

## A new system of the genus *Pediocactus* Britton & Rose.

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*Pediocactus* Britton & Rose is revised; a genus is divided into 3 subgenera, 5 sections and 2 subsections. Many taxonomic changes are made and for each species a full synonymy is given.

Recent genera *Pediocactus*, *Sclerocactus*, *Gymnocactus* and *Turbinicarpus* create a complex of very similar morphologic characters, where especially flowers, fruits and seeds prove, that it is a variable complex of closely related species.

**genus *Pediocactus* Britton & Rose, III. Flora of N U.S. and Canada. ed. 2:569 (1913). Type species: *P. simpsonii* (Engelm.) Britton & Rose.**

- [*Neolloydia* Britton & Rose in Bull. Torrey Bot. Club 49:251 (Aug. 1922), p.p. ;
- Turbinicarpus* F. Buxb. & Backeb. in Jahrb. Deutsch. Kakt.-Ges. 1937(1):27 (1937);
- Gymnocactus* Backeb. in Blatt. Kakt.-Forsch. 1938:10,22 (1938);
- Rapicactus* F. Buxb. & Oehme in Jahrb. Deutsch. Kakt.-Ges. 1942(1):18-24 (1942);
- Normanbokea* Kladiwa & F. Buxb. in Krainz, Die Kakteen 40-41 (1969);
- Sclerocactus* Britton & Rose, Cactaceae 3:212 (1922);
- Coloradoa* Boissevain in Boissevain & Davidson, Colorado Cacti 54 (1940);
- Utahia* Britton & Rose, Cactaceae 3:215 (1922);
- Pilocanthus* B. W. Benson & Backeberg, KuaS 8:187 (1957);
- Navajoa* Croizat, Cact. Succ. J. Amer. 15:88 (1943);
- Toumeyia* Britton & Rose, Cactaceae 3:91 (1922);
- Echinomastus* Britton & Rose, Cactaceae 3:147 (1922);
- Ancistrocactus* Britton & Rose, Cactaceae 4:3-5 (1923);
- Glandulicactus* Backeberg, Blatter Kakteenforschung 1938:6 (1938)].

## subgenus *Pediocactus*

[*Pediocactus* Britton et Rose, Ill. Fl. of N. US and Canada.ed. 2:569 (1913); *Utahia* Britton et Rose, Cactaceae 3:215 (1922); *Pilocanthus* B. W. Benson et Backbg., KuaS 8:187 (1957)].

Caulibus adpressis; corpus simplex (rarius multiplex); spinae rigidae, tenues.

Stem flat or globular, rarely cylindrical, single (rarely branched); spines rigid, thin.

Type species: *P. simpsonii* (Engelmann) Britton & Rose.

## sect. *Pediocactus*

Spinae tantum erecti vel curvatae.

All spines erect or curved.

Type species: *P. simpsonii* (Engelmann) Britton & Rose.

***P. simpsonii*** (Engelmann) Britton & Rose, Ill. Flora of N.U.S. and Canada.ed 2., 569 (1913).

subsp. ***simpsonii***

var. ***simpsonii***

[*Echinocactus simpsonii* Engelmann, Trans. Acad. St. Louis 2:197 (1863); *E. simpsonii* var. minor Engelmann, Trans. Acad. St. Louis 2:197 (1863); *Mammillaria simpsonii* M. E. Jones, Zool. 3:302 (1893); *Mammillaria purpusii* K. Schumann, Monatschr. Kakteenk. 4:165 (1894); *P. simpsonii* var. *minor* (Engelmann) Cockerell, Torreyana 18:180 (1916); *P. simpsonii* var. *minor* (Engelmann) Boissvain & Davidson, Colorado Cacti p. 58 (1940), homonym; *P. hermannii* Marshall, Saguaro-land Bull. 8:78 (1954); *P. simpsonii* var. *caespiticus* Backeberg, Nat. Cactus & Succ. Journ. GB 14:63 (1959), nom. nud.; *P. simpsonii* (Engelmann) Britton & Rose var. *hermannii* Wiegand & Backeb., Die Cactaceae 5:2846 (1961); *P. simpsonii* var. *indranianus* Hochstatter, Succulenta 9:178-183 (1990); *P. simpsonii* ssp. *indranus* (Hochstetter) Hochstetter, The Genera *Pediocactus-Navajoa-Toumeyia* p.43, Mannheim (1995); *P. simpsonii* ssp. *bensonii* Hochstatter, The Genera *Pediocactus-Navajoa-Toumeyia* p.46, Mannheim (1995);].

var. ***paradinei*** (B. W. Benson) J. J. Halda stat. nov.

[bas: *Pediocactus paradinei* B. W. Benson, Cact. & Succ. Journ. U.S. 29:136 (1957);

*Pilocanthus paradinei* (B. W. Benson) B. W. Benson & Backeberg, KUAS 8:187-189 (1957)].

var. ***knowltonii*** (L. Benson) J. J. Halda stat. nov.

[bas: *Pediocactus knowltonii* L. Benson, Cact. & Succ. Journ. U.S. 32:193 (1960);

*Pediocactus bradyi* L. Benson var. *knowltonii* Backeb., Cact. Lexic.ed.3, 403 (1976), nom. inval.].

ssp. ***bradyi*** (L. Benson) J. J. Halda stat. nov.

[bas: *Pediocactus bradyi* L. Benson, Cact. & Succ. Journ. U.S. 34:19 (1962)].

[syn: *Toumeyia bradyi* (L. Benson) Earle, Cacti of the Southwest ed.2, p.97 (1963)].

var. **despainii** (S. L. Welsh & Goodrich) J. J. Halda stat. nov.

[bas: *Pediocactus despairii* Welsh & Goodrich, Great Basin Naturalist 40:83-86 (1980); *P. bradyi* L. Benson var. *despainii* (Welsh & Goodrich) Hochstatter, Succulenta 1:4-10 (1994); *P. bradyi* L. Benson subsp. *despainii* (Welsh & Goodrich) Hochstatter, The Genera *Pediocactus-Navajoa-Toumeyia* p.64, Mannheim (1995).

var. **winkleri** (K. D. Heil) J. J. Halda stat. nov.

[bas: *Pediocactus winkleri* Heil, Cact. & Succ. Journ. U.S. 51:25-30 (1979); *P. bradyi* var. *winkleri* (K. D. Heil) F. Hochstatter in Succulenta 73(2):55 (1994);

*P. bradyi* L. Benson subsp. *winkleri* (Heil) F. Hochstatter, Genera *Pediocactus*, Navajoa, Toumeyia Revised: 61(1995)].

***P. robustior*** (Engelmann) Arp, Cact. & Succ. Journ. U.S. 44:222(1972).

[*Echinocactus simpsonii robustior* Engelmann in Coulter, Contr. U.S. Herb. 3:376 (1863); *Pediocactus simpsonii* (Engelmann) Britton & Rose var. *nigrispina* W. T. Marshall & Bock, Cactaceae 140 (1941), nom. inval.; *P. simpsonii* var. *robustior* (Engelmann) L. Benson, Cact. & Succ. Journ. U.S. 32:19 (1962); *P. simpsonii* (Engelmann) Britton & Rose var. *nigrispinus* Hochstetter, Succulenta 9:178-183 (1990); *P. nigrispinus* (Hochstatter) Hochstatter, Succulenta 3:99-106 (1992); *P. nigrispinus* (Hochstatter) Hochstatter var. *beastonii* Hochstatter, Succulenta 3:99-106 (1992) p.p.; *P. nigrispinus* (Hochstatter) Hochstatter ssp. *beastonii* (Hochstatter) Hochstatter, The Genera *Pediocactus-Navajoa-Toumeyia* 29. Mannheim (1995) p.p.; *P. nigrispinus* subsp. *puebloensis* Hochstetter, Genera *Pediocactus*, Navajoa, Toumeyia Revised 152 (1995)].

***P. sileri*** (Engelmann) L. Benson, Cact. & Succ. Journ. U.S. 33:53 (1961).

[*Echinocactus sileri* Engelmann in Coulter, Contr. U.S. Herb. 3:376 (1896); *Utahia sileri* (Engelmann) Britton & Rose, The Cactaceae 3:215 (1922)].

## **sect. *Sclerocactus* (Britton et Rose) J. J. Halda sect. nov.**

[*Sclerocactus* Britton et Rose, Cactaceae 3:92 (1922), pro gen., *Ancistrocactus* K. Schum., Gesamtb. Kakteen 292,334 (1898) pro subg.; Britton & Rose, Cactaceae 4:3-5 (1923) pro gen.; *Glandulicactus* Backeberg, Blatter Kakteenforschung 1938:6 (1938)].

Corpus simplex; spinae laterales tantum erecti; spinae centrales unguiformes vel curvatae. Stem single; lateral spines erect; central spines hooked or curvate.

Type species: *Echinocactus polyancistrus* Engelm. & Bigelow.

***P. brevihamatus*** (Engelmann) J. J. Halda stat. nov.

[bas: *Echinocactus brevihamatus* Engelm., Proc. Amer. Acad. 3:271 ((1857); *E. scheeri* var. *brevihamatus* Weber in K. Schum. Gesamtb. Kakteen 336 (1898); *E. scheeri* subsp. *brevihamatus* Schelle, Handb. Kakteenkultur 157 (1907); *Ancistrocactus brevihamatus* Britton & Rose, Cactaceae 4:5 (1923); *Sclerocactus brevihamatus* (Engelmann) D. Hunt in Bradleya 9:91(1991)].

**subsp. brevihamatus****subsp. tobuschii** (W. T. Marshall) J. J. Halda stat. nov.

[bas: *Mammillaria (Ancistrocactus) tobuschii* W. T. Marshall, Saguaro Land Bull. 6:79 (1952); *Ancistrocactus tobuschii* W. T. Marshall ex Backeberg, Cactaceae 5:2926 (1961); *Echinocactus tobuschii* Weniger, Cacti SW 78 (1970); *Ferocactus tobuschii* (W. T. Marshall) N. P. Taylor, Cact. Succ. J. G. B. 41(4):90 (1979); *Sclerocactus brevihamatus* subsp. *tobuschii* N. P. Taylor in Plante Grasse 15(1):8 (1995)].

**P. cloverae** (K. D. Heil & J. M. Porter) J. J. Halda stat. nov.

[bas: *Sclerocactus cloverae* K. D. Heil & J. M. Porter in Haseltonia 2:31 (1994) as "cloveriae"; *S. whipplei* var. *heilii* et var. *reevesii* Castetter, P. Pierce & K. H. Schwerin in Cact. Succ. J. Amer. 48(2):79 (1976)].

**subsp. brackii** (K. D. Heil & J. M. Porter) J. J. Halda stat. nov.

[bas: *Sclerocactus cloverae* subsp. *brackii* K. D. Heil & J. M. Porter in Haseltonia 2:33 (1994)].

**P. glaucus** (K. Schum.) Arp in Cact. Succ. J. (US) 44(5):221 (1972)

[bas: *Echinocactus glaucus* J. A. Purpus, Monatschr. Kakteenk. 5:106 (1895), nom. nud.; *E. glaucus* K. Schum., Gesambt. Kakteen. 438 (1898), not Karwinsky ex Pfeiffer.; *E. subglaucus* Rydb. Fl. Rocky Mts. 580 (1917); *E. whipplei* Engelm. & Bigelow var. *glaucus* J. A. Purpus, Mitt. Deutsch. Dendr. Gesselsch. 1925:50 (1925); *Sclerocactus franklinii* J. W. Evans, Cact. Succ. J. Amer. 11:74 (1939); *S. glaucus* Backeberg, Cactaceae 5:2683 (1961) nom. inval.; *S. glaucus* (K. Schum.) L. Benson, Cact. Succ. J. Amer. 38:53 (1966); *S. whipplei* var. *glaucus* (K. Schum.) S. L. Welsh in Great Basin Nat. 44(1):68 (1984)].

**P. mesae-verdae** (Boissevain & C. Davidson) Arp in Cact. Succ. J. (US) 44(5):222 (1972).

[bas: *Coloradoa mesae-verdae* Boissevain in Boissevain & C. Davidson, Colorado Cacti 55 (1940); *Echinocactus mesae-verdae* L. Benson, Leafl. West. Bot. 6:163 (1951); *Sclerocactus mesae-verdae* (Boissevain & C. Davidson) L. Benson in Cact. Succ. J. Amer. 38:54 (1966)].

**P. nyensis** (F. Hochstatter) J. J. Halda stat. nov.

[bas: *Sclerocactus nyensis* F. Hochstatter in Succulenta 71(6):253 (1992)].

**P. parviflorus** (Clover & Jotter) J. J. Halda stat. nov.

[bas: *Sclerocactus parviflorus* Clover & Jotter, Bull. Torrey Bot. Club 68:419 (1941); *Echinocactus parviflorus* (Clover & Jotter) L. Benson, Cacti Arizona ed. 2:104 (1950)].

**subsp. parviflorus**

[syn: *Sclerocactus contortus* Heil, Cact. Succ. J. 51(1):25 (1979)].

**subsp. havasupaiensis** (Clover) J. J. Halda stat. nov.

[*Sclerocactus havasupaiensis* Clover, Amer. Journ. Bot. 29:172 (1942); *Echinocactus parviflorus* var. *havasupaiensis* (Clover) L. Benson, Cacti Arizona ed. 2:104 (1950); *Sclerocactus havasupaiensis* var. *roseus* Clover, Am. J. Bot. 29:173 (1942); *Echinocactus parviflorus* var. *roseus* (Clover) L. Benson, Cacti Arizona ed. 2:102 (1950); *Sclerocactus whipplei* var. *roseus* L. Benson, Cact. Succ. J. Amer. 38:104 (1966); *S. parviflorus* subsp. *havasupaiensis* (Clover) F. Hochstatter in Succulenta 74(1):38 (1995)].

**subsp. intermedius** (Peebles) J. J. Halda stat. nov.

[*Sclerocactus intermedius* Peebles, Leaf. West. Bot. 5:191 (1949); *S. whipplei* var. *intermedius* L. Benson, Cact. Succ. J. Amer. 38:102 (1966); *S. parviflorus* var. *intermedius* (Peebles) D. Woodruff & L. Benson in Cact. Succ. J. Amer. 48(3):133 (1976); *S. parviflorus* subsp. *intermedius* (Peebles) K. D. Heil & J. M. Porter in *Haseltonia* 2:27(1994)].

**subsp. terrae-canyonae** (K. D. Heil) J. J. Halda stat. nov.

[*Sclerocactus terrae-canyonae* K. D. Heil in Cact. Succ. J. Amer. 51(1):26 (1979); ; *S. parviflorus* subsp. *terrae-canyonae* (K. D. Heil) K. D. Heil & J. M. Porter in *Haseltonia* 2:27(1994)].

**P. polyancistrus** (Engelm. & Big.) Arp in Cact. Succ. J. (US) 44(5):222(1972)

[*Echinocactus polyancistrus* Engelm. & Bigelow, Proc. Amer. Acad. 3:272 (1857); *Sclerocactus polyancistrus* (Engelm. & Big.) Britton & Rose, Cactaceae 3:213 (1922)].

**P. pubispinus** (Engelm.) Arp, Cact. Succ. J. Amer. 44(5):222 (1972);

[bas: *Echinocactus pubispinus* Engelm. Trans. Acad. Sci. St. Louis 2:199 (1863); *Sclerocactus pubispinus* (Engelm.) L. Benson in Cact. Succ. J. Amer. 38:103 (1966)].

**subsp. sileri** (L. D. Benson) J. J. Halda stat. nov.

[bas: *Sclerocactus pubispinus* var. *sileri* L. D. Benson, Cacti Ariz. ed. 3:23,179 (1969); *Sclerocactus sileri* (L. D. Benson) K. D. Heil & J. M. Porter in *Haseltonia* 2:39 (1994)].

**P. spinosior** (Engelm.) J. J. Halda stat. nov.

[bas: *Echinocactus whipplei* var. *spinosior* Engelm., Trans. Acad. Sci. St. Louis 2:199 (1863); *E. spinosior* Hirscht, Monatschr. Kakteenk. 11:89 (1901); *E. whipplei* var. *spinosior* Schelle, Handb. Kakteenkultur 158 (1907); *Sclerocactus whipplei* var. *spinosior* Engelm. ex Boissavain & Davidson, Colorado Cacti 51-52 (1940); *S. pubispinus* var. *spinosior* (Engelm.) S. L. Welsh in Great Basin Nat. 44(1):67 (1984); *Sclerocactus spinosior* (Engelm.) D. Woodruff & L. Benson in Cact. Succ. J. Amer. 48(3):131 (1976)].

**var. schlesseri** (K. D. Heil & S. L. Welsh) J. J. Halda stat. nov.

[bas: *Sclerocactus schlesseri* K. D. Heil & S. L. Welsh in Great Basin Nat. 46(4):677 (1986); *Sclerocactus spinosior* var. *schlesseri* (K. D. Heil & S. L. Welsh) F. Hochstetter in *Succulenta* 71(6):259 (1992)].

**subsp. blainei** (S. L. Welsh & K. H. Thorne) J. J. Halda stat. nov.

[bas: *Sclerocactus blainei* S. L. Welsh & K. H. Thorne; *S. spinosior* subsp. *blainei* (S. L. Welsh & K. H. Thorne) F. Hochstatter in *Succulenta* 74(1):43(1995)].

**P. wetlandicus** (F. Hochstatter) J. J. Halda stat. nov.

[bas: *Sclerocactus wetlandicus* F. Hochstatter in *Succulenta* 68(6):123,125 (1989)].

**f. ilseae** (F. Hochstatter) J. J. Halda stat. nov.

[*Sclerocactus wetlandicus* var. *ilseae* F. Hochstatter in *Succulenta* 72(2):87(1993); *S. brevispinus* K. D. Heil & J. M. Porter in *Haseltonia* 2:26 (1994); *S. wetlandicus* subsp. *ilseae* (F. Hochstatter) F. Hochstatter, *Genera Pediocactus, Navajoa, Toumeyia* Revised 141(1995)].

***P. whipplei*** (Engelm. & Big.) Arp in Cact. Succ. J. (US) 44(5):222(1972).

[bas: *Echinocactus whipplei* Engelm. & Bigelow, Proc. Amer. Acad. 3:271 (1857); *Sclerocactus whipplei* (Engelm. & Big) Britton & Rose, Cactaceae 3:213 (1922); *S. thompsonii* W. T. Marshall, Saguaroand Bull. 2(6):? (1948), nom. nud.; *S. whipplei* var. *pygmaeus* Peebles, Leaff. West. Bot. 5:192 (1949)].

**subsp. *busekii*** (K. D. Heil & J. M. Porter) J. J. Halda stat. nov.

[*Sclerocactus whipplei* (Engelm. & J. M. Bigelow) Britton & Rose subsp. *busekii* F. Hochstatter in Succulenta 74(3):136 (1995); *S. whipplei* subsp. *busekii* (K. D. Heil & J. M. Porter) F. Hochstatter in Succulenta 74(1):40 (1995), basionym not stated].

***P. wrightiae*** (L. Benson) Arp in Cact. Succ. J. (US) 44(5):222(1972).

[bas: *Sclerocactus wrightiae* L. Benson in Cact. Succ. J. US 38:55 (1966)].

**subg. *Toumeya*** (Britton et Rose) J. J. Halda subg. nov.

[bas: *Toumeya* Britton et Rose, Cactaceae 3:91 (1922) pro gen.; *Pediocactus* sect. *Toumeya* L. Benson, Cact. Succ. J. Amer. 34:61 (1962)].

## **sect. *Toumeya***

Corpus simplex basi napiforme; spinae centrales papyraceae.

Stem single, napiform; central spines papery.

Type species: *Mammillaria papyracantha* Engelm.

***P. papyracanthus*** (Engelm.) L. Benson, Cactus & Succ. J. Amer. 34:61 (1962).

[*Mammillaria papyracantha* Engelm. in A. Gray, Pl. Fendl., Mem. Amer. Acad. II. 4:49 (1849); *Echinocactus papyracanthus* Engelm., Trans. Acad. Sci. St. Louis 2:198 (1863); *Toumeya papyracantha* Britton et Rose, Cactaceae 3:91 (1922); *Sclerocactus papyracanthus* (Engelm.) Taylor, Bradleya 5:94 (1987)].

## **sect. *Gymnocactus* J.J. Halda sect. nov.**

[bas: *Gymnocactus* Backeb. in Blatt. Kakt.-Forsch. 1938:10-22 (1938); *Rapicactus* F. Buxb. & Oehme in Jahrb. Deutsch. Kakt.-Ges. 1942(1):18-24 (1942)].

Corpus simplex basi napiforme vel tuberosi; spinae tantum erecti vel curvatae.

Stem single; base napiform or bulbous; all spines erect or curvate.

Type species: *Mammillaria horripila* Lem.

***P. subterraneus*** (Backeb.) J.J. Halda stat. nov.

[*Echinocactus subterraneus* Backeb. in Kakteenfreund (Mannheim) 1:110-111 (1932); *Thelocactus subterraneus* (Backeb.) Backeb. & F. Knuth, Kaktus ABC 361 (1935); *Rapicactus subterraneus* (Backeb.) F. Buxb. & Oehme in Jahrb. Deutsch. Kakt.-Ges. 1:18-24 (1942); *Gymnocactus subterraneus* (Backeb.) Backb. in Cact. Succ. J. (US) 23(5):151 (1951); *Neolloydia*

*subterranea* (Backb.) H.Moore in Bailey 19(4):165(1975); *Turbincarpus subterraneus* (Backeb.)A.Zimmerman in Bradleya 9:92(1991)].

**var. *subterraneus***

**var. *zaragosae*** (Glass & Foster) J.J.Halda stat.nov.

[*Gymnocactus subterraneus* (Backb.) Backb. var. *zaragosae* Glass & Foster in Cact. Succ. J.(US) 50(6):283(1978); *Neolloydia subterranea* (Backb.) H.Moore var. *zaragosae* (Glass & Foster) E.F.Anderson in Bradleya 4:14(1986)].

***P. saueri*** (Boed.) J.J.Halda stat.nov.

[bas: *Echinocactus saueri* Boed. in ZfS 362 (1928); *Thelocactus saueri* (Boed.)Berg., Kakteen 252(1929); *Neolloydia saueri* (Boed.) Knuth, Kaktus ABC 367 (1935); *Gymnocactus saueri* (Boed.) Backeb. in BfK 6(1938); *Turbincarpus saueri* (Boed.) John & Riha in Kaktusy 19:22(1983)].

***P. horripilus*** (Lem.) J.J.Halda stat.nov.

[bas: *Mammillaria horripila* Lem., Cact. Aliq. Nov. 7 (1838); *Echinocactus horripilus* Lem., Cact. Gen. Nov. Sp. 91 (1839); *Echinocactus caespititius* Pfeiffer in Salm-Dyck, Cact. Hort. 18 (1842); *Echinocactus horripilus longispinus* Monville ex Labouret, Monogr. Cact. 265 (1853); *Neolloydia horripila* (Lem.) Br. et R., Cactac. 4:16(1923); *Gymnocactus horripilus* (Lem.) Backeb., Cact.Succ.J. (US) 23:151(1951); *Thelocactus goldii* Bravo in Anal.Inst. Biol. Mex. 26:1 (1955)].

***P. knuthianus*** (Boed) J.J.Halda stat.nov.

[bas: *Echinocactus knuthianus* Boed., Monatschr.d. DKG 139(1930); *Neolloydia knuthiana* (Boed.) Knuth in Kakt. ABC 367(1935); *Thelocactus knuthianus* (Boed.) Borg, Cacti 346(1951); *Gymnocactus knuthianus* (Boed.)Backeb. in Cact.Succ.J.(US) 23(5):151(1951) et in Cactaceae 5:2858 (1961); *Turbincarpus knuthianus* (Boed.) John & Riha in Kaktusy 19:22 (1983)].

***P. ysabelae*** (Schlange) J.J.Halda stat.nov.

[bas: *Thelocactus ysabelae* Schlange in Cact.Succ.J.(US) 5:551(1934) et var. *brevispinus* Schlange, l.c. 551 (1934); *Gymnocactus ysabelae* (Schlange) Backeb., Die Cactaceae 5:2856(1961) et var. *brevispinus* (Schlange) Backeb., l.c. 2856 (1961)].

***P. mandragora*** (Fric ex A.Berger) J.J.Halda stat.nov.

[bas: *Echinocactus mandragora* Fric ex A.Berger, Kakteen 225(1929); *Rapicactus mandragora* (Fric ex A.Berger) F.Buxb. & Oehme in Jahrb. Deutsch. Kakt.Ges. 1943:24 (1943); *Gymnocactus mandragora* (Fric ex A. Berger) Backeberg, Cactaceae 5:2862 (1961); *Turbincarpus mandragora* (Fric ex A. Berger) A. Zimmerman in Bradleya 9:92(1991)].

***P. gielsdorfianus*** (Werderm.) J.J.Halda stat.nov.

[bas: *Echinocactus gielsdorfianus* Werderm. in Monatschr. Deutsche Kakt.-Ges. 1929:215-216 (1929); *Neolloydia gielsdorfiana* (Werderm.) Knuth in Backeberg et Knuth, Kaktus ABC 366 (1935); *Thelocactus gielsdorfianus* (Werderm.) Werderm. ex Borg, Cacti 284(1937); *Gymnocactus gielsdorfianus* (Werderm.) Backeb. in Cact.Succ. J.(US) 23(5):151(1951) et Cactaceae 5:2857 (1961); ; *Turbincarpus gielsdorfianus* (Werderm.) John & Riha in Kaktusy 17(1):18(1983)].

***P. viereckii*** (Werderm.) J.J.Halda stat.nov.

[bas: *Echinocactus viereckii* Werderm. in Monatschr.Deutsche Kakt.-Ges. 3:175(1931); *Neolloydia viereckii* (Werderm.) Knuth in Backeberg et Knuth, Kaktus ABC 368 (1935); *Thelocactus viereckii* (Werderm.) H.Bravo, Cact.Mex.ed.1, 476(1937); *Gymnocactus viereckii* (Werderm.) Backeb. in Cact.Succ.J.(US) 23(5):(1951) et in Cactaceae 5:2851 (1961); *G. viereckii* (Werderm.) Backeb. var. *major* Glass & Foster, Cact. Succ. J. Amer. 50(6):285 (1978); *Turbinacarpus viereckii* (Werderm.) John & Riha in Kaktusy 19(1):22(1983)].

**var. *viereckii***

Lodyha obvykle vetvena, o prumeru 3-4.5cm; okrajovych trnu 17-22, tenkych; kvety o prumeru 1.5-2cm purpurove fialove. Tamaulipas: Los Ebanos, udoli Jaumave.

**var. *major*** (Glass & Foster) J.J.Halda stat.nov.

[bas: *Gymnocactus viereckii* var. *major* Glass. & Foster in Cact.Succ.J.(US) 50(6):285(1978); *Neolloydia viereckii* var. *major* (Glass & Foster) E.F. Anderson in Bradleya 4:15(1986)].

Lodyha obvykle jednotlivá, o prumeru 4-6.5cm; okrajovych trnu 13-16, tlustych; kvety o prumeru 2-3.5cm jsou bile. Nuevo Leon: Mier y Noriega; San Luis Potosi:Lazaro a mezi Santa Rita a Doctor Arroyo.

***P. gautii*** (L.Benson) J.J.Halda stat.nov.

[bas: *Neolloydia gautii* L.Benson in Cact.Succ. J. (US) 46:80 (1974); *Turbinacarpus gautii* (L.Benson) A. Zimmerman in Bradleya 9:91(1991); *Echinocactus beguinii* Schumann, pro parte, excl. typ.; *Thelocactus beguinii* N.P.Taylor in Bradleya 1:113 in adnot.(1983)].

***P. smithii*** (Muehlenpf.) J. J. Halda stat. nov.

[bas: *Echinocactus smithii* Muehlenpf. in Allg. Gartenz. 14:370 (1846); *Thelocactus smithii* (Muehlenpf.) Borg, Cacti 346 (1937); *Gymnocactus beguinii* var. *smithii* (Muehlenpf.) Backeb., Die Cactaceae 5:2855 (1961); *Neolloydia smithii* (Muehlenpf.) Kladiwa & Fittkau in Krainz, Die Kakteen 46-47 (1971)].

**sect. *Turbinacarpus*** J. J. Halda sect. nov.

[bas: *Turbinacarpus* (Backbg.) Buxbaum et Backbg., Jahrb. Deutsch. Kakt. 2:17 (1937) p. p.; *Navajoa Croizat*, Cact. Succ. J. Amer. 34:57 (1962)].

Corpus simplex basi napiforme vel globosum; spinae tantum erecti vel curvatae.

Stem single, underground part napiform or globose; all spines erect or curvate.

Type species: *Echinocactus schmiedickeanus* Boedeker.

subsect. *Turbinacarpus*

[*Echinocactus* Link et Otto, Verh. Ver. Bef. Gart. 3:420(1827), p.p.; *Toumeyia* Britton et Rose, Cactaceae 3:91 (1922), p.p.; *Strombocactus* Britton et Rose, Cactaceae 3:106 (1922) p.p.; *Turbinacarpus* (Backbg.) Buxbaum et Backbg., Jahrb. Deutsch. Kakt. 2:17 (1937)].

Spinae phelloformes vel aciculatae.



Spines corky or needle-like.

Type species: *Echinocactus schmiedickeanus* Boedeker.

***P. peeblesianus*** (Croizat) L. Benson, *Cact. & Succ. J. Amer.* 34:58 (1962).

[*Navajoa peeblesiana* Croizat, *Cact. & Succ. J. Amer.* 15:89 (1943); *Toumeyia peeblesiana* W. T. Marshall, *Cactus (Paris)* 1:5 (1946); *Echinocactus peeblesianus* L. Benson, *Cacti Ariz. ed.* 2:108 (1950); *Navajoa fickeisenii* Backbg., *Cact. Succ. J. G. Brit.* 22:49 (1960), nom. nud.; *Pediocactus peeblesianus* (Croizat) L. Benson var. *fickeisenii* L. Benson, *Cact. & Succ. J. Amer.* 34:59 (1962), nom. nud.; *Toumeyia fickeisenii* L. Benson ex W. H. Earle, *Cacti S. W.* 98 (1963), nom. nud.; *Utahia peeblesiana* Kladiwa in Krainz, *Kakteen, Lief.* 40, C VIIb (1969); *Pediocactus peeblesianus* (Croizat) L. Benson var. *fickeiseniae* L. Benson, *Cacti Ariz. ed.* 3:24 (1969)].

***P. schmiedickeanus*** (Boedeker) J. J. Halda stat. nov.

**var. *schmiedickeanus***

[bas: *Echinocactus schmiedickeanus* Boedeker, *Zeit. Sukk.* 229 (1928); *Strombocactus schmiedickeanus* (Boed.) Berger, *Kakteen* 250 (1929); *Turbincarpus schmiedickeanus* (Boed.) Buxbaum et Backbg., *Jahrb. Kakt.* 27 (1937); *Toumeyia schmiedickeana* (Boed.) Bravo et Marshall, *Saguaroland Bull.* 10:116 (1956)].

**var. *dickisoniae*** (Glass et Foster) J. J. Halda stat. nov.

[bas: *Turbincarpus schmiedickeanus* var. *dickisoniae* Glass et Foster, *Cact. & Succ. J. Amer.* 54(2):74 (1982)].

**var. *gracilis*** (Glass et Foster) J. J. Halda stat. nov.

[bas: *Turbincarpus gracilis* Glass et Foster, *Cact. & Succ. J. Amer.* 58:176 (1976);

*Turbincarpus schmiedickeanus* var. *gracilis* (Glass et Foster) Glass et Foster, *Cact. & Succ. J. Amer.* 49:167 (1977)].

**var. *macrochele*** (Werdermann) J. J. Halda stat. nov.

[bas: *Echinocactus macrochele* Werd., *Notisbl. Bot. Gart. Berlin-Dahlem* 11:104 (1931); *Strombocactus macrochele* (Werd.) Backbg., *Blat. Kakt.* 1 (1936); *Turbincarpus macrochele* (Werd.) Buxbaum et Backbg., *Jahrb. Kakt.* 2:27 (1937); *Toumeyia macrochele* (Werd.) Bravo et Marshall, *Saguaroland Bull.* 12:117 (1956); *Thelocactus macrochele* (Werd.) Kladiwa in Krainz, *Die Kakteen CVIIIb*, 1:7 (1975); *Turbincarpus schmiedickeanus* var. *macrochele* (Werd.) Glass et Foster, *Cact. & Succ. J. Amer.* 49:168 (1977)].

**var. *klinkerianus*** (Backbg. et Jacobsen) J. J. Halda stat. nov.

[bas: *Turbincarpus klinkerianus* Backbg. et Jacobsen, *Sukk. Jahrb. Schw.* 11:27 (1948); *Strombocactus klinkerianus* (Backbg. et Jacobsen) Buining, *Succulenta* 9 (1951); *Toumeyia klinkeriana* (Backbg. et Jacobsen) Bravo et Marshall, *Saguaroland Bull.* 10:116 (1956); *Toumeyia schmiedickeana* (Boedeker) Bravo et Marshall var. *klinkeriana* (Backbg. et Jacobsen) Krainz, *Die Kakteen CVIIIb*, 15:9 (1959); *Strombocactus schmiedickeanus* (Boed.) Berger var. *klinkerianus* (Backbg. et Jacobsen) Rowley, *Rep. Pl. Succ.* 23:10 (1972); *Turbincarpus schmiedickeanus* var. *klinkerianus* (Backbg. et Jacobsen) Glass et Foster, *Cact. & Succ. J. Amer.* 49:169 (1977)].

**var. schwarzii** (Shurly) J. J. Halda stat. nov.

[bas: *Strombocactus schwarzii* Shurly, Cact. Succ. J. G. B. 10:93 (1948); *Turbincarpus schwarzii* (Shurly) Backbg., Cact. & Succ. J. Amer. 23:150 (1951), nom. nud.; *Toumeyia schwarzii* (Shurly) Bravo et Marshall, Saguaroland Bull. 11:30 (1957); *Turbincarpus polaskii* Backbg., Cactaceae 5:2883 (1961), nom. nud. sine typo; *Turbincarpus schwarzii* (Shurly) Backbg., Cactaceae 5:2887 (1961); *Thelocactus macrochele* (Werd.) Kladiwa var. *schwarzii* (Shurly) Kladiwa in Krainz, Die Kakteen, CVIIIb, 1:7 (1975); *Toumeyia macrochele* (Werd.) Bravo et Marshall var. *schwarzii* (Shurly) Kladiwa in Krainz, Die Kakteen CVIIIb, 1:7 (1975); *Turbincarpus macrochele* (Werd.) Werd. et Kladiwa var. *schwarzii* (Shurly) Kladiwa forma *polaskii* (Backbg.) Kladiwa in Krainz, Die Kakteen CVIIIb, 1:7 (1975); *Toumeyia macrochele* (Werd.) Bravo et Marshall var. *schwarzii* (Shurly) Kladiwa forma *polaskii* (Backbg.) Kladiwa in Krainz, Die Kakteen 1:7 (1975); *Turbincarpus schmiedickeanus* var. *schwarzii* (Shurly) Glass et Foster, Cact. & Succ. J. Amer. 49:169 (1977)].

**var. rubriflorus** (G. Frank) J. J. Halda stat. nov.

[*Turbincarpus schwarzii* var. *rubriflorus* G. Frank in Succulenta 72(2):66(1992)].

**var. flaviflorus** (Frank et Lau) J. J. Halda stat. nov.

[bas: *Turbincarpus flaviflorus* Frank et Lau, Kakt. Sukk. 30(1):6-7 (1979); *Turbincarpus schmiedickeanus* var. *flaviflorus* (Frank et Lau) Glass et Foster, Cact. & Succ. J. Amer. 51(3):123 (1979)].

**P. lophophoroides** (Werdermann) J. J. Halda stat. nov.

[bas: *Thelocactus lophophoroides* Werdermann, Kakteenk. 9:176 (1934); *Turbincarpus lophophoroides* (Werdermann) Buxbaum et Backbg., Jahrb. Deutsch. Kakt. 2:27 (1937)].

**var. lophophoroides**

**var. jauernigii** (G. Frank) J. J. Halda stat. nov.

[*Turbincarpus jauernigii* G. Frank in Succulenta 72(3):114(1930); *T. lophophoroides* (Werderm.) Buxb. & Backeb. subsp. *jauernigii* (G. Frank) L. Battaia & C. Zanovello in Pianta Grasse 15(3):81(1995)].

**P. laui** (Glass et Foster) J. J. Halda stat. nov.

[bas: *Turbincarpus laui* Glass et Foster, Cact. & Succ. J. Amer. 47:118 (1975)].

**P. pseudomacrochele** (Backbg) J. J. Halda stat. nov.

[bas: *Strombocactus pseudomacrochele* Backbg., Blatt. Kakt. 6 (1935); *Toumeyia pseudomacrochele* (Backbg.) Bravo et Marshall, Saguaroland Bull. 12:118 (1956)].

**var. krainzianus** (Frank) J. J. Halda stat. nov.

[bas: *Toumeyia krainziana* Frank, Kakt. Sukk. 11(11):168 (1960); *Turbincarpus krainzianus* (Frank) Backbg., Cactaceae 5:2890 (1961); *Toumeyia pseudomacrochele* (Backbg.) Bravo et Marshall var. *krainziana* (Frank) Kladiwa in Krainz, Die Kakteen CVIIIb, 1:9 (1966); *Strombocactus pseudomacrochele* Backbg. var. *krainzianus* (Frank) Rowley, Rep. Pl. Succ. 23:10 (1972); *Turbincarpus pseudomacrochele* (Backbg.) Buxb. et Backbg. var. *krainzianus* (Frank) Glass et Foster, Cact. & Succ. J. Amer. 49(4):173 (1977)].

**var. lausseri** (Diers & Frank) J. J. Halda stat. nov.

[bas: *Turbincarpus pseudomacrochele* var. *lausseri* Diers & Frank, Kakt. u. a. Sukk. 42:5, 106-109 (1991)].

**var. sphacellatus** (L. Diers & G. Frank) J. J. Halda stat. nov.

[*Turbincarpus pseudomacrochele* var. *sphacellatus* L. Diers & G. Frank in KuaS 44(8):160(1993)].

**P. swobodae** (L. Diers) J. J. Halda stat. nov.

[bas: *Turbincarpus swobodae* L. Diers, Kakt. u. a. Sukk. 38:4, 86-91 (1987)].

**P. hoferi** (Luethy et Lau) J. J. Halda stat. nov.

[bas: *Turbincarpus hoferi* Luethy et Lau, Kakt. u. a. Sukk. 42:2+3, 34-37, 62-65 (1991)].

**P. rioverdensis** (G. Frank) J. J. Halda stat. nov.

[bas: *Turbincarpus rioverdensis* G. Frank, Succulenta 71:2, 63-66 (1992)].

**P. bonatzii** (Frank) J. J. Halda stat. nov.

[bas: *Turbincarpus bonatzii* Frank, Succulenta 71:6, 279-281 (1992)].

**P. alonsoi** (Glass et Arias) J. J. Halda stat. nov.

[bas: *Turbincarpus alonsoi* Glass et Arias, Kakt. u. a. Sukk. 47:2, 25-27 (1996)].

## **subsect. Pectinatae** J. J. Halda subsect nova

[*Echinocactus* Link et Otto, Verh. Ver. Bef. Gart. 3:420 (1827), p.p.; *Pelecyphora* Ehrenberg, Bot. Zeit. 1:737 (1843), p. p.; *Thelocactus* (Schumann) Britton et Rose, Bull. Torr. Bot. Club 49:251 (1922), p. p.; *Gymnocactus* Backbg., Blatt. Kakt. 10 (1938), p.p.; *Normanbokea* Kladiwa et Buxbaum in Krainz, Die Kakteen CVIIIb, 1:3 (1969)].

Tubercula asselliformia, spinae cristatae vel tubercula quadrangulata, spinae plumosae.

Tubercles axe-like, spines crested or tubercles tetragonal and spines plumose.

Type species: *Pelecyphora valdeziana* Moeller.

**P. pseudopectinatus** (Backeb.) J. J. Halda stat. nov.

[bas: *Solisia pseudopectinata* Backbg., Cact. Succ. J. Amer. 11:86 (1930), nom. nud.; *Pelecyphora pseudopectinata* Backeb., Kakteenkunde 5:98 (1935); *Mammillaria pseudopectinata* (Backeb.) Kelsey & Dayton, Stand.Pl.Names ed.2, 74 (1942); *Thelocactus pseudopectinatus* (Backbg.) Anderson et Boke, Amer. J. Bot. 56:326 (1969); *Normanbokea pseudopectinata* (Backbg.) Kladiwa et Buxbaum in Krainz, Die Kakteen CVIIIb, 1. 3. (1969); *Turbincarpus pseudopectinatus* (Backbg.) Glass et Foster, Cact. Succ. J. Amer. 49(4):175 (1977); *Neolloydia pseudopectinata* (Backb.) E.F.Anderson in Bradleya 4:15(1986)].

**P. valdezianus** (Moeller) J. J. Halda stat. nov.

[bas: *Pelecyphora valdeziana* Moeller, Deutsche Gaertnerzeitg. p.179 (1930); *Pelecyphora plumosa* Boedeker et Ritter, Monats. Deutsch. Kakt. 116 (1930); *Echinocactus valdezianus* (Moell.) Boed., Monatsch. Deutsch. Kakt. 147 (1930); *Thelocactus valdezianus* (Moell.) Bravo, Cactaceas 473 (1937); *Mammillaria valdeziana* (Moell.) Kelsey & Dayton, Stand.Pl.Names ed.2,

75(1942); *Pelecyphora valdeziana* Moell. var. *albiflora* Pazout in Pazout, Valnicek et Subik, Kaktusy 129 (1960); *Echinocactus (Gymnocactus) valdezianus* (Moell.) Backbg., Cactaceae 5:2863 (1961); *Gymnocactus valdezianus* (Moell.) Backbg., Kakteenlex. 162 (1966); *Gymnocactus valdezianus* (Moell.) Backbg. var. *albiflorus* (Pazout) Backbg., Kakteenlex. 163 (1966); *Normanbokea valdeziana* (Moeller) Kladiwa et Buxbaum in Krainz, Die Kakteen CVIIIb, 1. 3. (1969); *Turbincarpus valdezianus* (Moell.) Glass et Foster, Cact. Succ. J. Amer. 49(4):174 (1977); *Neolloydia valdeziana* (Moell.) E.F. Anderson i Bradleya 4:14(1986)].

## subgenus *Neolloydia* Halda subg.nov.

[bas: *Neolloydia* Britton & Rose in Bull. Torrey Bot. Club 49:251(1922); *Echinomastus* Britton & Rose, Cactaceae 3:147 (1922)].

## sect. *Neolloydia*

Corpus simplex, cylindricus; spinae laterales tantum erecti vel radiatae; spinae centrales crassae, unguiformes vel erecti.

Stem single, cylindric; lateral spines erect or radiate; central spines thick, hooked or erect.

Type species: *Mammillaria conoidea* DC.

*P.conoideus* (DC) Halda stat.nov.

[bas: *Mammillaria conoidea* DC. in Mem. Mus. Hist. Nat. Paris 17:112(1828); *M. canescens* DC. in Prodr. 3:460(1828); *M. grandiflora* Otto ex Pfeiffer, Enum. Cact. 33 (1837); *M. diaphanacantha* Lem., Cact. Aliq. Nov. 39(1838); *M. inconspicua* Scheidw. in Bull. Acad. Sci. Brux. 5:495(1838); *M. echinocactoides* Pfeiffer in Allg. Gartenz. 8:281(1840); *Mammillaria scheeri* Muehlenpf. in Allg. Gartenz. 13:346 (1845); *M. strobiliformis* Engelm. in Wislizenus, Mem. Tour North. Mex. 113(1848); *Echinocactus conoideus* (DC) Poselger in Allg. Gartenz. 21:107(1853); *Cactus conoideus* (DC) Kuntze in Rev. Gen. Pl. 1:260(1891); *C. grandiflorus* (Otto ex Pfeiffer), l.c. 260; *C. echinocactoides* (Pfeiffer) Kuntze l.c. 260; *Mammillaria ceratites* Quehl in Monatschr. Kakt.-Kunde 19:155(1909); *Neolloydia ceratites* (Quehl) Br. & R., Cact. 4:16 (1923); *N. texensis* Br. & R. l.c. 18; *Coryphantha stuetzlei* Fric in Zivot v prirode 29:65(1925); *Neolloydia stuetzlei* (Fric) Orcutt, Cactography 8(1926); *Coryphantha conoidea* (DC) Orcutt ex A. Berger, Kakteen 266(1929); *C. ceratites* (Quehl) A. Berger, l.c. 266; *C. grandiflora* (Otto ex Pfeiffer) A. Berger l.c. 266; *Neolloydia conoidea* (DC) Britton & Rose in Bull. Torrey Bot. Club 49:252(1922); *N. grandiflora* (Otto ex Pfeiffer) F. Knuth in Backeb. & Knuth, Kaktus-ABC 368(1935); *N. matehualensis* Backeb. in Spine 1:108(1948); *N. conoidea* var. *grandiflora* (Otto ex Pfeiffer.) Kladiwa & Fittkau in Krainz, Die Kakteen 46(1971); *N. conoidea* var. *ceratites* (Quehl) Kladiwa & Fittkau, l.c. 46; *N. conoidea* var. *texensis* (Br. & R.) Kladiwa & Fittkau, l.c. 46; *N. conoidea* var. *matehualensis* (Backeb.) Kladiwa & Fittkau, l.c. 46].

***P. erectocentrus*** (J. Coulter) J. J. Halda stat. nov.

[bas: *Echinocactus erectocentrus* J. Coulter, Contr. U.S. Nat. Herb. 3:376 (1896); *Echinocactus horripilus* Lemaire var. *erectocentrus* Weber ex K. Schum., Gesamtb. Kakteen 443 (1898), pro syn.; *Echinomastus erectocentrus* Britton & Rose, Cactaceae 3:148 (1922); *Thelocactus erectocentrus* W. T. Marshall ex Kelsey & Dayton, Stand. Pl. Names ed. 2:78 (1942); *Neolloydia erectocentra* (J. Coulter) L. Benson, Cacti Ariz. ed. 3:24, 376 (1969); *Sclerocactus erectocentrus* (J. Coulter) N. P. Taylor in Bradleya 5:94 (1987)].

***P. intertextus*** (Engelmann) J. J. Halda stat. nov.

[bas: *Echinocactus intertextus* Engelmann, Proc. Amer. Acad. 3:277 (1857); *Cereus pectinatus centralis* Coulter, Contr. U. S. Nat. Herb. 3:386 (1896); *Echinocactus pectinatus centralis* Schumann, Gesamtb. Kakt. 271 (1898); *Echinomastus intertextus* Britton & Rose, Cactaceae 3:149 (1922); *Thelocactus intertextus* W. T. Marshall ex Kelsey & Dayton, Stand. Pl. Names ed. 2:78 (1942); *Neolloydia intertexta* L. Benson, Cact. Succ. J. Amer. 41:233 (1969); *Sclerocactus intertextus* (Engelmann) N. P. Taylor in Bradleya 5:94 (1987)].

**var. *dasyacanthus*** (Engelmann) J. J. Halda stat. nov.

[bas: *Echinocactus intertextus* var. *dasyacanthus* Engelm., Proc. Amer. Acad. 3:277 (1857); *Echinocactus intertextus* f. *dasyacanthus* Schelle, Handb. Kakteenkultur 201 (1907); *Echinomastus dasyacanthus* Britton & Rose, Cactaceae 3:150 (1922); *Echinocactus dasyacanthus* (Engelm.) Berger, Kakteen 251 (1929); *Thelocactus dasyacanthus* W. T. Marshall ex Kelsey & Dayton, Stand. Pl. Names ed. 2:78 (1942); *Echinomastus intertextus* var. *dasyacanthus* Backeberg, Cactaceae 5:2832 (1961); *Neolloydia intertexta* var. *dasyacantha* L. Benson, Cact. Succ. J. Amer. 41:233 (1969); *Sclerocactus intertextus* var. *dasyacanthus* (Engelmann) N. P. Taylor in Bradleya 5:94 (1987)].

***P. johnsonii*** (Engelmann) J. J. Halda stat. nov.

[bas: *Echinocactus johnsonii* Parry ex Engelm. in S. Watson in King, U.S. Geol. Expl. 40th Par. Botany 117 (1871); *Ferocactus johnsonii* Britton & Rose, Cactaceae 3:141 (1922); *Echinomastus arizonicus* Hester, Cact. Succ. J. Amer. 5:504 (1934); *E. johnsonii* Baxter, Calif. Cactus 75 (1935); *Thelocactus johnsonii* W. T. Marshall ex Kelsey & Dayton, Stand. Pl. Names ed. 2:78 (1942); *Neolloydia johnsonii* L. Benson, Cacti Ariz. ed. 3:25, 192 (1969); *Echinomastus johnsonii* var. *octocentrus* Coulter, Contr. U.S. Nat. Herb. 3:374 (1896); *E. johnsonii* var. *lutescens* Parish, Bull. Soc. Calif. Acad. Sci. 25:83 (1926); *Echinomastus johnsonii* var. *lutescens* Parish ex Glade, Cact. Succ. J. Amer. 27:106 (1955) nom. nud.; *Sclerocactus johnsonii* (Engelmann) N. P. Taylor in Bradleya 5:94 (1987)].

***P. mariposensis*** (Hester) J. J. Halda stat. nov.

[bas: *Echinomastus mariposensis* Hester, Desert Pl. Life 17:59 (1945); *Neolloydia mariposensis* (Hester) L. Benson, Cact. Succ. J. Amer. 41:188 (1969); *Echinocactus mariposensis* Weniger, Cacti S. W. 92 (1970); *Sclerocactus mariposensis* (Hester) N. P. Taylor in Bradleya 5:94 (1987)].

***P. scheeri*** (Salm-Dyck) J. J. Halda stat. nov.

[bas: *Echinocactus scheeri* Salm-Dyck, Cact. Hort. Dyck. 1849:155 (1850); *Coryphantha scheeri* Lemaire, Cactees 35 (1868); *Mammillaria scheeri* Muhlenpfordt in 1845; *Echinocactus megarhizus* Rose, Contr. U. S. Nat. Herb. 12:290 (1909); *Ancistrocactus megarhizus* Britton & Rose, Cactaceae 4:4 ((1923); *Ancistrocactus scheeri* Britton & Rose, Cactaceae 4:4 (1923); *Roseia castaneda* Fric, nomen nudum; *Ferocactus scheeri* (Salm-Dyck) N. P. Taylor, Cact. Succ. J. G.B. 41(4):90 (1979); *Sclerocactus scheeri* (Salm-Dyck) N. P. Taylor in Bradleya 5:94 (1987)].

***P. uncinatus*** (Galeotti) J. J. Halda stat. nov.

[bas: *Echinocactus uncinatus* Galeotti in Pfeiffer & Otto, Abbild. Besch. Cact. 2:18 (1848); *Ferocactus uncinatus* Britton & Rose, Cactaceae 3:146 (1922); *Hamatocactus uncinatus* Orcutt, Cactography 6 (1926); *Hamatocactus uncinatus* Gal. ex Borg, Cacti 219 (1937); *Echinomastus uncinatus* Knuth in Backeberg & Knuth, Kaktus-ABC 358 (1935); *Thelocactus uncinatus* W. T. Marshall in Marshall & Bock, Cactaceae 169 (1941); *Glandulicactus uncinatus* Backeberg, Blatter Kakteenf. 1938:6 (1938); *Ancistrocactus uncinatus* L. Benson, Cact. Succ. J. Amer. 41:188 (1969); *Sclerocactus uncinatus* (Galeotti) N. P. Taylor in Bradleya 5:94 (1987)].

**var. *crassihamatus*** (F. A. C. Weber) J. J. Halda stat. nov.

[bas: *Echinocactus crassihamatus* F. A. C. Weber in Bois, Dict. Hort. 468 (1896); *Echinocactus mathssonii* Berge ex Schumann, Monatsch. Kakt. 7:76 (1897); *Ferocactus crassihamatus* (F. A. C. Weber) Britton & Rose, Cactaceae 3:144 (1922); *Glandulicactus crassihamatus* (F. A. C. Weber) Backeberg, Beitr. Sukk. 6-8 (1940); *Thelocactus crassihamatus* (F. A. C. Weber) Marshall et Bock, Cactaceae 169 (1941); *Hamatocactus crassihamatus* (F. A. C. Weber) Buxbaum, Kakt. Sukk. 2:6 (1951); *Ancistrocactus crassihamatus* (F. A. C. Weber) L. Benson, Cact. Succ. J. Amer. 41:188 (1969); *Ferocactus mathssonii* (Berge & Schum.) N. P. Taylor, Cact. Succ. J. GB. 41(4):91 (1979); *Sclerocactus uncinatus* var. *crassihamatus* (F. A. C. Weber) N. P. Taylor in Bradleya 5:94 (1987)].

**var. *wrightii*** (Engelmann) J. J. Halda stat. nov.

[bas: *Echinocactus uncinatus* var. *wrightii* Engelmann, Proc. Amer. Acad. 3:272 (1857); *Echinocactus wrightii* Engelm. ex Rumpler in Forster, Handb. Kakteenk. ed.2:517 (1885); *Echinocactus wrightii* Coulter in Bailey, Stand. Cycl. Hort. 513 (1900); *Echinocactus uncinatus* f. *wrightii* Schelle, Handb. Kakteenkultur 160 (1907); *Hamatocactus wrightii* Orcutt, Cactography 6 (1926); *Echinomastus uncinatus* (Engelm.) Knuth var. *wrightii* Engelm. ex Knuth in Backeberg & Knuth, Kaktus-ABC 358 (1935); *Hamatocactus uncinatus* (Galeotti) Orcutt var. *wrightii* Engelm. ex Borg, Cacti 219 (1937), nom. nud.; *Thelocactus uncinatus wrightii* W. T. Marshall in Kelsey & Dayton, Stand. Pl. Names ed. 2:78 (1942), nom. nud.; *Glandulicactus uncinatus* (Engelm.) Backeberg var. *wrightii* Backeberg, Cactaceae 5:2925 (1961); *Ancistrocactus uncinatus* var. *wrightii* L. Benson, Cact. Succ. J. Amer. 41:188 (1969); *Sclerocactus uncinatus* var. *wrightii* (Engelmann) N. P. Taylor in Bradleya 5:94 (1987)].

***P. unguispinus*** (Engelmann) J. J. Halda stat. nov.

[bas: *Echinocactus unguispinus* Engelmann in Wislizenus, Mem. Tour. North. Mex. 111 (1848); *Echinocactus trollietii* Rebut, Balt. Cact. J. 2:147 (1895); *Echinomastus unguispinus*

(Engelm.) Britton & Rose, Cactaceae 3:150 (1922); *Thelomastus unguispinus* (Engelm.) Fric in Kreuzinger, Verzeichnis 10 (1935), nom. nud.; *Echinomastus napimiensis* Backeb., Cact. Succ. J. G.B. 15:67 (1953); *Echinomastus laui* Frank et Zecher, Cact. Succ. J. Amer. 50(4):188 (1978); *Echinomastus unguispinus* var. *laui* (Frank et Zecher) Glass & Foster, Cact. Succ. J. Amer. 51:124 (1979); *Sclerocactus unguispinus* (Engelmann) N. P. Taylor in Bradleya 5:94 (1987)].

**var. *durangensis*** (Runge) J. J. Halda stat. nov.

[bas: *Echinocactus durangensis* Runge, Handb. Gartenz. 46:231 (1850); *Echinomastus durangensis* (Runge) Britton & Rose, Cactaceae 3:152 (1922); *Sclerocactus unguispinus* var. *durangensis* (Runge) N. P. Taylor in Bradleya 5:94 (1987)].

***P. warnockii*** (L. Benson) J. J. Halda stat. nov.

[bas: *Neolloydia warnockii* L. Benson, Cact. Succ. J. Amer. 51:186 (1969); *Echinocactus pallidus* Backeberg, Cactaceae 5:2826 (1961), nom. nud.; *Echinocactus erectocentrus* var. *pallidus* (Backeberg) Weniger, Cacti Southwest 90 (1970), nom. nud.; *Echinomastus warnockii* (L. Benson) Glass & Foster, Cact. Succ. J. Amer. 47(5):222 (1975); *Sclerocactus warnockii* (L. Benson) N. P. Taylor in Bradleya 5:94 (1987)].

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