

## NEW GENERA AND COMBINATIONS IN THE BRAZILIAN CACTACEAE

***Acanthocephala*** Backeberg, Blätt. Kakteenf. 1938(6): [7, 21] (1938). *Synonymi*: *Brasilicactus* Backeberg, Cactaceae (Berlin) 1941, Pt. 2, 36, 76 (1942), *nom. illeg.* (*cfr.* ICN Art. 52.1, Turland *et al.*, 2018; Eggli *et al.*, 2008: 986); *Notocactus* subgen. *Brasilicactus* Buxbaum in Krainz, Die Kakteen, part 35: [unpaged] (1967); *Parodia* subgen. *Brasilicactus* (Buxbaum) F.H. Brandt, in Kakt. Orch. Rundschau 7: 53 (1982) “*Brasilicactea*”; *Brasiliparodia* F.Ritter, Kakt. Südamerika 1: 144 (1979). **Notae**: a phylogenetic analysis (*cfr.* Nyffeler & Eggli, 2010: 6) supports *Acanthocephala* as distinct lineage in the tribe *Notocactae* including *Brasiliparodia* with similar seed morphology (*cfr.* Ritter, 1979: 144), follow below the additional combinations than to Guiggi (2012a: 6; 2012b: 1).

***Acanthocephala alacriportana*** (Backeberg *et* Voll) Guiggi **comb. nov.** *Basionymus*: *Parodia alacriportana* Backeberg *et* Voll, in Arch. Jard. Bot. Rio de Janeiro 9: 166 (1949). **Typus**: Brazil, Rio Grande do Sul, serro near Porto Alegre, 1939, *H. Berger* s.n., *cult. hort.* Rio de Janeiro, *non servatus* (*cfr.* Hunt *et al.* 2006: 218). **Lectotypus** (*designatus* by Hunt & Taylor, Cact. Syst. Init. 2006: 9): fig. 1 in *loc. cit.* 9: 166 (1949). *Synonymi*: *Brasiliparodia alacriportana* (Backeberg *et* Voll) F.Ritter, Kakt. Südamerika 1: 149 (1979); *Brasilicactus alacriportanus* (Backeberg *et* Voll) Doweld, in Sukkulenty 2(3): 24 (1999). **Distributio**: SE Brazil. **Notae**: the type subspecies has 4-7 yellow central spines and ca. 20 thin radials, distributed near Porto Alegre (*cfr.* Ritter, 1979: 149; Anderson, 2001: 539).

***Acanthocephala alacriportana* subsp. *brevihamata*** (W.Haage *ex* Backeberg) Guiggi **comb. nov.** *Basionymus*: *Parodia brevihamata* W.Haage *ex* Backeberg, in Descr. Cact. Nov. 31 (1957). **Typus**: Brazil, Rio Grande do Sul, *non servatus*. **Lectotypus** (*designatus* by Doweld, 2000: 59): *ico.* 1536 in Backeberg, Die Cact. 3: 1599 (1959). **Epitypus** (*designatus* by Doweld, 2000: 59): Brazil, Rio Grande do Sul, Jaquirana, *F. Ritter* 1277 [SGO, *holo.*]. *Synonymi*: *Brasiliparodia brevihamata* (W.Haage *ex* Backeberg) F.Ritter, Kakt. Südamerika 1: 151 (1979); *Brasiliparodia brevihamata* f. *conjugens* F.Ritter, Kakt. Südamerika 1: 151 (1979); *Brasiliparodia brevihamata* var. *mollispina* F.Ritter, Kakt. Südamerika 1: 151 (1979); *Brasilicactus brevihamatus* (W.Haage *ex* Backeberg) Doweld, in Sukkulenty 1999(2): 24 (1999); *Parodia alacriportana* subsp. *brevihamata* (W.Haage) Hofacker *et* P.J.Braun, in Cact. Cons. Init. 6: 10 (1998). **Distributio**: SE Brazil. **Notae**: subspecies characterized for its 4-6 yellow central spines with reddish tips and ca. 16 yellowish-white radials, distributed near Jaquirana (*cfr.* Ritter, 1979: 151; Anderson, 2001: 539).

***Acanthocephala alacriportana* subsp. *buenekeri*** (Buining) Guiggi **comb. nov.** *Basionymus*: *Parodia buenekeri* Buining, in Succulenta 1962: 99 (1962). **Typus**: Brazil, border of Rio Grande do Sul and Santa Catarina, 1400 m, 1961, *A.F.H. Buining et F. Bueneker* s.n. [U, *holo.*, *cfr.* Hunt *et al.* 2006: 218]. *Synonymi*: *Brasiliparodia buenekeri* (Buining) F.Ritter, Kakt. Südamerika 1: 149 (1979); *Brasiliparodia buenekeri* f. *conjugens* F.Ritter, Kakt. Südamerika 1: 150 (1979); *Brasiliparodia buenekeri* var. *intermedia* F.Ritter, Kakt. Südamerika 1: 151 (1979); *Brasilicactus buenekeri* (Buining) Doweld, in Sukkulenty 2(3): 24 (1999); *Parodia alacriportana* subsp. *brevihamata* (Buining) Hofacker *et* P.J.Braun, in Cact. Cons. Init. 6: 10 (1998). **Distributio**: SE Brazil. **Notae**: infra-specific taxon distinguished for its 4-6 brownish central spines,

sometimes hooked and ca. 13 whitish radials, distributed near Cambara (*cfr.* Ritter, 1979: 149-151; Anderson, 2001: 539).

*Acanthocephala alacriportana* subsp. *catarinensis* (F.Ritter) Guiggi **comb. nov.** *Basionymus:* *Brasiliparodia catarinensis* F.Ritter, Kakt. Südamerika 1: 152 (1979). **Typus:** Brazil, Santa Catarina, Bom Jardim da Serra, L. Horst 40 in F. Ritter 1401a [U, *holo.*, *cfr.* Hunt *et al.* 2006: 218]. **Synonymi:** *Brasilicactus catarinensis* (F.Ritter) Doweld, in Sukkulenty 2(3): 24 (1999); *Parodia alacriportana* subsp. *catarinensis* (F.Ritter) Hofacker *et* P.J.Braun, in Cact. Cons. Init. 6: 10 (1998). **Distributio:** SE Brazil. **Notae:** subspecies characterized for its 4-10 brownish central spines and 16-22 bright yellow radials, distributed in Santa Catarina (*cfr.* Ritter, 1979: 152; Anderson, 2001: 539).

*Acanthocephala rechensis* (Buining) Guiggi **comb. nov.** *Basionymus:* *Notocactus rechensis* Buining, in Kakt. and. Sukk. 19(2): 23 (1968). **Typus:** Brazil, Rio Grande do Sul, near Ana Rech, 10 Feb. 1967, H.M. Büneker *et al.* s.n. [U, *holo.*, *cfr.* Hunt *et al.* 2006: 223]. **Synonymi:** *Brasiliparodia rechensis* (Buining) F.Ritter, Kakt. Südamerika 1: 149 (1979); *Brasilicactus rechensis* (Buining) Doweld, in Sukkulenty 2(3): 24 (1999). **Distributio:** SE Brazil.

*Cereus* Miller, Gard. Dict., ed. 8. (1768).

*Cereus hexagonus* (Linnaeus) Miller **subsp. gerardi** (N.P.Taylor) Guiggi **comb. et stat. nov.** *Basionymus:* *Cereus gerardi* N.P.Taylor, in Taxon 72(6): 1329 (2023). **Typus:** Brazil, Tocantins, Mun. Pugmil, 344 m, on low granitic rock outcrops in Cerrado, 12 Feb. 2020, G. Olsthoorn s.n. [UB, *holo.*]. **Distributio:** N Brazil. **Notae:** a southern geographical subspecies (N Brazil *vs.* N Brazil, Guianas, Trinidad & Tobago, Venezuela), with slightly constricted stems (*vs.* constricted), ribs 7-12 (*vs.* normally 4-7), lower (1.5 *vs.* 2.5-5.5 cm high), longer spines (to 8 *vs.* 5.5 cm long). Comparing the morphology, ecology and biogeography of the both analysed taxa, these are obviously conspecific, supporting the nomenclatural change proposed here (*cfr.* Leuenberger, 1997: 11-14; Hunt *et al.*, 2006: 40; Taylor *et al.*, 2023: 1329). The phylogenetic data reveal two suclades close relatives, interpreted as *Cereus hexagonus* subsp. *hexagonus* (coll. EMA 2184-Roraima *sub* *Cereus hexagonus* and PH 1299-Haiti, PH 1702-Grenada *sub* *Cereus lepidotus* Salm-Dyck *sensu* Taylor & Zappi, 2019: 19-23) and *Cereus hexagonus* subsp. *gerardi* (coll. SORO 7966-Tocantins *sub* *Cereus hexagonus*, SORO 7967-Maranhão *sub* *Cereus jamacaru* and *Cereus hexagonus*, SORO 7989-Tocantins *sub* *Cereus gerardi*), (*cfr.* Romeiro-Brito *et al.*, 2022: fig. 2, Supp. Data; Taylor *et al.*, 2023: 1324).

*Chapadocereus* (P.J.Braun *et* Esteves) Guiggi **gen. et stat. nov.** *Basionymus:* *Arthrocerus* subgen. *Chapadocereus* P.J.Braun *et* Esteves, in Succulenta. 74(2): 82 (1995). **Typus generis:** *Eriocereus spinosissimus* Buining *et* Brederoo [= *Chapadocereus spinosissimus* (Buining *et* Brederoo) Guiggi]. **Notae:** a phylogenetic analysis of the tribe *Cereeae* (*cfr.* Romeiro-Brito *et al.*, 2023: 7) confirms *Eriocereus spinosissimus* as a distinct sister taxon than to *Arthrocerus sensu stricto* [*i.e.* *Arthrocerus glaziovii* (K.Schumann) N.P.Taylor *et* Zappi, *A. melanurus* (K.Schumann) Diers, P.J.Braun *et* Esteves, and *A. rondonianus* Backeberg *et* Voll], here combined at generic rank. The new generic *status* is also supported by a distinctive reproductive morphology and biogeography than to *Arthrocerus s.s.*: flower smaller (6.5 x 5-5.5 *vs.* to 16.5 x 10 cm), with dense hairs (*vs.* slightly or without hairs), frequently S-shaped ( $\pm$  straight), fruit hairy ( $\pm$  naked), seeds with strongly tubercled testa-cells (*vs.* convex), with a far and disjunct distribution in Chapada dos Guimaraes, Mato Grosso (*vs.* Minas Gerais), (*cfr.* Theunissen & Brederoo, 1977: 49-51; Braun & Esteves-Pereira, 1995: 82; Barthlott & Hunt, 2000: 45, 93; Taylor & Zappi, 2004: 81, 436; Hunt *et al.*, 2006: 30-31).

*Chapadocereus spinosissimus* (Buining et Brederoo) Guiggi **comb. nov.** *Basionymus*: *Eriocereus spinosissimus* Buining et Brederoo, in *Kakt. and. Sukk.* 28: 49 (1977). *Typus*: Brazil, Mato Grosso, Cuiabá, on vertical cliffs, 450 m, 1972/74, A.F.H. Buining et L. Horst H328 [U, *holo.*, *cfr.* Hunt et al., 2006: 31]. *Synonymus*: *Arthrocereus spinosissimus* (Buining et Brederoo) F. Ritter, *Kakt. Südamerika* 1: 244 (1979). **Distributio**: W Brazil.

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

*Melocactus ernestii* Vaupel **f. heimenii** (P.J. Braun et Gonçalves Brito) Guiggi **comb. et stat. nov.** *Basionymus*: *Melocactus heimenii* P.J. Braun et Gonçalves Brito, in *Kakt. and. Sukk.* 70(10): 310 (2019). **Typus**: Brazil, Bahia, Pedra da Lua, ca. 70 km N of Campo Formoso, ca. 645 m, 6 Jan. 2019, B. Gonçalves Brito 7 [RB, *holo.*; HBR, SP, *iso.*]. **Distributio**: NE Brazil. **Notae**: a form with stouter and shorter spines due to a cytogenetic variability of the reference species (*cfr.* Taylor et al., 2023: 133).

*Mirabella* F. Ritter, *Kakt. Südamerika* 1:108 (1979). *Synonymus*: *Estevesia* P.J. Braun, in *Kakt. and. Sukk.* 60(3): 64 (2009). **Notae**: the inclusion of *Estevesia* in *Mirabella* is essentially due to the similar morphology (*cfr.* Ritter, 1979: 108-109; Braun & Esteves-Pereira, 2009: 64-65), this superficial close relationship is supported also by phylogenetic results (*cfr.* Romeiro-Brito et al., 2023: 8).

*Mirabella alexbragae* (P.J. Braun et Esteves) Guiggi **comb. nov.** *Basionymus*: *Estevesia alexbragae* P.J. Braun et Esteves, in *Kakt. and. Sukk.* 60(3): 64 (2009), '*alex-bragae*'. **Typus**: Brazil, Goiás, 790 m, 2007, A. Braga-Nascimento 84 [UFG, *holo.*]. **Distributio**: Central Brazil. **Notae**: distinguished from *Mirabella minensis* F. Ritter by its erect (*vs.* decumbent), lower (to 0.5-0.7 *vs.* to 1 m tall) and fewer ramified stem, ribs 7-10 (*vs.* 3-6), areoles with shorter (to 18 *vs.* 25 mm long) and with a higher number of spines (6-13 *vs.* 3-6), flower-tube spiny (*vs.* with trichomes), fruit yellowish (*vs.* pinkish), spiny (*vs.* with trichomes, rarely with minute spines), seeds larger (3.5-4.2 x 2.0-2.5 *vs.* 2.4 x 1.6 mm), with the testa-cells tubercled (*vs.* smooth), slightly rugose (*cfr.* Hunt et al., 2006: 41; Taylor & Zappi, 2004: 270-271; Braun & Esteves-Pereira, 2009: 64). The recognition of this taxon as a separated species from *Mirabella minensis*, in contrast with Taylor et al. (2023: 1331) is also supported by a phylogenetic dendrogram (*cfr.* Romeiro-Brito et al., 2023: 8).

*Pierrebraunia* Esteves, in *Cact. Succ. J. (U.S.)* 69(6): 296 (1997).

*Pierrebraunia bahiensis* **subsp. flava** (Gonzaga et Engels) Guiggi **comb. et stat. nov.** *Basionymus*: *Arrojadoa flava* Gonzaga et Engels, in *Phytotaxa* 597(1): 74 (2023). *Typus*: Brazil, Bahia, Ibitiara, Cadeia do Espinhaço, Chapada Diamantina, 7 Sept. 2022, M.E. Engels et D. Liebsch 9.900 [RB, *holo.* et *para. spec. vis* (*cfr.* Gonzaga, Liebsch & Engels, 2023: 75); HPCB, *iso.*]. **Distributio**: NE Brazil. **Notae**: a recognised geographical subspecies distinguished by its yellowish spines, grayish in age (*vs.* brownish, blackish in age), lesser number of central spines 1-2 (*vs.* 1-4), more numerous (to 17 *vs.* to 10) and longer radial spines (to 10 *vs.* to 5 mm long), yellowish-white flowers and fruits (*vs.* magenta-pink), without an overlapping distribution (*cfr.* Taylor & Zappi, 2004: 294-295; Gonzaga, Liebsch & Engels, 2023: 74-78). A recent phylogenetic analysis of the tribe *Cereeae* (Romeiro-Brito et al., 2023: 8) has corroborated the result of a previously unpublished study (Soffiatti *ined.*, *cfr.* Taylor & Zappi, 2004: 295) in contrast with another analysis, with a low phylogenetic resolution (Fantinati et al., 2021: 695, *cfr.* Romeiro-Brito et al., 2023: 12), confirming

*Pierrebraunia bahiensis* (P.J.Braun *et* Esteves) Esteves as a close relative of *Lagenosocereus luetzelburgii* (Vaupel) Doweld but belonging to a distinct *cladus* than to *Arrojadoa* Britton *et* Rose *sensu stricto*, result supported also by the absence of a proper, ring terminal *cephalium*, a character diagnostic for the inclusion to the genus *Arrojadoa* (Taylor & Zappi, 2004: 295). As consequence, *Pierrebraunia* Esteves is here accepted as a monotypic genus distinguishable from the sympatric *Lagenosocereus* Doweld for its short-cylindrical stem, not bottle-shaped, fertile part undifferentiated, *etc* (Taylor & Zappi, 2004: 292-295), with the exclusion of the two others known species, which are recently (Taylor *et al.*, 2023: 125) and below transferred to the genus *Pilosocereus* Byles *et* G.D.Rowley.

*Pilosocereus* Byles *et* G.D.Rowley, in *Cact. Succ. J. Gr. Brit.* 19: 66 (1957).

*Pilosocereus eddie-estevessii* (P.J.Braun) Guiggi **comb. et stat. nov.** *Basionymus:* *Pierrebraunia eddie-estevessii* P.J.Braun, in *Kakt. and. Sukk.* 68(12): 319 (2017). **Typus:** Brazil, N of Minas Gerais, Serra do Espinhaço, 1000-1200 m, *E.Esteves Pereira* E-505 [UFG, *holo.*; HAL, *iso.*]. **Distributio:** SE Brazil. **Notae:** the cylindrical elongated, bluish-green stem, the reproductive areoles with tufts of white wool, the flower tubular-infundibuliform, purplish externally, *etc.* confirm the belonging of this species to *Pilosocereus* Byles *et* G.D.Rowley (*cf.* Braun, 2017: 317-321; Zappi, 1994: 25-26; Taylor & Zappi, 2004: 303-304).

*Pilosocereus fulvilanatus* (Buining *et* Brederoo) F.Ritter **subsp. brauniorum** (Esteves) Guiggi **stat. nov.** *Basionymus:* *Pierrebraunia brauniorum* Esteves, in *Kakt. and. Sukk.* 50(12): 312 (1999). **Typus:** Brazil, Minas Gerais, Serra do Espinhaço, 26 Aug. 1999, *E.Esteves Pereira* E-515 [UFG, *holo.*]. *Synonymus:* *Pilosocereus brauniorum* (Esteves) N.P.Taylor *et* Zappi, in *Bradleya* 41: 125 (2023). **Distributio:** SE Brazil. **Notae:** an ecological infra-specific taxon from the higher altitudinal range of the species at 1200-1700 m (*vs.* 700-1000 m) characterised by an epidermis greyish-green (*vs.* intense blue), a dark brown *pseudocephalium* (*vs.* reddish-brown), a flower deep pink (*vs.* greenish-white), (*cf.* Esteves-Pereira, 1999: 312-314; Zappi, 1994: 99-101; Taylor & Zappi, 2004: 327; Taylor *et al.*, 2023: 125-127). In accordance with Taylor *et al.* (2023: 126), the distinctive pink color of the flowers of this recognized subspecies is just an adaptation to the more elevated habitat with a transition to hummingbird pollination.

*Pilosocereus pentaedrophorus* (Labouret) Byles *et* G.D.Rowley **subsp. glaucochrous** (Werdermann) Guiggi **stat. nov.** *Basionymus:* *Pilosocereus glaucochrous* Werdermann, *Brasil. Sauielenkakteen* 106 (1933). **Typus:** Brazil, Bahia, near Morro do Chapéu, Serra do Espinhaço, ca. 1000 m, Apr. 1932, *R.E. Werdermann* 3290 [B, *holo.*, †]. **Lectotypus** (*designatus* by Zappi, 1994: 76): *ico. pag.* 102, in Werdermann, *loc. cit.* (1933). *Synonymus:* *Pseudopilosocereus glaucochrous* (Werdermann) Buxbaum, in *Beitr. Biol. Pflanzen* 44(2): 252 (1968). **Distributio:** SE Brazil. **Notae:** a recognised ecological subspecies from the higher altitudinal range (740-1150 *vs.* 150-1000 m) distinguished by its areoles with longer hairs, a higher number of ribs (4-10 *vs.* 4-6) and the flowers with a greater purplish-pink shade of the tube and of the outermost perianth segments, the other vegetative and reproductive characters and the distribution are overlapping with those of the subspecies type (*cf.* Zappi, 1994: 61, 71-78; Taylor & Zappi, 2004: 104, 320-324; Hunt *et al.*, 2006: 237, 239). The close relationship between these two taxon is also supported by a phylogenetic analysis of the tribe *Cereeae* (*cf.* Romeiro-Brito *et al.*, 2023: 8).

*Viridicereus* Guiggi **gen. nov.** **Diagnosis:** *differt from Micranthocereus Backeberg sensu stricto and from Austrocephalocereus Backeberg for its stem solitary (vs. normally branched at base) and inclined in age (vs. normally erect), vascular cylinder strongly woody (vs. not woody); cephalium bristles reddish to brownish (vs. golden or yellowish); flower with a green (vs. whitish to*

pinkish) pericarpel; mature fruit green (vs. reddish or pinkish). **Typus generis:** *Micranthocereus violaciflorus* Buining [= *Viridicereus violaciflorus* (Buining) Guiggi]. **Etymology:** a compound name from Latin *viridis* “green”, referred to the peculiar mature fruit green and from Latin *Cereus* for its cereiform morphology. **Notae:** a recent phylogenetic analysis (Romeiro-Brito *et al.*, 2023: 8) exclude *M. violaciflorus* from *Micranthocereus* Backeberg and from *Austrocephalocereus* Backeberg, showing closer relations with *Floribunda* F. Ritter and *Pierrebraunia* Esteves, but recognised this species phylogenetically distinct, with no obvious points in common with these both genera, confirming the distinctiveness of this taxon, considered as a rare, relictual species with a restricted distribution, characterized by peculiar violet flowers and ripe fruits green (*cf.* Buining, 1969: 129-130; Taylor & Zappi, 2004: 348-350; Hunt *et al.*, 2006: 191), here recognized as belonging to a new monotypic genus. The new combination follow below.

*Viridicereus violaciflorus* (Buining) Guiggi **comb. nov.** *Basionymus:* *Micranthocereus violaciflorus* Buining, in *Kakt. and. Sukk.* 20: 129 (1969). **Typus:** Brazil, Minas Gerais, Chapada Diamantina, 950 m, 24 Jun. 1968, A.F.H. Buining in *L. Horst* 275 [U, *holo.*] *Synonymus:* *Arrojadoa violaciflora* (Buining) N.P.Taylor, in *Ann. Bot. (Oxford)* 132(5): 1002 (2023). **Distributio:** SE Brazil.

*Xiquexique* Lavor, Calvente *et* Versieux, in *PlantNow* 1(2): 63 (2020).

*Xiquexique gounellei* (F.A.C.Weber *ex* K.Schumann) Lavor *et* Calvente **subsp. frewenii** (Zappi *et* N.P.Taylor) Guiggi **stat. nov.** *Basionymus:* *Pilosocereus frewenii* Zappi *et* N.P.Taylor, in *Bradleya* 29: 132 (2011). **Typus:** Brazil, Minas Gerais, Mun. Santana de Pirapama, Dis. de Coberto, N of Inhame, Bambuí limestone outcrop in dry forest at the western foot of the Serra do Cipó, 777 m, 19 Jul. 2009, D.C. Zappi *et* N.P. Taylor 2208 [SPF, *holo.*; RB, *iso.*]. *Synonymus:* *Xiquexique frewenii* (Zappi *et* N.P.Taylor) Lavor *et* Calvente, in *PlantNow* 1(2): 64 (2020). **Distributio:** SE Brazil. **Notae:** a dwarf ecological subspecies from *Mata Atlântica semi-decidua* biome (vs. *Caatinga*) principally distinguished for its peculiar flower, smaller (3.8-4.0 cm vs. 4-9 cm long), with a slender magenta tube (vs. greenish-brown to pinkish), to 3 cm long (vs. 3.2-6.0 cm long), (*cf.* Zappi, 1994: 39-47; Taylor & Zappi, 2004: 307-311; Zappi & Taylor, 2011: 132-135). The discussed reproductive differences with the subspecies type (*cf.* Zappi & Taylor, 2011: 132-135) are here considered only as an adaptation to the new habitat and to its pollinators. Finally, the recognition as infra-specific taxon of *Xiquexique frewenii* is also supported by a phylogenetic dendrogram (*cf.* Romeiro-Brito *et al.*, 2023: 8) where in *Micranthocereus cladus*, *Xiquexique gounellei* and *X. frewenii* aren't distinguishable at specific level as occur for *Xiquexique tuberculatus* (Werdermann) Lavor *et* Calvente.

## Bibliographia

- Anderson, E. F. 2001. *The Cactus Family*. Timber Press: Portland, Oregon (U.S.A).
- Barthlott, W., and D. Hunt. 2000. Seed-diversity in the *Cactaceae* subfam. *Cactoideae*. *Succ. Pl. Res.* 5. dh Books: Milborne Port (England).
- Braun, P.J. 2017. *Pierrebraunia eddie-estevesii* – ein bemerkenswerter Neufund aus Minas Gerais, Brasilien. *Kakt. and. Sukk.* 68(12): 317-321.
- Braun, P.J., and E.Esteves-Pereira. 1995. Nieuwe combinaties en namen voor cactussen uit Brazilië, Bolivia en Paraguay. *Succulenta*. 74(2): 81-85.
- \_\_\_\_\_. 2009. *Estevesia alex-bragai* (*Cactaceae*) - eine neue monotypische Gattung aus Goiás, Zentral-Brasilien. *Kakt. and. Sukk.* 60(3): 63-70.
- Braun, P.J., and B. Conçalves Brito. 2019. *Melocactus heimenii* (*Cactaceae*) – ein interessanter Neufund aus Nordbahia, Brasilien. *Kakt. and. Sukk.* 70(10): 307-313.

- Doweld, A.B. 2000. Phylogenetic relationships within *Notocactus-Parodia* puzzle. *Sukkulenty*. 3(1-2): 44-64.
- Eggli, U., M. Machado, and R. Nyffeler. 2008. Nomenclatural note on the subgenera of *Parodia* (*Cactaceae-Cactoideae*). *Taxon*. 57(3): 985-988.
- Esteves-Pereira, E. 1999. *Pierrebraunia brauniorum* Esteves *spec. nov.*, eine neue Kakteenart aus Minas Gerais, Brasilien. *Kakt. and. Sukk.* 50(12): 311-314.
- Fantinati, M.R., P. Soffiatti, and A. Calvente. 2021. A New Phylogenetic Hypothesis for *Cereinae* (*Cactaceae*) Points to a Monophyletic Subtribe. *Syst. Bot.* 46(3): 689-699.
- Gonzaga, D.R., D. Liebsch, and M.E. Engels. 2023. *Arrojadoa flava* (*Cactaceae, Cactoideae*), a new yellow flowered species from the Brazilian flora. *Phytotaxa*. 597(1): 73-79.
- Guiggi, A. 2012a. New genera and combinations in the family of *Cactaceae* Jussieu (*Magnoliopsida-Cactales*). *Cactology*. 3: 1-19.
- \_\_\_\_\_. 2012b. *Cactology III addenda et corrigenda*. *Cactology*. 3(Suppl. III): 1-2.
- Hofacker, A., and P.J.Braun. 1998. Nomenclatural adjustments in *Parodia*. *Cact. Cons. Init.* 6: 10-11.
- Hunt, D., N. Taylor, and G. Charles (eds.). 2006. *New Cactus Lexicon*. dh Books: Milborne Port (England).
- Leuenberger, B.E. 1997. 18. *Cactaceae*. In: *Flora of the Guianas: Phanerogams*. A.R.A. Görts-van Rijn (ed.). Royal Botanic Gardens, Kew.
- Nyffeler, R., and U. Eggli. 2010. A farewell to dated ideas and concepts: molecular phylogenetics and a revised suprageneric classification of the family *Cactaceae*. *Schumannia*. 6: 109-149.
- Ritter, F. 1979. *Kakteen in Südamerika 1: Brasilien/Uruguay/Paraguay*. Selbstverlag, Spangenberg.
- Romeiro-Brito, M., M.C. Telhe, D.T. Amaral, F.F. Franco, and E.M. Moraes. 2022. A target capture probe set useful for deep- and shallow-level phylogenetic Studies in *Cactaceae*. *Genes*. 13(4), 707: Suppl. Data.
- Romeiro-Brito, M., N.P Taylor, D.C. Zappi, M.C. Telhe, F.F. Franco, and E.M. Moraes. 2023. Unravelling phylogenetic relationships of the tribe *Cereeae* using target enrichment sequencing. *Annals of Botany*. 20: 1-17.
- Taylor, N.P., and D.C. Zappi. 2004. *Cacti of Eastern Brazil*. Royal Botanic Gardens, Kew.
- \_\_\_\_\_. 2019. Notes on plants called *Cereus hexagonus* (*Cactaceae*). *Bradleya*. 37: 17-25.
- Taylor, N.P., D.C. Zappi, G. Olsthoorn, M. Lowry, and F. de Oliveira Pereira. 2023. Additions and corrections to *Cacti of Eastern Brazil* (3). *Bradleya*. 41: 117-138.
- Taylor, N.P., D. Zappi, M. Romeiro-Brito, M.C. Telhe, F. F. Franco, and E.M. Moraes. 2023. A phylogeny of *Cereus* (*Cactaceae*) and the placement and description of two new species. *Taxon*. 72(6): 1321-1333.
- Theunissen, J., and A.J. Brederoo. 1977. *Eriocereus spinosissimus* Buining *et* Brederoo *spec. nov.* *Kakt. and. Sukk.* 28: 49.
- Turland, N.J. *et al.* 2018. International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code). *Regnum Vegetabile* 159. Koeltz Botanical Books.
- Zappi, D.C. 1994. *Pilosocereus* (*Cactaceae*). *The genus in Brazil*. Succulent Plant Research, Vol. 3. dh Books: Milborne Port (England).
- Zappi, D.C., and N.P. Taylor. 2011. A new species of *Pilosocereus* subgenus *Gounellea*, *P. frewenii*, from SE Brazil. *Bradleya*. 29: 131-136.

# A REVISED SYSTEMATIC OF *HARRISIA* BRITTON *ET* ROSE *SENSU LATO*: A NEW SEGREGATED GENUS AND COMBINATIONS

***Brasiliharrisia*** Guiggi *gen. nov.* **Diagnosis:** *differt from the close relative genus Harrisia Britton et Rose sensu stricto for its normally glaucous stem (vs. green); ribs strongly tuberculate in age (normally linear or slightly tuberculate in age); flower with longer stigma lobes (1.2-2.0 vs. 0.3-1.0 cm long); fruit reddish (vs. yellow or orange-red), dehiscent (vs. indehiscent), and for its distinct biogeography from the Caatinga of NE Brazil (vs. Caribbean region).* **Typus generis:** *Cereus adscendens* Gürke [= *Brasiliharrisia adscendens* (Gürke) Guiggi]. **Synonymous:** *Harrisia* sect. *Adscendentes* A.R.Franck, in *Syst. Bot.* 38(1): 218 (2013). **Etymology:** a compound name from Latin *Brasili* “Brazilian”, referred to the distinct geographic origin of the new taxon and *Harrisia*, for the close relationships with this genus. **Notae:** *Cereus adscendens* is here considered ancestral than the Caribbean genus *Harrisia* Britton *sensu stricto*. Its above discussed distinctive morphology and biogeography (*cf.* Taylor & Zappi, 2004: 426; Hunt *et al.*, 2006: 137; Franck, 2016b: 15, 24-25), and moreover, the phylogenetic data (Franck, 2012a: 56-59; Franck *et al.*, 2013a: 213-216), support this taxon as a different lineage as well as *Eriocereus* (A. Berger) Riccobono (*Harrisia* sect. *Eriocereus* in Franck *et al.*, 2013a: 218) and *Roseocereus* Backeberg (*Harrisia* sect. *Roseocereus* A.R.Franck in Franck *et al.*, 2013a: 218), recognizing here as a new genus. The relative new combination follow below, with a nomenclatural revision in *Eriocereus* and in *Harrisia sensu stricto*.

***Brasiliharrisia adscendens*** (Gürke) Guiggi **comb. nov.** **Basionymus:** *Cereus adscendens* Gürke, in *Monatsschr. Kakteenk.* 18: 66 (1908), *nom. cons. prop.* (Frank, 2015: 848). **Typus** (*designatus* by Taylor & Zappi, 2004: 426): Brazil, Bahia, Oct. 1906, *E.H.G. Ule* 7072 [B, *holo.*; HBG, *iso.*; K, *iso.*, *ico*]. **Synonymi:** *Harrisia adscendens* (Gürke) Britton *et* Rose, *The Cact.* 2: 155, fig. 226 (1920); *Eriocereus adscendens* A.Berger, *Kakt.* 341 (1929). **Distributio:** NE Brazil.

***Eriocereus*** (A.Berger) Riccobono, in *Bolletino del R. Orto Botanico di Palermo* 8 (1909).

***Eriocereus martinii*** Riccobono **subsp. regelii** (Weingart) Guiggi **stat. nov.** **Basionymus:** *Cereus regelii* Weingart, in *Monatsschr. Kakteenk.* 20: 33 (1910). **Typus:** *non servatus.* **Neotypus** (*designatus* by Leuenberger 1996: 35): *cult. hort.* Berlin-Dahlem, 10 Aug. 1994. *F.Schwerdtfeger* 12552a [B, *neo.*, *corp*, *fl*; SI, *isoneo.*]. **Synonymi:** *Eriocereus regelii* (Weingart) Backeberg, in Backeberg *et* F.M. Knuth, *Kaktus-ABC* 178 (1936). *Eriocereus martinii* var. *regelii* (Weingart) W.T.Marshall, *Cactaceae* 98 (1941); *Harrisia pomanensis* subsp. *regelii* (Weingart) R.Kiesling, in *Darwiniana* 34: 395 (1996). **Distributio:** E-Cent. Argentina. **Notae:** infra-specific taxon characterized for its ribs not separated by a longitudinal furrow (*vs.* separated by a longitudinal furrow), flower with reddish scaly hairs (*vs.* white) and without spines (*vs.* normally with spines), fruit spineless (*vs.* frequently with spines), distributed only in Argentina (*vs.* Argentina, Paraguay), (*cf.* Kiesling, 1996: 395-396; Franck, 2016b: 14-15, 20-22, 78-86, 92-94).

***Eriocereus tortuosus*** (J.Forbes) Riccobono **subsp. pomanensis** (F.A.C.Weber *ex* K.Schumann) **comb. et stat. nov.** **Basionymus:** *Cereus pomanensis* F.A.C.Weber *ex* K.Schumann, *Gesamtbeschr. Kakt.* 136 (1897). **Typus:** *non servatus.* **Neotypus** (*designatus* by Kiesling, 1996: 394): Argentina, Prov. Santiago del Estero, Dept. Ojo de Agua, Quebrada “Poza Grande”, 18 Dec. 1981, *E.A. Ulibarri* 1366 [SI, *neo.*; SI, *isoneo.*]. **Synonymi:**

*Harrisia pomanensis* (F.A.C.Weber ex K.Schumann) Britton et Rose, The Cact. 2: 155 (1920). *Eriocereus pomanensis* (F.A.C.Weber ex K.Schumann) A.Berger, Kakt. 341 (1929); *Eriocereus polyacanthus* F.Ritter, Kakt. in Südamerika 2: 436 (1980); *Eriocereus tarijensis* F.Ritter, Kakt. in Südamerika 2: 557 (1980). **Distributio:** SE Bolivia, W Paraguay, NW Argentina. **Notae:** an ecological subspecies of *H. pomanensis* widespread in a drier habitat, at higher altitudinal range of the species (200-1200 vs. 80-300 m), distinguished for its ribs 4-6 (vs. 6-8), pericarpel areoles spineless (vs. frequently with spines), fruit spineless (vs. normally spiny), distributed in Argentina, Bolivia, Paraguay (vs. Argentina, Paraguay, Uruguay), (cfr. Kiesling, 1996: 394-395; Franck, 2016b: 15, 21-24, 87-91, 95-98). A phylogenetic analysis confirms the close relationships between these two taxon (cfr. Franck, 2012a: 56; Franck et al., 2013a: 213).

*Harrisia* Britton, in Bull. Torrey Bot. Club 35: 561 (1909).

*Harrisia brookii* Britton **subsp. caymanensis** (A.R. Franck) Guiggi **comb. et stat. nov.** **Basionymus:** *Harrisia caymanensis* A.R. Franck, in Haseltonia 18: 98-99 (2012). **Typus:** Cayman Islands. Cayman Brac, 30 m, 10 Jun. 2012, A.R. Franck 3035 [USF, *holo.*; MO, *iso.*, *spec. vis.*, *corp.*, *ar.*, *sp.*, *fl.*]. **Distributio:** Cayman Islands, Honduras (Swan Islands). **Notae:** a recognised geographical subspecies from Cayman Islands and Swan Islands (vs. Bahamas), principally distinguished by its longer spines (to 25 x 0.5 vs. to 15 x 0.3 mm), shorter flower (to 15 cm vs. to 20 cm long), (cfr. Franck, 2012b: 96, 98-99, 2016b: 16, 28-29, 108-114). Two phylogenetic dendrograms support this taxonomic position (cfr. Franck et al., 2013b: 490, 494).

*Harrisia divaricata* (Lamarck) Backeberg **subsp. portoricensis** (Britton) Guiggi **comb. et stat. nov.** **Basionymus:** *Harrisia portoricensis* Britton, in Bull. Torrey Bot. Club 35: 563 (1908). **Neotypus** (*designatus* by Frank et al., 2012b: 101): Puerto Rico, mainland, near Ponce, 1906, N.L. Britton et J.F. Cowell 1324 [NY, *neo.*]. **Epitypus** (*designatus* by Frank et al., 2012b: 101): Puerto Rico, Mona Island, 6 Mar. 1994, A.E. Areces-Mallea s.n. [NY, *epi.*]. **Distributio:** Puerto Rico. **Notae:** an identified geographical subspecies of *H. divaricata* restricted to Puerto Rico (vs. Hispaniola), with a stem densely spiny (vs. few spiny), spines longer (to 7.5 vs. to 5.5 cm) (cfr. Franck, 2012b: 96, 2016b: 16, 29-31, 36-37, 115-119, 153-155). The close relationships between these two taxon are confirmed by a phylogenetic analysis (cfr. Franck et al., 2013b: 490, 494).

*Harrisia eriophora* (Pfeiffer) Britton **subsp. fernowii** (Britton) Guiggi **comb. et stat. nov.** **Basionymus:** *Harrisia fernowii* Britton, in Bull. Torrey Bot. Club 35: 562 (1908). **Lectotypus:** (*designatus* by Frank, 2014: 1): Cuba, Prov. Santiago de Cuba: Oriente, Rio Grande and Rio Ubero, 1906, N. Taylor 254 [NY, *lecto.*, *fl.*] **Synonymus:** *Harrisia taylorii* Britton, in Bull. Torrey Bot. Club 35: 565 (1908). **Distributio:** E Cuba. **Notae:** a recognised geographical subspecies from Eastern Cuba "Oriente" (vs. Central-Western Cuba) distinguished for its longer spines (to 7.5 vs. to 6.5 cm long), flower-tube with larger scales (to 4.8 x to 18 vs. to 3.2 x 10 mm), smaller seeds (to 1.65 x to 2.6 vs. to 2.1 x to 3.35 mm), (cfr. Franck, 2012b: 96, 2016b: 16, 31-33, 120-134). The phylogenetic data support the inclusion of *H. fernowii* in the Cuban complex of *H. eriophora* and *H. taetra* (cfr. Franck et al., 2013b: 490).

*Harrisia eriophora* (Pfeiffer) Britton **subsp. taetra** (Areces) Guiggi **comb. et stat. nov.** **Basionymus:** *Harrisia taetra* Areces, in Revista Jard. Bot. Nac. Univ. Habana 1: 17 (1980). **Typus:** Cuba, Prov. Pinar del Río, Penin. de Guanahacabibes, Terraza costera la Iguana, en la carretera al cabo de San Antonio, 27 Mar. 1973, A.E. Areces-Mallea 37991 [HAJB., *holo.*, cfr. Franck 2012b: 102] **Distributio:** W Cuba. **Notae:** infra-specific taxon characterized for its trunk normally absent (vs. well-enveloped, erect), stem densely spiny (vs. few spiny), spines longer (to 12 vs. to 6.5 cm long), flower scales purplish to reddish (vs. green), (cfr. Franck, 2012b: 96, 2016b: 16, 31-32, 38,



120-128, 156-158). A phylogeny based on molecular and morphological data corroborate this nomenclatural change (cfr. Franck *et al.*, 2013b: 494).

## Bibliographia

- Britton, N.L. 1908. Studies of West Indian plants – II. *Bull. Torrey Bot. Club.* 35: 561-569.
- Britton, N. L., and J. N. Rose. 1920. *The Cactaceae*. Vol. 2. Carnegie Institute: Washington.
- Franck, A.R. 2012a. Systematics of *Harrisia* (Cactaceae). Ph.D. diss., Univ. of South Florida, Tampa.
- \_\_\_\_\_. 2012b. Synopsis of *Harrisia* including a newly described species, several typifications, new synonyms, and a key to species. *Haseltonia*. 18: 95-104.
- \_\_\_\_\_. 2014. Typification of *Harrisia fernowii* (Cactaceae). *Phytoneuron*. 2014-9: 1.
- \_\_\_\_\_. 2015. (2368) Proposal to conserve the name *Cereus adscendens* (*Harrisia adscendens*) against *C. platygonus* (Cactaceae). *Taxon*. 64(4): 848-849.
- \_\_\_\_\_. 2016a. (2475–2477) Proposals to conserve the name *Cereus eriophorus* (*Harrisia eriophora*) with a conserved type, and reject the names *C. cubensis* and *C. subrepandus* (Cactaceae). *Taxon*. 65: 1177-1178.
- \_\_\_\_\_. 2016b. Monograph of *Harrisia* (Cactaceae). *Phytoneuron*. 2016-85: Part 1: 1-52; Part 2: 53-68; Part 3: 69-101; Part 4: 102-134; Part 5: 135-159.
- Franck, A.R., B.J. Cochrane, and J.R. Garey. 2013a. Phylogeny, biogeography, and infrageneric classification of *Harrisia* (Cactaceae). *Syst. Bot.* 38: 210-223.
- Franck, A.R., B.J. Cochrane, and J.R. Garey. 2013b. Relationships and dispersal of Caribbean *Harrisia* inferred from AFLPs and seven gene regions. *Taxon*. 62: 486-497.
- Kiesling, R. 1996. El genero *Harrisia* (Cactaceae) en la Argentina. *Darwiniana*. 34: 389-398.
- Leuenberger, B.E. 1996. *Harrisia regelii* (Weingart) Borg, eine wenig bekannte Art aus Argentinien. *Kakt. and. Sukk.* 47(2): 33-40.
- Ritter, F. 1980. *Kakteen in Südamerika 2: Argentinien/Bolivien*. Selbstverlag, Spangenberg.
- Taylor, N.P., and D.C. Zappi. 2004. *Cacti of Eastern Brazil*. Royal Botanic Gardens, Kew.

# **CRYPTOCARPOCACTUS: A NEW GENERIC STATUS FOR MAMMILLARIA LUETHYI G.S. HINTON FROM N COAHUILA (MEXICO)**

***Cryptocarpocactus* Guiggi gen. nov. Diagnosis:** differs from the phylogenetic closer genus *Neolloydia* Britton et Rose *sensu stricto* for its subglobose (vs. short-cylindric) habit; root tapering (fasciculated); stem dark green (from graysh-green to yellowish-green), <1 cm tall, buried in the substrate (vs. to 24 cm, growing above the substrate); tubercles to 5.5 mm long, terete (vs. to 10 mm, conical); axils bristly (vs. woolly at the top); spines minute (to 0.6 vs. 6-25 mm), to 80 in number (vs. to 26), forming a dense, flattened cluster, 1.4-1.8 mm in diameter (vs. not forming a compact cluster, organised in centrals and radials spines); flower smaller (to 3 x to 3 vs. to 3.2 x to 5.5 cm), magenta with a white throat (entirely magenta); fruit smaller (to 4.5 x to 4.5 vs. to 10 x to 8 mm), sunken in the stem (vs. outside the stem); seed smaller (1 x 1 vs. 1.4-1.6 mm) with the testa finely pitted (vs. strongly convex). **Typus generis:** *Mammillaria luethyi* G.S.Hinton [= *Cryptocarpocactus luethyi* (G.S.Hinton) Guiggi]. **Etymology:** a compound name from Greek *crypto* “hidden” and *carpo* from Latinized form of Greek *karpos* “fruit”, referred to the hidden fruit in the stem, with the addition of the Latin *cactus*. **Notae:** the phylogenetic analyses (Butterworth & Wallace, 2004: 1091-1092; Bárcenas *et al.* 2011: 10; Cervantes *et al.*, 2021: 30, 32) recognised *C. luethyi* as belonging to a different lineage than to *Mammillaria* Haworth *sensu stricto*, with closer relationships to other Mammilloid genera with comparable large flowers like the sympatric *Neolloydia conoidea* Britton et Rose (Hoxey, 2012: 35) and *Fimbriatocactus* Guiggi (2023: 4). The distinctive characters of *Cryptocarpocactus luethyi* as the thin and long cylindrical tubercles, growing upwards, deciduous at the base of the stem, the spines with apical hairs forming an umbrella, the fruits drying and disintegrating inside the stem (*cfr.* Hinton, 1996: 58; Glass, 1998: Ma/lue, unpagued; Pilbeam, 1999: 172-173; Anderson, 2001: 428; Hunt *et al.*, 2006: 164), associated to the phylogenetic results support the segregation of a new cryptocarpic genus than to *Mammillaria sensu stricto*. The relative new combinations follow below.

***Cryptocarpocactus luethyi* (G.S.Hinton) Guiggi comb. nov. Basionymus:** *Mammillaria luethyi* G.S.Hinton, in *Phytologia* 80: 58 (1996). **Typus:** Mexico, N Coahuila, W of Acuña, limestone slabs in Chihuahuan Desert, 1315 m, 19 May 1996, G.B. Hinton *et al.* 25771 [GBH, *holo. spec. vis., corp, rad*]. **Additional material examined:** Mexico, N Coahuila, Acuña, E of José María Morelos, 1225 m, 11 Apr. 2006, G.B.Hinton *et al.* 28425 [GBH, *corp, rad*]. **Distributio:** NE Mexico.

## **Bibliographia**

- Anderson, E. F. 2001. *The Cactus Family*. Timber Press: Portland, Oregon (U.S.A).
- Bárcenas R.T., C. Yesson, and J.A. Hawkins. 2011. Molecular systematics of the *Cactaceae*. *Cladistics*. 27: 1-20.
- Butterworth, C.A., and R.S. Wallace. 2004. Phylogenetic studies of *Mammillaria* (*Cactaceae*) — insights from chloroplast sequence variation and hypothesis testing using the parametric bootstrap. *Am. J. Bot.* 91(7): 1086-1098.
- Cervantes, C.R., S. Hinojosa-Alvarez, A. Wegier, U. Rosas, and S. Arias. 2021. Evaluating the monophyly of *Mammillaria* series *Supertextae* (*Cactaceae*). *PhytoKeys*. 177: 25-42.
- Glass, C.E. 1998. *Guía para la identificación de cactáceas amenazadas de México-Guide to the identification of threatened cacti of Mexico*. Vol. 1. A.C. Cante, Mexico.

- Guiggi, A. 2023. A new mammilloid genus from SW United States and N Mexico. *Cactology*. 5(Suppl. 14): 4-5.
- Hinton, G.S. 1996. *Mammillaria luethyi* (Cactaceae), A new species from Coahuila, Mexico. *Phytologia*. 80: 58-61.
- Hoxey, P. 2012. *Mammillaria luethyi*. In search of a botanical jewel from Mexico. *The Cactus Explorer*. 3: 30-36.
- Hunt, D., N. Taylor, and G. Charles (eds.). 2006. *New Cactus Lexicon*. dh Books: Milborne Port (England).
- Pilbeam, J. 1999. *Mammillaria*. The Cactus File 6. Cirio Publ. Serv. (UK).
- Zimmerman, A.D, and B.D. Parfitt. 2003. *Neolloydia*. In: Flora of North America Editorial Committee (eds.). Flora of North America North of Mexico. Oxford University Press: New York and Oxford. 4: 237-238.

## NEW COMBINATIONS IN THE TRIBE *HYLOCEREEAE* (*CACTACEAE*)

*Cryptocereus* Alexander, in Cact. Succ. J. (U.S.) 22: 164 (1950). *Synonymus*: *Selenicereus* sect. *Cryptocereus* (Alexander) D.R.Hunt, in Bradleya 7: 92 (1989). **Notae**: a phylogenetic analysis of the *Hylocereeae* (Korotkova *et al.* 2017: 8) supported the recognition of *Cryptocereus* Alexander as a separated genus “*cladus*” from *Selenicereus* (A. Berger) Britton *et* Rose, with two close relative species [*i.e.* *Cryptocereus anthonyanus* Alexander and the below combined *C. hamatus* (Scheidweiler) Guiggi], characterized both by dentated stem with similar flowers and fruits (*cf.* Britton & Rose, 1920: 203-204; Bauer, 2003: 50; Hunt *et al.* 2006: 262-263), confirming the informal *Selenicereus-Cryptocereus* group *sensu* Bauer (2003: 50).

*Cryptocereus hamatus* (Scheidweiler) Guiggi **comb. nov.** *Basionymus*: *Cereus hamatus* Scheidweiler, in Allg. Gartenzeitung 5: 371 (1837). **Typus**: not determined. **Neotypus** (*designatus* by Bauer, 2003: 50): Mexico, Veracruz, S of Palma Sola, 3 km from the coast, Stolzenburg s.n. [ZSS, *neo.*]. **Distributio**: S Mexico.

*Eccremocactus* Britton *et* Rose, in Contr. U.S. Natl. Herb. 16: 261 (1913). **Notae**: the phylogenetic analysis that focuses on the tribe *Hylocereeae* (Korotkova *et al.* 2017: 8), although with low support identifies three morphologically similar species [*Eccremocactus imitans* (Kimmach *et* Hutchison) Kimmach, *E. rosei* Kimmach, and the below combined *E. frohningiorum* (Ralf Bauer) Guiggi] in a distinct *cladus* than *Weberocereus* Britton *et* Rose *sensu stricto* (*cf.* Britton & Rose, 1920: 214), characterised by a winged stem, with 2-3-ribs, and white fruit pulp (*cf.* Bauer, 2003: 11; Korotkova *et al.* 2017: 11), which correspond to the genus *Eccremocactus* Britton & Rose (*cf.* Britton & Rose, 1923: 204) and to the informal *Weberocereus-Eccremocactus* group *sensu* Bauer (2003: 52-53).

*Eccremocactus frohningiorum* (Ralf Bauer) Guiggi **comb. nov.** *Basionymus*: *Weberocereus frohningiorum* Ralf Bauer, in Kakt. and. Sukk. 52(9): 228 (2001). **Typus**: Costa Rica, *sine locus et data*, *H.Frohning* 9067 [ZSS, *holo.*; K, *iso. spec. vis.*]. **Distributio**: Costa Rica.

### Bibliographia

- Bauer, R. 2003. A synopsis of the tribe *Hylocereeae* F. Buxb. *Cact. Syst. Init.* 17: 3-63.  
Britton, N. L., and J. N. Rose. 1920. *The Cactaceae*. Vol. 2. Carnegie Institute: Washington.  
\_\_\_\_\_. 1923. *The Cactaceae*. Vol. 4. Carnegie Institute: Washington.  
Hunt, D., N. Taylor, and G. Charles (eds.). 2006. *New Cactus Lexicon*. David Hunt Books: Milborne Port (England).  
Korotkova N., T. Borsch, and S. Arias. 2017. A phylogenetic framework for the *Hylocereeae* (*Cactaceae*) and implications for the circumscription of the genera. *Phytotaxa*. 327(1): 1-46.

## ADDITIONAL COMBINATION IN *SPHAEROPUNTIA* GUIGGI (*OPUNTIOIDEAE*)

*Sphaeropuntia sphaerica* (C.F.Först.) Guiggi f. *mollispina* (Hoxey, A.Pauca, Quipuscoa et Gdaniec) Guiggi *comb. et stat. nov.* *Basionymus:* *Cumulopuntia mollispina* Hoxey, A.Pauca, Quipuscoa et Gdaniec, in *Bradleya* 41: 140 (2023). **Typus:** Peru, Dep. Ayacucho. Upstream from San Martin de Porres de Huillcallama, Río Lampalla, 1700 m, 30 Mar. 2022, P.Hoxey, G.A.Pauca et V.Quipuscoa 50 [HSP, *holo.*]. **Distributio:** S Peru. **Notae:** a form referable to *S. sphaerica* subsp. *leucophaea* (Philippi) Guiggi (*cfr.* Guiggi, 2012: 1; Pauca & Quipuscoa, 2020: 352-354; Hoxey *et al.*, 2023: 148) characterized essentially for its flexible spines (*cfr.* Hoxey *et al.*, 2023: 142-143).

### Bibliographia

- Guiggi, A. 2012. *Genera Nova et Combinationes Novae in Cactaceis Austroamericanis ad Subfamiliam Opuntioideae K. Schumann Spectantibus II.* *Cactology*. 3(Suppl. 2): 1-2.
- \_\_\_\_\_. 2016. *Combinationes novae in Cactaceis Peruvianis.* *Cactology*. 5(Suppl. 2): 1-2.
- Hoxey P., G.A. Pauca-Tanco, V. Quipuscoa-Silvestre, and A. Gdaniec. 2023. A new species of *Cumulopuntia* (*Cactaceae*) from Peru. *Bradleya*. 41: 139-147.
- Pauca-Tanco, G.A., and V. Quipuscoa. 2020. El género *Cumulopuntia* (*Cactaceae, Opuntioideae*) en el Departamento de Arequipa, Perú. *Darwiniana*. Nueva serie 8(1): 337-371.

Edited & published by Alessandro Guiggi  
DISTAV, Polo Botanico, Università degli Studi di Genova  
International Cactaceae Research Center (ICRC)  
alex.guiggi@libero.it

The texts have been written by Alessandro Guiggi

All right reserved

No parts of this issue may be reproduced in any form, without permission from the Publisher  
© Copyright ICRC

ISSN 1971-3010 (paper edition)  
ISSN 2421-5457 (online edition)

Printed or digital copies have been deposited at the libraries of Hanbury Gardens, Huntington  
Botanical Gardens, Kew Gardens, New York Botanical Garden, Jardin Exotique de Monaco and  
Sukkulenten Sammlung Zürich

### **Nomenclatural novelties proposed in this *supplementum***

- Acanthocephala alacriportana* (Backeberg *et* Voll) Guiggi *comb. nov.*  
*Acanthocephala alacriportana* subsp. *brevihamata* (W.Haage) Guiggi *comb. nov.*  
*Acanthocephala alacriportana* subsp. *buenekeri* (Buining) Guiggi *comb. nov.*  
*Acanthocephala alacriportana* subsp. *catarinensis* (F.Ritter) Guiggi *comb. nov.*  
*Acanthocephala rechenensis* (Buining) Guiggi *comb. nov.*  
*Brasiliharrisia* Guiggi *gen. nov.*  
*Brasiliharrisia adscendens* (Gürke) Guiggi *comb. nov.*  
*Cereus hexagonus* subsp. *gerardi* (N.P.Taylor) Guiggi *comb. et stat. nov.*  
*Chapadocereus* (P.J.Braun *et* Esteves) Guiggi *gen. et stat. nov.*  
*Chapadocereus spinosissimus* (Buining *et* Brederoo) Guiggi *comb. nov.*  
*Cryptocarpocactus* Guiggi *gen. nov.*  
*Cryptocarpocactus luethyi* (G.S.Hinton) Guiggi *comb. nov.*  
*Cryptocereus hamatus* (Scheidweiler) Guiggi *comb. nov.*  
*Eccremocactus frohningiorum* (Ralf Bauer) Guiggi *comb. nov.*  
*Eriocereus martinii* subsp. *regelii* (Weingart) Guiggi *stat. nov.*  
*Eriocereus tortuosus* subsp. *pomanensis* (F.A.C.Weber *ex* K.Schumann) *comb. et stat. nov.*  
*Harrisia brookii* subsp. *caymanensis* (A.R. Franck) Guiggi *comb. et stat. nov.*  
*Harrisia divaricata* subsp. *portoricensis* (Britton) Guiggi *comb. et stat. nov.*  
*Harrisia eriophora* subsp. *fernowii* (Britton) Guiggi *comb. et stat. nov.*  
*Harrisia eriophora* subsp. *taetra* (Areces) Guiggi *comb. et stat. nov.*  
*Melocactus ernestii* f. *heimenii* (P.J.Braun *et* Conçalves Brito) Guiggi *comb. et stat. nov.*  
*Mirabella alexbragae* (P.J.Braun *et* Esteves) Guiggi *comb. nov.*  
*Pierrebraunia bahiensis* subsp. *flava* (Gonzaga *et* Engels) Guiggi *comb. et stat. nov.*  
*Pilosocereus eddie-estevesii* (P.J.Braun) Guiggi *comb. nov.*  
*Pilosocereus fulvilanatus* subsp. *brauniorum* (Esteves) Guiggi *stat. nov.*  
*Pilosocereus pentaedrophorus* subsp. *glaucochrous* (Werdermann) Guiggi *stat. nov.*  
*Sphaeropuntia sphaerica* f. *mollispina* (Hoxey *et al.*) Guiggi *comb. et stat. nov.*  
*Viridicereus* Guiggi *gen. nov.*  
*Viridicereus violaciflorus* (Buining) Guiggi *comb. nov.*  
*Xiquexique gounellei* subsp. *frewenii* (Zappi *et* N.P.Taylor) Guiggi *stat. nov.*