

BOLIVIA: NOMENCLATURAL REVISION IN CACTACEAE

Cumulopuntia F.Ritter, Kakt. Südamerika 2: 399 (1980).

Cumulopuntia boliviana (Salm-Dyck) F.Ritter **subsp. *flexibilispina*** (Hoxey et M.Lowry) Guiggi **comb. et stat. nov.** *Basionymus*: *Cumulopuntia flexibilispina* Hoxey et M.Lowry, in *Bradleya* 39: 46 (2021). **Typus**: Bolivia, Dept. La Paz, S of Charazani, 4.500 m, 8 Feb. 2017, P.Hoxey et M.Lowry 005 [LPB, *holo.*]. **Distributio**: NW Bolivia. **Annotarum**: a recognised ecological subspecies from the higher altitudinal range than to the type subspecies (4400-4650 vs. 3500-4300 m); the greater number of the spines (15-20 vs. 3-10) and their greater flexibility are considered as environmental adaptations to the lower temperatures and to a higher intensity of sun radiation (*cf.* Hoxey & Lowry, 2021: 52; Iliff, 2002: 180-182; Ritter, 1980: 492-493).

Cumulopuntia pulcherrima (Halda et Horáček) Guiggi **stat. nov.** *Basionymus*: *Tephrocactus pulcherrimus* Halda et Horáček, in *Acta Mus. Richnov. Sect. Nat.* 7(2): 75 (2000). **Typus**: Bolivia, Camargo, vicinity of Incahuasi, 3200 m, L.Horáček et J.J.Halda JJH&LH0011528 [PR, *holo.*]. *Synonymus*: *Cumulopuntia subterranea* subsp. *pulcherrima* (Halda et Horáček) G.J.Charles, in *Cact. Syst. Init.* 25: 16 (2011). **Distributio**: S Bolivia. **Annotarum**: the phylogenetic cladogram based on chloroplast DNA included in Ritz et al. (2012: 672) and in Ritz & Hunt (2014: 132) support this taxon as closer relatives to *Cumulopuntia ignota* (Britton et Rose) F.Ritter ex A.Pauca et Quipuscoa than to *C. subterranea* (R.E. Fries) F. Ritter, as consequence is here accepted and combined at specific rank. *Cumulopuntia pulcherrima* differs to *C. subterranea* for the normally absence of spines (*vs.* ≤ 10) and a larger flower (≤ 4.5 vs. ≤ 3 cm in diameter), (*cf.* Hunt, 2011: 15-16; Iliff, 2002: 233).

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NEW COMBINATIONS IN THE GENUS *MELOCACTUS* LINK *ET* OTTO FROM GREATER ANTILLES

Melocactus Link *et* Otto, in Verh. Vereins Beford. Gartenbaues Konigl. Preuss. Staaten 3: 417 (1827), *nom. cons.*

Melocactus harlowii (Britton *et* Rose) Vaupel, in Monatsschr. Kakteenk. 22: 66 (1912). *Synonymus*: *Melocactus santiagoensis* D.Barrios *et* Majure, in Taxon 71(5): 1007 (2022), **syn. nov.** **Annotarum**: the phylogenetic data (*cf.* Majure *et al.*, 2022: 1007), its morphology (*cf.* Rigerszki *et al.*, 2007: 67-68; Majure *et al.* 2022: 1007) and its distribution (*cf.* Map 11 in Rigerszki *et al.* 2007: 106; Majure *et al.* 2022: 1007) don't support the segregation of *Melocactus santiagoensis* from *M. harlowii*, here accepted as synonym of the latter taxon. In a recent phylogenetic dendrogram (Majure *et al.*, 2022: 998), the *Harlowii* group "Cuban clade" (*cf.* Rigerszki *et al.*, 2007: 65-104, 124-126, 130; Guiggi, 2010: 24-25) is represented by a polytomy, here resolved, considering the four subclades at level of infra-specific taxa [*i.e.* *Melocactus harlowii* subsp. *evae* (Z.Mészáros) Guiggi (2013: 3), subsp. *radoczii*, subsp. *acunae* and subsp. *harlowii*]. As consequence two new combinations are presented below.

Melocactus harlowii subsp. *acunae* (León) Guiggi **comb. et stat. nov.**

Basionymus: *Melocactus acunae* León, in Mem. Soc. Cub. Hist. Nat. Felipe Poey 8: 205 (1934), as "*acunai*". **Typus**: *non designatus*. **Lectotypus** (*designatus* by Majure *et al.*, 2022: 1004): Cuba, Oriente, Maisí, Baracoa, Meseta de Maisí, Feb. 1929, J.B.Acuña 5169 [HAC, *holo.*]. *Synonymus*: *Melocactus acunai* var. *flavispinus* Z.Mészáros, in Acta Bot. Hung. 22: 138 (1977). **Distributio**: E Cuba. **Annotarum**: an infra-specific taxon distinguished by very stout and thick spines (> 3 mm in diameter), the centrals to 5 cm long, and with a normally rigid cephalium bristles, seeds with the testa cells tubercled (*cf.* Mészáros, 1977: 130, 138, 1978: 305; Taylor, 1991: 78; Rigerszki *et al.*, 2007: 73-95, 130; Guiggi, 2010: 31; Majure *et al.*, 2022: 998, 1004-1005).

Melocactus harlowii subsp. *radoczii* (Z.Mészáros) Guiggi **comb. et stat. nov.**

Basionymus: *Melocactus radoczii* Z.Mészáros, in Acta Bot. Acad. Sci. Hung. 22: 136 (1977). **Typus**: Cuba, Prov. Guantánamo, on serpentine rocks on the outskirts of Guajimero, N of La Tinta, Sierra de Baracoa, May 1975, Z.Mészáros *et* G.Radócz s.n. [SV in HAC, *holo.*]. *Synonymi*: *Melocactus acunai* subsp. *lagunaensis* Z.Mészáros, in Acta Bot. Hung. 22: 138 (1977); *Melocactus lagunaensis* (Z.Mészáros) D.Barrios *et* Majure, in Taxon 71(5): 1005 (2022). **Distributio**: E Cuba. **Annotarum**: a subspecies characterized by 10 ribs, central spines curved upwards, *cephalium* bristles very dense and bright, flower to 12-14 mm in diameter (*cf.* Mészáros, 1977: 131, 136-137, 1978: 305; Rigerszki *et al.*, 2007: 124-126, 130; Majure *et al.*, 2022: 998, 1005-1006).

Melocactus lemairei (Monville *ex* Lemaire) Miquél *ex* Lemaire subsp. *pygmaeus* (Hoxey, Gdaniec *et* Ackerman) Guiggi **comb. et stat. nov.** *Basionymus*: *Melocactus pygmaeus* Hoxey, Gdaniec *et* Ackerman, in Caribbean J. Scie., 52(2): 210 (2022). **Typus**: Puerto Rico. Cordillera Central, 22 Apr. 2022, P.Hoxey *et* A.Gdaniec 61 [US, *holo.*; UPRRP, *iso.*]. **Distributio**: Central Puerto Rico. **Annotarum**: the origin of this Puerto Rican taxon is referred here by birds seed dispersal (*i.e.* ornithochory) from populations of *Melocactus lemairei* of the adjacent Hispaniola. The comparison of the common vegetative and reproductive characters between these two taxa (*i.e.* areoles elliptic and white, ribs with acute apex, spines yellowish-brown, subulated, slightly curved, *cephalium* with dense whitish wool, flower pink exerted, to 20 mm long, seeds with testa cells tubercled, to 1.1 mm long) support *M. pygmaeus* as a geographical subspecies of *M. lemairei* characterized by a dwarf *corpus* (to 60 x to 70 vs. to 400 x to 200 mm), *cephalium* (30 x 45 vs. to

120 x to 90 mm) and *fructus* (10 x 5 vs. to 25 x 10 mm), (*cfr.* Guiggi, 2007: 21; Gdaniec *et al.*, 2022: 217).

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A NEW MAMMILLOID GENUS FROM SW UNITED STATES AND N MEXICO

***Fimbriatocactus* Guiggi gen. nov. Diagnosis:** *differt from the phylogenetic sister genus Neolloydia Britton et Rose sensu stricto for its normally globose (vs. short-cylindric) habit; stem to 8 cm tall (vs. to 24 cm); areoles monomorphic, circular (vs. dimorphic, elongated), tubercles to 2.4 cm long, terete (vs. to 1 cm, conical); axils naked (vs. woolly at the top); spines to 34 in number (vs. to 26), bristlelike, stiff or hooked (vs. bulbous at the base, acicular, straight); flower with the margins of the outermost perianth segments very fringed (vs. entire), larger (to 5.2 x to 7.5 vs. to 3.2 x to 5.5 cm); fruit fleshy (vs. dry at maturity), larger (to 2.8 x 2.6 vs. to 1 x to 0.8 cm), floral remnant persistent (vs. deciduous); seeds with testa cells pitted (vs. strongly convex). Typus generis: Mammillaria wrightii Engelm [≡ Fimbriatocactus wrightii (Engelm) Guiggi]. Etymology: a compound name from Latin *fimbriatus* “fimbriated”, referred to the outermost fringed perianth segments with the addition of the Latin *cactus*. Annotarum: four phylogenetic analysis (Butterworth & Wallace, 2004: 1091; Cervantes *et al.*, 2021: 32; Breslin *et al.*, 2021: 313, 2022: 1477) support the *Mammillaria wrightii* complex (*cf.* Zimmerman & Zimmerman, 1977: 23-34, 51-62) as belonging to a different lineage than to *Mammillaria* Haworth and *Cochemiea* (K.Brandege) Walton, but sister of *Neolloydia conoidea* Britton et Rose (*cf.* Breslin *et al.*, 2021: 313, 2022: 1477). The peculiar reproductive morphology of the *Mammillaria wrightii* complex (see the above *diagnosis*) justify the cited phylogenetic results and the new genus here erected. The recent amplification of the genus *Cochemiea* (Breslin *et al.*, 2021: 308-323) is not here accepted as a consequence of the fact that the included phylogenetic results (Breslin *et al.*, 2021: 313) confirm a traditional systematic based on the segregation of the genera *Bartschella* Britton et Rose, *Chilita* Orcutt, *Cochemiea sensu stricto*, *Neolloydia* Britton et Rose *sensu stricto*, *Ohmea* Buxbaum (Guiggi, 2022: 2-3) and *Phellosperma* Britton et Rose with the addition here of *Fimbriatocactus* from *Mammillaria sensu lato*, for that reason the taxonomic concept of *Cochemiea sensu lato* is unnecessary. The relative new combinations follow below.*

***Fimbriatocactus barbatus* (Engelm) Guiggi comb. nov. Basionymus:** *Mammillaria barbata* Engelm in Wislizenus, Mem. Tour N. Mexico 105 (1848). **Typus:** Mexico, W Chihuahua, Cosihuirachi, 1846, F.A.Wislizenus s.n. [MO, *holo.*]. **Synonymi:** *Chilita barbata* (Engelm) Orcutt, Cactography 2 (1926); *Cochemiea barbata* (Engelm) Doweld, in Sukkulenty 3(1-2): 38 (2000); *Mammillaria morricalii* Cowper, in Cact. Succ. J. (U.S.) 41: 208 (1969); *Mammillaria santaclarensis* Cowper, in Cact. Succ. J. (U.S.) 41: 248 (1969). *Mammillaria garessii* Cowper, in Cact. Succ. J. (U.S.) 42: 14, 93 (1970). **Distributio:** N Mexico.

***Fimbriatocactus viridiflorus* (Britton et Rose) Guiggi comb. nov. Basionymus:** *Neomammillaria viridiflora* Britton et Rose, The Cact. 4: 153 (1923). **Typus:** United States, Arizona, between Pinal and Gila Co., on Superior-Miami Highway, near Boundary Monument, 1430 m, 5 Jul. 1922, C.R. Orcutt 608 [US, *holo.*]. **Synonymi:** *Chilita viridiflora* (Britton et Rose) Orcutt, Cactography 2 (1926); *Mammillaria viridiflora* (Britton et Rose) Boedeker, Mammillarien-Vergleichs-Schlüssel 36 (1933); *Mammillaria wrightii* var. *viridiflora* (Britton et Rose) W.T. Marshall, in Desert. Bot. Gard. Arizona, Sci. Bull. 1: 102 (1950); *Cochemiea viridiflora* (Britton et Rose) P.B.Breslin et Majure, in Taxon 70(2): 320 (2021); *Mammillaria orestera* L.D.Benson, Cacti Ariz. ed. 3. 22 (1969). **Distributio:** SW United States. **Annotarum:** a taxon close relative to *Fimbriatocactus barbatus*, here accepted following Britton & Rose (1923: 69, 153) and Zimmerman & Parfitt (2003: 251).

Fimbriatocactus wilcoxii (Toumey ex K.Schumann) Guiggi **comb. nov.** *Basionymus*: *Mammillaria wilcoxii* Toumey ex K.Schumann, Gesamtbeschr. Kakt. 545 (1898). *Neotypus* (*designatus* by Benson, 1977: 35): United States, Arizona, Cochise Co., SW Benson, 1350 m, 22 Feb. 1976, D.A.Zimmerman et A.D.Zimmerman 2788 [POM, *holo.*]. *Synonymi*: *Mammillaria wrightii* subsp. *wilcoxii* (Toumey ex K.Schumann) D.R.Hunt, *Mammillaria* Postscripts 6: 5 (1997); *Mammillaria meridiorosei* Castetter, P.Pierce et K.H.Schwerin, in *Cact. Succ. J. (U.S.)* 50: 177 (1978). **Distributio**: SW United States, N Mexico. **Annotarum**: a phylogenetic analysis support *Fimbriatocactus wilcoxii* as a valid species distinct from *F. wrightii* and to the close relative *F. viridiflorus* (*cfr.* Breslin et al., 2021: 313, 2022: 1477).

Fimbriatocactus wrightii (Engelmann) Guiggi **comb. nov.** *Basionymus*: *Mammillaria wrightii* Engelmann, in *Proc. Amer. Acad. Arts.* 3: 262 (1856). *Lectotypus* (*designatus* by Coulter, *cfr.* Hunt et al. 2006: 179): United States, New Mexico, near Santa Rita Copper mines, Aug. 1851, C.Wright s.n. [MO, *holo.*]. *Synonymus*: *Cochemiea wrightii* (Engelmann) Doweld, in *Sukkulenty* 3(1-2): 39 (2000). **Distributio**: SW United States, N Mexico.

Fimbriatocactus wrightii* f. *wolfii (Hunt) Guiggi **comb. nov.** *Basionymus*: *Mammillaria wrightii* Engelmann f. *wolfii* Hunt, in *Cact. Succ. J. G.B.* 41(4): 97 (1979). **Typus**: Mexico, Chihuahua, near Santa Clara Canyon, 6 Mar. 1974, A.Lau 1042 [K, *holo.*]. **Distributio**: N Mexico. **Annotarum**: a form characterized by white flower (*vs.* magenta or purple), (*cfr.* Hunt, 1979: 97).

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***Addendum et corrigendum* to Cactology V (Suppl. XIII)**

The etymology of *Caerulocereus* Guiggi is more properly derived from the Latin *Caerulus* "blue", an alternative form of *Caeruleus*.

Nomenclatural novelties proposed in this *supplementum*

Cumulopuntia boliviana subsp. *flexibilispina* (Hoxey et M.Lowry) Guiggi *comb. et stat. nov.*

Cumulopuntia pulcherrima (Halda et Horáček) Guiggi *stat. nov.*

Melocactus harlowii subsp. *acunai* (León) Guiggi *comb. et stat. nov.*

Melocactus harlowii subsp. *radoczii* (Z.Mészáros) Guiggi *comb. et stat. nov.*

Melocactus lemairei subsp. *pygmaeus* (Hoxey, Gdaniec et Ackerman) Guiggi *comb. et stat. nov.*

Fimbriatocactus Guiggi *gen. nov.*

Fimbriatocactus barbatus (Engelmann) Guiggi *comb. nov.*

Fimbriatocactus viridiflorus (Britton et Rose) Guiggi *comb. nov.*

Fimbriatocactus wilcoxii (Toumey ex K.Schumann) Guiggi *comb. nov.*

Fimbriatocactus wrightii (Engelmann) Guiggi *comb. nov.*

Fimbriatocactus wrightii f. *wolfii* (Hunt) Guiggi *comb. nov.*