

New Combinations, Changes and Clarifications in Cactaceae 2024

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As part of my forthcoming project "Taxonomy of Cactaceae, Description of the Species", Volumes 3 & 4*, after studying each taxon and its characteristics, it was necessary to modify the classification for a better approach of genera and taxa which compose them, according to my work. The study of the seed structure gave me another clue for completing my project, together with morphology and DNA works. Some changes are also proposed.

Following the recommendation by the IOS Working Party (1994) the session during which it was agreed that there should be one formal category only to use the rank of subspecies instead of that of variety (D. Hunt, New Cactus Lexicon: 4. 2006), some of the following taxa were combined as such:

Bolivicactus chrysacanthion (K.Schum.) Lodé. **COMB. NOV.**

Basionym: *Echinocactus chrysacanthion* K.Schum., Gesamtbeschr. Kakt. 396 (1898).

Type: Argentina, Jujuy, on road to Bolivia, Oct 1892, *Kuntze* (B†). Lectotype: Argentina, Jujuy, Ritter 45 loc. 1 (SGO 125383).

Comments: the synonymised *Bolivicactus saintpieanus* is only close in appearance to *Parodia chrysacanthion*, but is not a part of the same genus (Doweld 2003); in fact seeds are totally distinct from each other. Investigating about these taxa, I found that seeds of *Bolivicactus saintpieanus* are matching those of *Parodia* s.s., while those of *Parodia chrysacanthion* are exactly like those of *Bolivicactus*. Thus, these two taxa must be switched in their new respective genera.

Bolivicactus doranae (Diers & Jucker) Lodé **COMB. NOV.**

Basionym: *Parodia dorana* Succulenta (Netherlands) 95(3): 117 (2016).

Type: Bolivia, Dept. Chuquisaca, Prov. Nor Cinti, Nov 2006, *H.Jucker* HJ 1209 (holo.: LPB; iso.: WU).

Not previously listed in Tax. of Cact. vol. 1 (2015) as described (as *Parodia*) in 2016.

Bolivicactus juckeri (Diers) Lodé **COMB. NOV.**

Basionym: *Parodia juckeri* Diers, Succulenta (Netherlands) 93(3): 108 (2014).

Type: Bolivia, Dept. Chuquisaca, Prov. Azurduy, gorge of the Río Huancarani, Nov. 1994, *H.Jucker* HJ 442 (WU).

Comments: first described as *Parodia juckeri*, *Bolivicactus juckeri* seems to be close to *Bolivicactus procerus*, although morphologically distinct in terms of size, number of ribs and spines, as well as flowers.

Not previously listed in Tax. of Cact. vol. 1 (2015) and apparently forgotten in Korotkova *et al.* (2021).

* see progress at the webpage cactus-adventures.com

Bolivicactus larapuntensis (Diers & Jucker) Lodé **COMB. NOV.**

Basionym: *Parodia larapuntensis* Diers & Jucker, Succulenta (Netherlands) 94(3): 116, illustr. (2015).

Type: Bolivia, Dept. Chuquisaca, Prov. Nor Cinti, Dec 2004, Cerro Lara Punta, in the region where the Río Chakha Mayu flows into the Río Pilcomayo, *H. Jucker* HJ 1130 (Holo.: LPB; iso.: WU).

Comments: the taxon is compared by the first authors with *Bolivicactus juckeri* (as *Parodia*). Curiously, this one was apparently forgotten in the compilation of Korotkova *et al.* (2021), while *Bolivicactus larapuntensis* (as *Parodia*) is retained as a “good” species.

Not previously listed in Tax. of Cact. vol. 1 (2015), this species was published in 2015.

Bolivicereus aureispinus (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Winteria aureispina* F.Ritter, Kakteen And. Sukk. 13. 4 1962.

Type: Bolivia, Santa Cruz, Florida, Yapacani gorge (road from Mataral to Mairana, Agua Clara, on overhanging rocks, Jul. 1958, *Ritter* 846 (U097816B, SGO, ZSS).

Synonyms: *Borzicactus aureispinus*, *Cleistocactus winteri*, *Hildewintera aureispina*, *Loxanthocereus aureispinus*, *Winteria aureispina*.

Comments: according to Kiesling & Metzing (2004), and although proposed as a subspecies of *Cleistocactus winteri* (= *Bolivicereus aureispinus*) by Hunt (2005), *C. winteri* subsp. *colademononis* (= *Hildewintera colademononis*) is rather a different taxon and should be re-evaluated as it seems to be just a convergence of form. They are of the opinion that the genus *Hildewintera* with the two species *H. aureispina* (= *Cleistocactus winteri*) and *H. colademononis* should be independently recognised. In fact, seeds are more similar to those of *Bolivicereus samaipatanus* and in my opinion, should be included in this genus, which was done in 2023.

In the thesis of Lendel (2013), the phylogenetic trees obtained clearly show a clade including *Cleistocactus winteri* (= *Bolivicereus aureispinus*) and *Cleistocactus samaipatanus* (= *Bolivicereus samaipatanus*), thus, giving more strength to my classification; moreover, these taxa are far from the genus *Cleistocactus* sensu stricto, thus, cannot be included in it.



Bolivicereus aureispinus © JL

Corynopuntia wrightiana (Baxter) Lodé **COMB. NOV.**

Basionym: *Grusonia wrightiana* Baxter, Calif. Cact. 58, illustr. (1935).

Type: USA, Arizona, Petrified forest near the Colorado River, four miles west of the Quartzite-Yuma road, 33 miles north of Yuma, 15 Apr 1934, *Allan B. Clayton* s.n. (Dudley Herbarium of Stanford University).

Comments: long mistakenly identified as *Corynopuntia kunzei*, *C. wrightiana* is diploid ($2n = 22$).

DIAGUITA (P.C.Guerrero & Helmut Walter) Lodé **STAT. NOV. & GEN. NOV.**

(Cactoideae-Notocacteae)

Basionym: *Eriosyce* sect. *Diaguita* P.C.Guerrero & Helmut Walter, Taxon 68(3): 567 (2019).

Type: *Diaguita fankhauseri* (F.Ritter) Lodé [*Thelocephala fankhauseri* F.Ritter, Kakteen Südamerika 3: 1002 (1980)].

Etymology: a name honouring the indigenous people *Diaguita*, who lived in the Norte Chico de Chile, where the genus can be found.

Taxonomy: according to Guerrero (2011), the infrageneric and infraspecific classification of *Eriosyce* s.l. by Katterman (1994) was questioned or even disputed by several authors (Nyffeler & Eggli 1997, 2010; Hunt 2003; Ferryman 2003; Hoffmann & Walter 2004; Hunt et al. 2006; Walter et Mächler 2006; Walter 2008).

The molecular works of Bárcenas et al. (2011) confirmed what we already suspected: the genus *Eriosyce* is not monophyletic and is therefore not satisfactory as it is currently designed.

Concretely, with the phylogenetic work of Guerrero *et al.* (2019), we have 7 clades which are separately, monophyletic and would possibly allow a better classification and comprehensive study and conservation of these genera. As Guerrero pointed out (pers. comm. 2020), “*we have encountered several phenomena of evolutionary convergence*”; this caused confusion and mistakes in the classification, for example *Eriosyce napina* var. *fankhauseri* not related to *E. napina*. On the other hand, “*those genera are full of inconsistencies, of non-compliance with monophyly and unclear delimitations*”.

The genus ***Diaguita*** was created to accommodate the taxa found in the clade of Guerrero *et al.* under the section “*Diaguita*”. It was necessary to modify the names of these taxa and this is presented here.

In the sense of the seven, monophyletic clades of Guerrero *et al.* (2019), ***Diaguita*** is a **correct** genus.

Diaguita fankhauseri (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Thelocephala fankhauseri* F.Ritter, Kakteen Südamerika 3: 1002 (1980).

Type: Chile, Atacama, mountains N.W. of Domeyko, 1969, *Ritter* 1451, but collected by *Fankhauser* (U).

Comments: about the seed, Ritter wrote: “*it was completely different from all Thelocephala seeds, and also so different from seeds of other cacti, that I very much doubt whether the seed can belong to this plant; I therefore make no description*”.

Diaguita riparia (Mächler & Helmut Walter) Lodé **COMB. NOV.**

Basionym: *Eriosyce napina* subsp. *riparia* Mächler & Helmut Walter, CactusWorld 24(3): 142 (-143; illustr. 4-8) (2006).

Type: Chile, Coquimbo, Elquí, east of Trapiche, 3 Nov 2004, *Helmut Walter* 487 (SGO 152410).

Comments: according to the first authors, this taxon was confused and mistaken during quite a time for *D. fankhauseri* or *D. tenebrica*.

Diaguita tenebrica (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Thelocephala tenebrica* F.Ritter, Kakteen Südamerika 3: 1001 (1980).

Type: Chile, Atacama (W. of Domeyko), 1961, *Ritter* 1092 (U).

Comments: as for the two other taxa, this one was long known under *Thelocephala*, and more recently under *Eriosyce*, as a subspecies of *E. napina*.

Eriosyce subsect. ***Islaya*** (Backeb.) Katt., Succ. Pl. Res. 1: 117 (1994) is elevated to the rank of subgenus.

Eriosyce subgenus ***Islaya*** (Backeb.) **STAT. NOV.** Matuszewski & Lodé **SUBGEN. NOV.**

Type: *Islaya* Backeb., Blätt. Kakteenf. 1934(10): [3] genus 63 (1934).

Taxonomy: as proposed by Kattermann (1994), the genus *Eriosyce sensu lato* is not monophyletic (Nyffeler 2002, Machado 2007, Nyffeler & Eggli 2010, Bárcenas *et al.* 2011, Hernández-Hernández *et al.* 2011, Guerrero *et al.* 2011).

However, if *Eriosyce laui* (= ***Rimacactus laui***) is removed from ***Eriosyce***, this becomes monophyletic. The cladogram of Hernández-Hernández *et al.* (2011) shows a clade including ***Eriosyce aurata*** and ***Eriosyce islayensis*** (= *Islaya islayensis*) well separated from the other *Eriosyce* s.l., a result which we find also in the molecular analyses of Bárcenas *et al.* (2011) and finally in the most complete to date (Guerrero *et al.*, 2019): thus, *Islaya* should be included within *Eriosyce sensu stricto*.

Nevertheless, the specialist and explorer Grzegorz Matuszewski (pers. comm. 2021) does not agree with this combination and gives arguments: “*in my opinion, the genus Eriosyce has also been excessively developed. I consider that Islaya placement in the genus Eriosyce is unfounded. This is a much older genus than Eriosyce. Genetic research has only proven that they come from a common ancestor, but they followed a different line of development... Plants have a different appearance, different thorns, different flowers, different fruits and seeds*”. The morphology of *Islaya* is certainly distinct from *Eriosyce* s.s., thus separating *Islaya* from *Eriosyce* makes sense, but it is a matter of choice.

Since, we have reconsidered *Islaya* as a subgenus of *Eriosyce* (Matuszewski & Lodé 2024).

The results of Bárcenas & al. (2011) based on the trnK-matK marker and including four species; Arakaki *et al.* (2011) based on the trnK-matK and PHYC markers and including four species, and Hernández-Hernández *et al.* (2011), based on the trnK-matK, matK, trnL-trnF, rpl16, and ppc markers and including five species, all suggested that *Eriosyce* s.l. is not monophyletic.

According to Guerrero *et al.* (2019), Kattermann's broad concept of *Eriosyce* as well as the reduced number of taxa are disputed (Zuloaga *et al.*, 2007; Duarte *et al.*, 2014; Hernández-Ledesma *et al.* 2015).

Concretely, today we have 7 clades which are separately, monophyletic (Guerrero *et al.* 2019) and would possibly allow a better classification and comprehensive study and conservation of these genera. These changes were done in the same logic as for *Echinopsis sensu lato* by Schlumberger & Renner (2012), and like this:

Horridocactus, ***Neoporteria*** and ***Pyrrhocactus*** are conserved according to the clades proposed by Guerrero *et al.* We created ***Neomapucheia*** to accommodate the section “*Campanulatae*”, and ***Guerreroa*** by Lodé & Matuszewski (2024) for the clade “VII”; the section “*Diaguita*” is accepted as a genus: ***Diaguita***.

We recognise here *Eriosyce sensu stricto* including now an imbricated *Islaya* (Guerrero, pers. comm.2020).

Eriosyce islayensis subsp. *flavida* (Ritter) J.Lodé

Basionym: *Islaya flavida* F.Ritter, Kakteen Südamerika 4: 1298, illustr. (1981).

Type: Perú, Prov. Caravelí, Convento, 1953, *Ritter* 186 (holo.: U; iso.: ZSS).

Facheiroa eddie-estevesii (P.J.Braun) Lodé **COMB. NOV.**

Basionym: *Leocereus estevesii* P.J.Braun, Kakteen Sukk. 41(9): 204 (1990).

Type: Brazil, Piauí, *E. Esteves Pereira* E 207 (UFG 12.380, Isotypes: B, ZSS 58-TP-317).

Synonyms: *Leocereus estevesii*.

Comments: stems and flower are the most relevant characters for this insufficiently described taxon, previously known as *Leocereus estevesii*. Not to be confused with *Facheiroa estevesii* (see next); to avoid this, a new name was necessary, this is why I have chosen *Facheiroa eddieestevesii*.

As I was waiting for the publication of precise DNA data and confirmation, the genus *Leocereus* remained in Taxonomy of the Cactaceae (2015), provisionally correct, and the genus was accepted in Korotkova *et al.* (2021).

Since, the phylogenetic work of Romeiro-Brito *et al.* (2023) showed that the genera *Bragalia*, *Brasilicereus*, *Leocereus* and *Zehntnerella* are included within their clade “Facheiroa”.

Only *Leocereus* is here accepted within *Facheiroa*, although with some doubts, in view of its placement on the clade. In my opinion however, only the genus *Leocereus* pertains to the “Facheiroa” clade, the other ones seem issued from reticular events and are conserved in this work. Thus, I transferred the two taxa retained in *Leocereus* within *Facheiroa*.

GUERREROA Lodé & Matuszewski **GEN.NOV.** (Cactoideae-Notocacteae)

Type: *Chileorebutia aerocarpa* F.Ritter

Eponym: honouring Dr **Pablo César Guerrero Martin** (?-), Chilean botanist, and zoologist, expert in phylogenetics, specialist of Chilean Cacti, currently working at the University of Concepción, Santiago. He is concerned with Evolution, Ecology and Conservation of species.

Taxonomy: according to Guerrero (2011), the infrageneric and infraspecific classification of *Eriosyce* s.l. by Katterman (1994) was questioned or even disputed by several authors (Nyffeler & Eggli 1997, 2010; Hunt 2003; Ferryman 2003; Hoffmann & Walter 2004; Hunt *et al.* 2006; Walter & Mächler 2006; Walter 2008).

The molecular work of Bárcenas *et al.* (2011) confirmed what we already suspected: the genus *Eriosyce* is not monophyletic and is therefore not satisfactory as it is currently designed.

The genus *Guerreroa* was created to accommodate the taxa found in the clade of Guerrero *et al.* under the clade “VII”. It was necessary to modify the names of these taxa and this is presented here. Many of them were once placed within *Chileorebutia* by Ritter, or *Thelocephala* Y.Itô.

Still in the analysis of Guerrero *et al.* (2019, p.10), we can notice that the placement of many infraspecific taxa was mostly erroneous and led to great confusion.

In my opinion, *Guerreroa confinis*, *G. kunzei*, or more specifically *G. sociabilis* could be misplaced, but this needs to be verified.

In the sense of the seven, monophyletic clades of Guerrero *et al.* (2019), *Guerreroa* is a correct genus.

Guerreroa aerocarpa (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Chileorebutia aerocarpa* F.Ritter, Cactus (Paris) 15(66): 8 (1960).

Type: Chili, Atacama, Freirina, 1956, *Ritter* 498 loc. 1 (U 097904B, SGO, ZSS).

Guerreroa atroviridis (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus atroviridis* F.Ritter, Succulenta (Netherlands) 1960: 89 (90, illustr.) (1960).

Type: Chile, Atacama, ca. 30 km N.W. of Vallenar, Ritter 475 loc. 1 (U 098008B, SGO, ZSS).
Lectotype: Ritter, p. 90, the illustration cited.

Guerreroa calderana (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus calderanus* F.Ritter, Succulenta (Netherlands) 1961: 13 (1961).

Type: Chile, Atacama, Caldera, on the coast, Ritter 496 (U 098136B).

Guerreroa caligophila (R.Pinto) Lodé **COMB. NOV.**

Basionym: *Eriosyce caligophila* R.Pinto, Bradleya 23: 1 (-6; illustr. 1-9) (2005).

Type: Chile, Iquique, Comuna de Iquique, Pinto & Kirberg 157665 (CONC).

Guerreroa confinis (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus confinis* F.Ritter, Succulenta (Netherlands) 1961: 4 (1961).

Type: Chile, near Copiapó, Monte Amargo, Ritter 494 (U 098080B, SGO, ZSS).

Guerreroa crispa (F.Ritter) Lodé **COMB. NOV.**

Guerreroa crispa subsp. *crispa*

Basionym: *Pyrrhocactus crispus* F.Ritter, Succulenta (Netherlands) 1959: 137 (1959).

Type: Chile, Atacama, Freirina, Ritter 491 (ZSS, not found, SGO, U).

Guerreroa crispa subsp. totalensis (F.Ritter) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Pyrrhocactus totalensis* F.Ritter, Succulenta (Netherlands) 1961: 131 (1961).

Type: Chile, Atacama, Totoral Bajo, 1956, Ritter 495 loc. 5 (U 117659B, SGO, ZSS).

Guerreroa esmeraldana (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Chileorebutia esmeraldana* F.Ritter, Taxon 12: 123 (1963).

Type: Chile, Antofagasta, Esmeralda, Ritter 518 loc. 1 (U 117795B, SGO, ZSS).

Guerreroa fulva (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Chileorebutia fulva* F.Ritter, Cactus (Paris) 66: 10 (1960), nom. inval. = *Thelocephala fulva* F.Ritter, Kakteen Südamerika 3: 1011 (1980).

Type: Chile, Copiapó, Totoral, 1956, Ritter 500 loc. 1 (U, SGO, ZSS).

Guerreroa glabrescens (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Chileorebutia glabrescens* Ritter, Cactus (Paris) 15(66): 9 (1960), incorrect name (Art. 11.3) = *Thelocephala glabrescens* (F.Ritter) F.Ritter, Kakteen Südamerika 3: 1003 (1980).

Type: Chile, Atacama, Copiapó, coastal region, 1956, Ritter 710 (U).

Guerreroa iquiquensis (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus iquiquensis* F.Ritter, Taxon 12: 32 (1963).

Type: Chile, Tarapacá, near Iquique, above the city, 1954, Ritter 201 (ZSS).

Guerreroa krausii (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Chileorebutia krausii* F.Ritter, Cactus, Paris 14(64): Suppl., p. [5] (1959); *et in* Cactus, Paris 15(66): 7 (1960).

Type: Chile, Atacama, Copiapó, 1956, *Ritter* 502 (U).

Guerreroa kunzei (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Echinocactus kunzei* C.F.Först., Handb. Cacteenk. [Förster] 2: 293 (1846).

Type: Chile, at high altitudes, Pöppig, cult. hort. Senke, not pres. Neotype: Chile, Antofagasta, Copiapó, Paipote, 1955, *Ritter* 220 loc. 2 “Paipote” (SGO No. 121487).

Guerreroa malleolata (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Chileorebutia malleolata* F.Ritter, Taxon 12: 123 (1963).

Type: Chile, North of Chañaral, 1956, *Ritter* 517 (U 0007625).

Guerreroa occulta (Kattermann) Lodé **COMB. NOV.**

Basionym: *Eriosyce occulta* Katt., Succ. Pl. Res. 1: 119 (1994).

Type: (neotype) Chile, Antofagasta, Taltal, Breas, *Kattermann* 391 (DBG).

Guerreroa odieri (Lem. ex Salm-Dyck) Lodé **COMB. NOV.**

Basionym: *Echinocactus odieri* Lem. ex Salm-Dyck, Cact. Hort. Dyck. (1849). 174 (1850).

Type: not des. Neotype: Chile, Atacama, S. of Caldera, base of Morro Copiapó, *Kattermann* 802 (DBG).

Guerreroa paucicostata (F.Ritter) Lodé **COMB. NOV.**

Guerreroa paucicostata subsp. *paucicostata*

Basionym: *Horridocactus paucicostatus* F.Ritter, Succulenta (Netherlands) 1959: 113 (1959).

Type: Chile, Antofagasta, 20 km N. of Paposo, *Ritter* 521, loc. 1 (U097984B, SGO, ZSS).

Guerreroa paucicostata subsp. *echinus* (F.Ritter) Lodé

Basionym: *Pyrrhocactus echinus* F.Ritter in Taxon 12: 33 (1963).

Type: Chile, Antofagasta, S. of Antofagasta, Cerro Coloso, *Ritter* 537, loc. 1 (U 116948B, SGO, ZSS).

Guerreroa paucicostata subsp. *floccosa* (F.Ritter) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Pyrrhocactus floccosus* F.Ritter, Taxon 12: 32 (1963).

Type: Chile, Antofagasta, coastal hills, 1956, *Ritter* 545 loc. 1 (U 117835B, SGO, ZSS).

Guerreroa recondita (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus reconditus* F.Ritter, Succulenta (Netherlands) 1962: 27 (1962).

Type: Chile, Antofagasta, mountains N. of town, Apr 1954, *Ritter* 204 (loc. 1 (ZSS, SGO, U).

Guerreroa sociabilis (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Neoporteria sociabilis* F.Ritter, Succulenta (Netherlands) 1963: 3 (1963).

Type: Chile, Atacama, Totoral Bajo, *Ritter* 655 (U 116972B).

Guerreroa spectabilis (Helmut Walter & J.C.Acosta) Lodé **COMB. NOV.**

Basionym: *Eriosyce spectabilis* Katt., Helmut Walter & J.C.Acosta, Cact. Succ. J. (Los Angeles) 83(5): 198 (-201; illustr. 1-11) (2011).

Type: Chile, Atacama, Huasco, highest mountains in the vicinity of Quebrada Carrizal. December 2009, *Juan Acosta* 704 (CONC).

Guerreroa taltalensis (Hutchison) Lodé **COMB. NOV.**

Guerreroa taltalensis subsp. *taltalensis*

Basionym: *Neoporteria taltalensis* Hutchison, Cact. Succ. J. (Los Angeles) 27(6): 181, illustr. 167 (1955).

Type: Chile, Antofagasta, Dept. Taltal, Sierra Esmeralda, ca. 3 miles north of Planta Esmeralda and ca. 1 mile inland from the coast on a road to the shoreline, on sides of shallow ravines, *P. C. Hutchison* #420, ex hort. University of California Botanical Garden #52.592-1 (UC).

Guerreroa taltalensis subsp. **pygmaea** (F.Ritter) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Pyrrhocactus pygmaeus* F.Ritter in Taxon 12: 32 (1963).

Type: Chile, Atacama, 20 km N. of Chañaral, on the coast, *Ritter* 519, loc. 1 (U 117858B, SGO, ZSS).

GENUS ***HORRIDOACTUS*** Backeberg (Cactoideae-Notocactaceae)

Blätt. Kakteenf. 1938(6): [17; 7, 12, 23] (1938).

Type: *Horridocactus horridus* Backeberg (*Cactus horridus* Colla 1833, non Kunth 1823).

Taxonomy: the molecular works of Bárcenas *et al.* (2011) confirmed what we already suspected: the genus *Eriosyce* is not monophyletic and is therefore not satisfactory as it is currently designed. In the phylogenetic study of Guerrero *et al.* (2019), seven clades are recovered, including a clade “*Horridocactus*”. In order to avoid an amplified *Eriosyce*, it seems to me, better to reinstate the genus *Horridocactus*, still widely used though the community and in accordance to the clade shown by these molecular results. The genus *Thelocephala*, whose type was *Thelocephala napina* therefore disappears within *Horridocactus*.

A molecular study of the complex “*curvispina*” was done in 2024 by H. Walter *et al.* and updates our preliminar works: according to them, the findings of Villalobos-Barrantes *et al.* (2022) supported the monophyly of the *Eriosyce* section “*Horridocactus*”.

Horridocactus aspillagae (Söhrens) Lodé **COMB. NOV.**

Horridocactus aspillagae subsp. *aspillagae*

Basionym: *Echinocactus aspillagae* Söhrens, Monatsschr. Deutsch. Kakteen-Ges. 1: 125, 127, illustr. (1929).

Type: Chile, Libertador General Bernardo O’Higgins, Colchagua, Hacienda Tanumé, 34°S, not pres. Lectotype: Soehrens, I.e. 127, the illustr. cited.

Horridocactus aspillagae subsp. **maechleriorum** (Helmut Walter) Lodé **COMB. NOV. & STAT. NOV.**

Sphalmate: as “*maechlerorum*”, a correctable orthographical error under ICN Art. 60.1 and 60.8.

Basionym: *Eriosyce aspillagae* subsp. *maechlerorum* Helmut Walter, Kakteen And Suk. 53(10): 261 (258-262; illustr. 1-7) (2002).

Type: Chile, Maule, Carranza, Talca, *Helmut Walter* HW142 (CONC).

Horridocactus duripulpa (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Chileorebutia duripulpa* F.Ritter, Taxon 12: 123 (1963).

Type: Chile, Atacama, Huasco, *Ritter* 1056 loc. 1 (U 145271B, SGO, ZSS).

Horridocactus jussieui (Monv. ex SalmDyck) Lodé **COMB. NOV.**

Basionym: *Echinocactus jussieui* Monv. ex Salm-Dyck, Cact. Hort. Dyck. (1849). 34, 170

(1850).

Type: not extant. Neotype: Chile, 60 km S. of Coquimbo, Nov 1957, *Ritter* 708a (U).

Horridocactus limariensis (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus limariensis* F.Ritter *Kakteen Südamerika* 3: 956 (1980).

Type: Chile, Coquimbo, prov. of Limari, halfway between Fray Jorge and the Via Panamericana, *Ritter* 222b (U?).

Horridocactus mutabilis (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus horridus* var. *mutabilis* F.Ritter, *Kakteen Südamerika* 3: 946 (1980).

Type: Chile, Coquimbo Region, coastal spur N. of Los Vilos, Dec. 1955, *F.Ritter* 223b (U 0249320).

Horridocactus napinus (Phil.) Lodé **COMB. NOV.**

Horridocactus napinus subsp. *napius*

Basionym: *Echinocactus napinus* Phil., *Gartenflora* 21: 129, t.721, illustr. 1 (1872).

Type: Chile, Atacama, ‘Sandy Beaches of Huasco’, *Philippi* s.n., not pres. Lectotype: the illustr. cited.

Horridocactus napinus* subsp. *lembckei (Katt.) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Eriosyce napina* subsp. *lembckei* Katt., *Eriosyce* (Cactac.) gen. revis. & ampl. (Succ. Pl. Res., 1) 118 (1994).

Type: Chile, Atacama, W. Freirina, *Kattermann* 77 (DBG).

Horridocactus napinus* subsp. *llanensis (I.Schaub & Keim) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Eriosyce napina* subsp. *llanensis* I.Schaub & Keim, *Cactus & Co.* 15(1): 36 (-38; illustr.) (2011)..

Type: Chile, Atacama region, Parque Nacional Llanos del Challe, 18th Nov 2010, *Ingrid Schaub & Ricardo Keim* (SGO 160015).

Horridocactus napinus* subsp. *pajonalensis (I.Schaub & Keim) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Eriosyce napina* subsp. *pajonalensis* I.Schaub & Keim, *Cactus & Co.* 15(1): 47 (-50; illustr.) (2011).

Type: Chile, Atacama region, North of Caleta Pajonales, 10 Sep 2010, *Ingrid Schaub & Ricardo Keim* (SGO 159376).

Horridocactus orientalis (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus aconcaguensis* var. *orientalis* F. Ritter, *Succulenta* (Netherlands) 9: 109 (1960).

Type: Chile, Valparaíso Region, San Felipe, Las Coimas, Jun 1955, *F.Ritter* 542a (U 0249247).

Horridocactus robustus (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus robustus* F.Ritter, *Succulenta* (Netherlands) 1960: 65 (1960).

Type: Chile, Valparaíso Region, Quillota, Ocoa, *F.Ritter* 239a (U 0249318).

Leucostele chiloensis* subsp. *borealis (F.Ritter) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Trichocereus chiloensis* var. *borealis* F.Ritter, Kakteen Südamerika 3: 1109. 1980.

Type: Chile, IV Region of Coquimbo, Prov. Elqui, valley of Elqui, Huanta, F.Ritter FR 228d. (U).

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Mammillaria albicans* subsp. *slevinii (Boed.) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Mammillaria slevinii* Boed., Mammillarien-Vergleichs-Schlüssel 44 (1933).

Type: México, Baja California Sur, Island San José, 31 Mar 1911, *Rose* 16550 (US).

Marshallocereus aragonii* subsp. *yunckeri (Standl.) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Cereus yunckeri* Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 9: 316, fig. 7 (1940).

Type: Honduras, Yoro, near Coyoles, 28 Jun 1938, *Yuncker, Koepper & Wagner* 8257 (F).

NEOMAPUCHEA Matuszewski & Lodé **GEN. NOV.** (actioideae-Notocactaceae)

Type: *Pyrrhocactus marksianus* Ritter

Etymology: (Lat.) “New”, because the genus *Mapuche* had already been used to designate a Hemiptera; “Mapuche”, designating and honouring **indigenous people Mapuche Arauca**, who lived in southern Argentina, as well as the centre and south of Chile, where the genus can be found.

Taxonomy: the genus *Neomapuche* was created to accomodate the taxa found in the clade “Campanulatae” of the phylogenetic study of Guerrero *et al.* (2019). We have separated the seven clades of this work, each of them monophyletic, in order to reflect the taxonomy with the results, and rejecting *Eriosyce sensu lato*, but accepting *Eriosyce sensu stricto* including *Islaya*.

In this work, the genus *Neomapuche* is considered **correct**.

Neomapuche marksiana Matuszewski & Lodé **COMB. NOV.**

Basionym: *Pyrrhocactus marksianus* F.Ritter, Succulenta (Netherlands) 1960: 2 (1960).

Type: Chile, Maule, Villa Prat, S.W. of Curicó, 1954, *Ritter* 234 (ZSS, SGO).

Neomapuche marksiana* subsp. *lissocarpa Matuszewski & Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Pyrrhocactus lissocarpus* F.Ritter, Succulenta (Netherlands) 1960(2): 17 (1960).

Type: Chile, Coquena, 34°15'S, 1955, *Ritter* 466 loc. 1 (U097936B, SGO, ZSS).

Neomapuche marksiana* subsp. *gracilis (F.Ritter) Matuszewski & Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Pyrrhocactus lissocarpus* var. *gracilis* F.Ritter, Succulenta (Netherlands) 1960: 17 (1960).

Type: Chile, Maule, Cauquenes (“Cauguenes”), 34°15', W. San Francisco de Mostazal, *Ritter* 466a (ZSS).

GENUS *NEOPORTERIA* Britton & Rose (Cactoideae-Notocactaceae)

Cactaceae (Britton & Rose) 3: 94, illustr. 103-108 (1922).

Type: *Neoporteria subgibbosa* Britton & Rose, Cactaceae (Britton & Rose) 3: 97, illustr. 8 (1922).

Neoporteria elquiensis (Katt.) Lodé **COMB. NOV.**

Basionym: *Eriosyce senilis* subsp. *elquiensis* Katt., in *Eriosyce* (Cactac.) gen. revis. & ampl. (Succ. Pl. Res., 1) 119 (1994).

Type: Chile, Coquimbo, Elqui, El Tambo, *Kattermann* 462 (DBG).

Neoporteria subgibbosa subsp. *litoralis* (Ritter) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Neoporteria litoralis* F.Ritter, Succulenta (Netherlands) 28: 43 (1959).

Type: Chile, Coquimbo, beach rocks near Coquimbo, *F.Ritter* 219 (ZSS).

Neoporteria subgibbosa subsp. *nigrihorrida* (Backeb. ex A.W.Hill) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Neoporteria nigrihorrida* (Backeb. ex A.W.Hill) Backeb., Kakteenkunde 1939: 81 (1939).

Type: Chile, not des. Lectotype: Kakt. ABC, illustr. p.301 (1936), the illustration cited.

GENUS *NOTOCACTUS*

Notocactus mammulosus subsp. *paulus* (H.Schloss. & Brederoo) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Notocactus paulus* H.Schloss. & Brederoo, Kakteen And. Sukk. 31: 116, illustr. (1980).

Type: Uruguay, near Ruta 5, about km 300 near Punta Bonilla (about 10 km before Tacuarembó), Feb 1972, *Peter Schlosser* H.Schl. 161 (MVM).

Notocactus muellermelchersii subsp. *hofackerianus* (A.S.Oliveira & R.Pontes) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Parodia hofackeriana* AS. Oliveira & R. Pontes, in Phytotaxa 598 (4): 284. 2023.

Type: Brazil, Rio Grande do Sul, Santana do Livramento, 265 m, 12 Oct 2015, *A.S.Oliveira & L.P.Deble* 84b (holo.: PACA).

GENUS *OPUNTIA*

Opuntia erinacea subsp. *hystricina* (Engelm. & Bigelow) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Opuntia hystricina* Engelm. & J.M.Bigelow, in Proc. Amer. Acad. Arts 3: 299 (1856).

Type: USA, Arizona, San Francisco Mountains, Colorado Chiquito (Little Colorado River), 1853, *John M. Bigelow* s.n., not des. Lectotype: USA, Arizona, Little Colorado River, 8 Dec 1853, *J.M.Bigelow* s.n. (MO).

Comments: contrary to the type species, branches of the subsp. *hystricina* are openly spreading, lower, and articles are larger.

According to Stock *et al.* (2023), this taxon was considered a variety of *O. polyacantha*, with a wide range from northern Arizona, the Colorado Plateau of Utah, and west across Utah to eastern Nevada. Examination of the type (photo) revealed that the spine arrangement is typical of *O. erinacea* and not *O. polyacantha*. In fact, the plants in western Utah are the tetraploid *O. erinacea*, while those on the Colorado Plateau of Utah are the hexaploid *O. nicholii*. Stock *et al.* restrict the taxon *Opuntia erinacea* var. *hystricina* from the type locality region of the valley of the Little Colorado River, east of Flagstaff, Arizona, then south in Arizona to near Snowflake. *O. erinacea* var. *hystricina* was replaced as a subspecies, according to the rule proposed by Hunt, who made the term “variety” inadequate in Cactaceae.

Opuntia erinacea subsp. *hystricina* is diploid (2n = 22).

Not previously listed in vol. 2.

Taxonomy: Since the volumes 1 and 2 of Taxonomy of the Cactaceae (2015), and according to the most complete phylogenetic study (Baker & Porter 2016) with 35 taxa of *Ancistrocactus*, *Echinomastus* and *Sclerocactus*, *Ancistrocactus* is sister to *Echinomastus*; in order to get a monophyletic group, all these taxa should be included within *Sclerocactus*, but excluding *Glandulicactus*, which is clearly a different lineage. We follow now this proposal here. As currently circumscribed in this work, the genus *Sclerocactus* is considered correct.

Sclerocactus hispidus (Donati & Zanov.) Lodé **COMB. NOV.**

Basionym: *Echinomastus hispidus* D.Donati & Zanov. in *Piante Grasse* 24(4): 138, illustr. pp.140-144 (2004).

Type: México, Coahuila, Cuatrociénegas, *Steven Brack* SB 452, plant. cult sem. C. Zanovello (Horto Botanico Patavino, depositum HG 54081)

Sclerocactus intertextus subsp. *dasyacanthus* (Engelm.) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Echinocactus intertextus* var. *dasyacanthus* Engelm., in *Proc. Amer. Acad. Arts* 3: 277. 1856.

Type: USA, Texas, near El Paso.

Sclerocactus johnsonii subsp. *lutescens* (Parish) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Echinocactus johnsonii* var. *lutescens* Parish, *Bull. S. Calif. Acad. Sci.* 25:83 (1926).

Type: USA, Nevada, Searchlight, on gravelly hills, 5 Jan 1925, *Marcus E. Jones* s.n. (Herb. Univ. Calif.).

Sclerocactus megarrhizus (Rose) Lodé **COMB. NOV.**

Sphalmate: as “*megarrhizus*”, a correctable spelling error under ICN Art. 60.1, 60.7 and Rec. 60A.1). Rose had nevertheless written it correctly.

Basionym: *Echinocactus megarrhizus*, Rose, *Contr. U. S. Nat. Herb.* 12: 290 (1909).

Type: México, near Ciudad Victoria, Tamaulipas, 1907, *Palmer* 107 (US 572337).

Sclerocactus pinkavanus (García-Mor., Gonz.-Bot. & Rodr. González) Lodé **COMB. NOV.**

Basionym: *Ancistrocactus pinkavanus* García-Mor., Gonz.-Bot. & Rodr. González, *Acta Succulenta* 2(1): 27-44. 2014.

Type: México: Coahuila State, North of Cuatrociénegas, gypsophilous grassland, 731 m, *Hinton et al.*, n° 29472, 2014-01-25. Holotype GBH. Isotypes : MEXU, ITCV, TAMUX.

Sclerocactus tobuschii (W.T.Marshall) J.Lodé **COMB. NOV.**

Basionym: *Mammillaria tobuschii* W.T.Marshall in *Saguaroland Bull.* vi. 79 (1952).

Type: USA, Texas, Bandera County, 2 mi. N.E. of Vanderpool, south slope, limestone ledge, 1400 ft, 24 Jun 1952, *Marshall & Blakley* B1501 (DES: holotype, DES, TEX: isotype).

Sclerocactus unguispinus subsp. *durangensis* (C.Runge ex Schumann) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Echinocactus durangensis* Runge, *Hamburger Garten- Blumenzeitung* 46: 231 (1890) nom. inval. ex K. Sch., *Gesamtbeschreibung Kakt.*, p. 449 (illustr. p.352, 61A) (1898).

Type: type locality not cited; acc. to Schumann, México, Durango, Rio Nazas, West of Villa Lerdo. Lectotype: the illustration cited.

Sclerocactus unguispinus subsp. *loui* (Gerhart Frank & Zecher) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Echinomastus laui* Gerhart Frank & Zecher, Cact. Succ. J. (Los Angeles) 50(4): 188 (-189), illustr. (1978).

Type: México, San Luis Potosí, road from San Luis Potosí to Zacatecas, near Salinas, *Ernst Zecher* 729-74/76 (ZSS).

GENUS *SELENICEREUS*

Selenicereus microcladus (Backeberg) Lodé **COMB. NOV.**

Basionym: *Hylocereus microcladus* Backeberg, in Stachlige Wildnis 57 (1942); cf. Backeb. in Fedde, Repert. li. 61. 1942 (Blätt. Kakteenf. 1937, No. 11, Anhang II, p. 2, Nom. prov.).

Type: Colombia, wet woods between the Rio Magdalena and Sierra Nevada, *Backeberg* s.n., not found. Subsequently (*vide* Bkbg l.c. 1959) found by Rauh in northern Perú.

GENUS *SOEHRENSIA*

Soehrensia narvaecensis (Cárdenas) Lodé **COMB. NOV.**

Basionym: *Trichocereus narvaecensis* Cárdenas, Fuaux Herb. Bull. 1(5): 25 (1953).

Type: Bolivia, Tarija, O'Connor, near Narváez, on the way from Tarija to Entre Ríos, 2700 m, Cárdenas 4828 (LIL, not found). Neotype: Bolivia, road to Narváez, 2567 m, 19 Dec 2009, *S. Albesiano, N. Muruaga, A. Alaria & R. Paz* 2082 (MERL).

Soehrensia purpureopilosa (Weing.) Lodé **COMB. NOV.**

Basionym: *Trichocereus purpureopilosus* Weing. in Backeb. & Kunth, Kaktus-ABC (Backeb. & Knuth) 204 (1934).

Type: Argentina, Córdoba, Sierra de Córdoba, *Schick* s.n., not pres. Neotype: Argentina, Prov. Córdoba, San Roque, Sierra de Córdoba, 12 Jan 1881, *G. Hieronymus* s.n. (CORD).

Soehrensia schickendantzii subsp. *shaferi* Britton & Rose) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Trichocereus shaferi* Britton & Rose, Cactaceae (Britton & Rose) 2: 144 (1920).

Type: Argentina, Salta, near San Lorenzo, 1800 m, wooded ravine, 11 Jan 1917, *Shafer* 44 (US?, K).

Soehrensia vatteri (R.Kiesling) Lodé **COMB. NOV.**

Basionym: *Trichocereus vatteri* R.Kiesling, Hickenia 1(6): 31(-32) (1976).

Type: Argentina, La Rioja, Dept. of General Lavalle, Tambillos, 25 Jan 1974, *Ángel Cabrera, E. Zardini, N. Deginani & F. O. Zuloaga* 24568 (LP).

GENUS *SPHAEROPUNTIA* Guiggi (Opuntioideae-Tephrocactaeae)

Supplementum II to Cactology 3 (2012).

Type: *Sphaeropuntia sphaerica* (C.F. Förster) Guiggi.

Etymology: (Lat.) “**globose-Opuntia**”, referring to the spherical shape of the segments of the genus.

Taxonomy: according to Guiggi (pers. comm., 2016), this new taxon differs in its morphology (non-tuberculate segments, which stand out easily, with apical branching; areoles prominent, numerous, large and with wool, distributed over the entire surface of the articles, yellow flower, seed without lateral awns, etc.), ecology (below 3400 m altitude) and distribution (western side

of the Andes) with respect to *Cumulopuntia* sensu stricto. *Sphaeropuntia* is also confirmed in the phylogenetic analysis of Nyffeler & Eggli (2010) and Ritz *et al* (2012).

About *Sphaeropuntia*, Walter & Guerrero (2022) commented that Nyffeler & Eggli (2010) remarked that the exclusively West-Andean species *Cumulopuntia sphaerica* (C.F.Först.) F. Anderson “is unambiguously shown as a separate lineage”, as it appears in a trichotomy with *Austrocylindropuntia* Backeb. and *Cumulopuntia* F. Ritter (Wallace & Dickie, 2002). Also, in Griffith & Porter (2009) the two accessions of *C. sphaerica* were not placed within the *C. boliviana* clade, but in a strongly supported trichotomy with *Austrocylindropuntia*. Finally, Ritz *et al.* (2012) showed that the well-supported *C. sphaerica* clade is sister to the *C. boliviana* clade. Genus accepted by Walter & Guerrero (2022).

Korotkova *et al.* (2021) consider that the circumscription of *Sphaeropuntia* is not yet fully resolved, but admit that *Cumulopuntia* is not monophyletic and falls in two clades.

Sphaeropuntia is accepted here as a **correct** genus.

Sphaeropuntia crassicylindrica (Rauh & Backeb.) Lodé **COMB. NOV.**

Basionym: *Tephrocactus crassicylindricus* Rauh & Backeb. in Descr. Cact. Nov. 8. 1957.

Type: Perú, Arequipa, Castilla, Aplao, Hacienda Ongoro, in Río Majes valley, 1000 m, 5 Oct 1956, Rauh K 152 (HEID 205178.).

Sphaeropuntia dimorpha (C. F. Först.) Lodé **COMB. NOV.**

Basionym: *Opuntia dimorpha* C. F. Först. Hamb. Gartenz. 17: 167. 1861.

Type: Perú, Dept. Arequipa, Arequipa, Socabaya, Batolito de la Caldera, al frente del anexo llamado El Pasto, 2290 m., 71°32'44.4"W, 16°28'47.95"S, 21 May 2014, A .Pauca 384 (HSP 003058).

Sphaeropuntia leucophaea (Phil.) Lodé **COMB. NOV.**

Basionym: *Opuntia leucophaea* Philippi, Anales Mus. Nac. Santiago de Chile, 27 (1891).

Type: Chile, Prov. Tarapacá, near Usmagana, Mar 1885, Rahmer s.n. (SGO 052672) .

Sphaeropuntia mollispina (Hoxey, A.Pauca, Quip. & Gdaniec) Lodé **COMB. NOV.**

Basionym: *Cumulopuntia mollispina* Hoxey, A.Pauca, Quip. & Gdaniec, Bradleya 41: 139-147, illustr. (2023).

Type: Perú, Dept Ayacucho, upstream from San Martín de Porres de Huillcallama, Río Lampalla, 1700 m, 30 Mar 2022, Hoxey, Pauca & Quipuscoa 50 (HSP).

Sphaeropuntia multiareolata (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Tephrocactus multiareolatus* F. Ritter. Taxon 13(4): 144-145 (1964).

Type: Perú, Arequipa, Caravelí, Convento, 1953, Ritter 275.

Sphaeropuntia sphaerica* subsp. *kuehnrichiana (Werdermann & Backeberg) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Opuntia kuehnrichiana* Werderm. & Backeb., Backeb. Neue Kakteen 64 (1931); et in Fedde, Repert. XXX. 59 (1932).

Type: Perú, Lima, road from Lima to Oroya, near Chosica, 700-900 m, 1931, Backeberg, not pres. Lectotype: Backeberg (1931), Die Cact. 1:300, illustr. 267: the illustration cited.

Sphaeropuntia tumida (F.Ritter) Lodé **COMB. NOV.**

Basionym: *Cumulopuntia tumida* F.Ritter, Kakteen Südamerika 4: 1254-1255, illustr. 1105

(1981).

Type: Perú, Chala Vieja, near coast, Arequipa, 1964, *Ritter* 1324 loc. 1 (U, ZSS).

Sphaeropuntia unguispina (Backeberg) Lodé **COMB. NOV.**

Basionym: *Opuntia unguispina* Backeberg, Blätt. Kakteenf. 1937(7): genus 10, sp. 7 (illustr.).

Type: Perú, Arequipa, desert of La Joya, *anon.* (not des.), Herb. ref in *Ostolaza* (2014, p.180, illustr. p.181): HUSA. Neotype: Perú. Arequipa, Arequipa, Uchumayo, hills to the left of the toll booth, next to the train tracks, 2036 m, 16°25'41,23''S, 71°40'35,95'' W, 14 Jun 2015, *A. Pauca* T. 547 (HSP007839).

Sphaeropuntia zehnderi (Rauh & Backeb.) Lodé **COMB. NOV.**

Basionym: *Tephrocactus zehnderi*, Rauh & Backeberg, Descr. Cact. Nov. 9 (1957).

Type: Perú, Arequipa, Chala valley, near Incuio, at foot of Sara Sara volcano, 3500 m, 1956, *Rauh* K 121 (ZSS).

GENUS *TEPHROCACTUS*

Tephrocactus weberi* subsp. *deminutus (Rausch) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Tephrocactus weberi* var. *deminutus* Rausch, Succulenta (Netherlands) 65(12): 251 (1986).

Type: Argentina, Salta province, south of Amblayo at an altitude of 2400 m, *Rausch* R 241 (ZSS).

GENUS *TRICHOCEREUS*

Trichocereus macrogonus* subsp. *pachanoi (Britton & Rose) J.Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Trichocereus pachanoi* Britton & Rose, Cactaceae (Britton & Rose) 2: 134 (-135; illustr. 196) (1920).

Type: Ecuador, Cuenca, 17-24 Sep 1918, *Joseph Nelson Rose Abelardo Pachano & George Rose* 22806 (US).

Trichocereus macrogonus* subsp. *peruvianus (Britton & Rose) J.Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Trichocereus peruvianus* Britton & Rose, The Cactaceae 2: 136 (1920).

Type: Neotype: Perú, Dept. Lima, near Matucana, 9 Jul 1914, *J. N. Rose & Mrs. J. M. Rose* 18658 (US 761324).

GENUS *WEINGARTIA*

Weingartia gemmae* subsp. *elizabethae (de Vries) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Sulcorebutia elizabethae* J.de Vries, Succulenta (Netherlands) 83(1): 34 (-37; illustr.) (2004).

Type: Bolivia, Dept Chuquisaca, Cerro Colata (between Mojocoya and the Rio Grande), 2800 m, 23 Oct 1998, *J. de Vries & E. van Zomeren* VZ 204 (LPB, WU).

Weingartia steinbachii* subsp. *krahnii (Rausch) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Sulcorebutia krahnii* Rausch, Kakteen And. Sukk. 21(6): 104, illustr. (1970).

Type: Bolivia, Dept. Santa. Cruz, Prov. Caballero, N. of Comarapa, Cerro Tukiphalla, *Rausch* R269 (WU).

Weingartia tarabucoensis subsp. *hertusii* (Halda & Horacek) Lodé **COMB. NOV. & STAT. NOV.**

Basionym: *Sulcorebutia crispata* subsp. *hertusii* Halda & Horáček, Acta Mus. Richnov., Sect. Nat. 7(2): 74 (2000).

Type: Bolivia, Dept. Chuquisaca, Sucre, vicinity of Zudáñez, 2800 m, *J.J.Halda & L.Horáček* 9911316 (PR).

GENUS *XIQUEXIQUE*

Xiquexique zehntneri (Britton & Rose) Lodé **COMB. NOV.**

Basionym: *Cephalocereus zehntneri* Britton & Rose, Cactaceae (Britton & Rose) 2: 35 (1920).

Type: Brazil, Bahia, district of Chique-Chique (Xique-Xique), Serra de Tiririca, Nov 1917, *Zehntner* s.n. (US, K).

Comments: Zappi (1994) synonymised *Pilosocereus braunii* with *P. gounellei* subsp. *zehntneri*, but they are not related (Köhler 2024) and even show a possible confusion (Köhler 2024).

Zappi (1994) also designated *P. superfloccosus* in synonym of *P. gounellei* subsp. *zehntneri* (including *P. braunii*), but current studies of Köhler with collaborators have indicated that it is a distinct taxon not related to *X. braunii* or *X. gounellei* subsp. *zehntneri*, and should not be regarded as a synonym of them.

According to the DNA works of Lavour (2017), Lavour *et al.* (2020) *Pilosocereus gounellei* subsp. *zehntneri* is since considered part of the new genus *Xiquexique*.

Anceschi & Magli (2021) recognise *Xiquexique gounellei* and *X. zehntneri* (both as *Pilosocereus*) as distinct species, which, for the different seeds observed, make me think that they are, in fact, species on their own.

Previously listed in Tax. of Cact. Vol. 2 (2015) as *Pilosocereus gounellei* subsp. *zehntneri*.



Xiquexique zehntneri in culture, Canary Islands ©JL

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Which genus is that?

Stenocereus stellatus with a pathology

Picture taken in habitat, Mexico. JL

