form of the flower as shown in the illustration, as also the serrate inner petals, does not make this disposition of it satisfactory, although the style is exerted. The spines are said to be "setaceous" and the illustration shows them so.

Pilocereus grandispinus (Haw.) Lem. Rev. Hortie. **1862**: 427. 1862.

Cereus grandispinus Haw. Phil. Mag. **1830**: 109. 1830.

TYPE LOCALITY: Santo Domingo.

DISTRIBUTION: Santo Domingo.

ILLUSTRATION: Plumier, Pl. Am. ed. Burmann *pl.* **195**. *f.* **2**; Descourt. Fl. Antill. *pl.* **419**, as *Cactus fimbriatus*.

Not a *Cephalocereus*.

^a Monatschr. Kakteenk. **18**: 15. 1908.