

Cactology 3

New Bulletin for Cactus & Melocactus Research 2012



Edited & published by Alessandro Guiggi
Vicolo XVIII 3, 28802 Mergozzo (VB), Italy
International Cactaceae Research Center (ICRC)
alex.guiggi@libero.it

The texts have been written by Alessandro Guiggi
Roy Mottram revised the English text
The texts in Spanish have been translated by Christian Loaiza
The texts in French have been translated by J el Lod e
Illustrations by the author & individual contributors

All right reserved
No parts of this issue may be reproduced in any form, without permission from the Publisher
  Copyright ICRC

ISSN 1971-3010

Cover illustration

A population in flower of *Miqueliopuntia miquelii* from Chile, Regi n III, Huasco, 130 km S of Copiap  along Panamericana towards Vallenar, 35 km S of the prov. boundary, gently sloped hill W of the road with large granitic stones, 640-700 m, 29 Nov. 1991. Photo by Eggli & Leuenberger 1815.

Back cover illustration

The habit and flower buds of *Consolea spinosissima* ssp. *corallicola*, cult. hort. Fairchild Tropical Garden from United States, Florida, Little Torch Key. Photo by V. Negr n-Ortiz.

Nomenclatural novelties proposed in this issue

Acanthocephala haselbergii (R mpler) Guiggi comb. nov.

Bolivocereus samaipatanus subsp. *divi-miseratus* (C rdenas) Guiggi stat. nov.

Cereus colosseus (F. Ritter) Guiggi comb. nov.

Consolea spinosissima subsp. *corallicola* (Small) Guiggi comb. et stat. nov.

Eriosephala lenninghausii subsp. *minor* (F. Ritter) Guiggi comb. et stat. nov.

Eriosephala magnifica (F. Ritter) Guiggi comb. nov.

Eriosephala schumanniana subsp. *claviceps* (F. Ritter) Guiggi comb. nov.

Eriosephala schumanniana subsp. *nigrispina* (K. Schumann) Guiggi comb. et stat. nov.

Eriosephala warasii (F. Ritter) Guiggi comb. nov.

Glandulicereus Guiggi gen. nov.

Glandulicereus chacalapensis (Bravo et T. MacDougall) Guiggi comb. nov.

Glandulicereus chrysocarpus (S nchez-Mejorada) Guiggi comb. nov.

Glandulicereus martinezii (J.G.Ortega) Guiggi comb. nov.

Glandulicereus montanus (Britton et Rose) Guiggi *comb. nov.*
Glandulicereus queretaroensis (F.A.C.Weber ex Mathsson) Guiggi *comb. nov.*
Glandulicereus quevedonis (J.G.Ortega) Guiggi *comb. nov.*
Glandulicereus thurberi (Engelmann) Guiggi *comb. nov.*
Glandulicereus thurberi subsp. *littoralis* (K. Brandegee) Guiggi *comb. nov.*
Griseocereus Guiggi *gen. nov.*
Griseocereus fimbriatus (Lamarck) Guiggi *comb. nov.*
Griseocereus fricii (Sánchez-Mejorada) Guiggi *comb. nov.*
Griseocereus griseus (Haworth) Guiggi *comb. nov.*
Griseocereus pruinosus (Otto ex Pfeiffer) Guiggi *comb. nov.*
Horridocactus paucicostatus subsp. *echinus* (F. Ritter) Guiggi *comb. nov.*
Horridocactus paucicostatus subsp. *floccosus* (F. Ritter) Guiggi *comb. nov.*
Lobivia pugionacantha subsp. *haemantha* (Rausch) Guiggi *comb. nov.*
Lobivia pugionacantha subsp. *rossii* (Boedeker) Guiggi *comb. nov.*
Marshallocereus aragonii subsp. *eichlamii* (Britton et Rose) Guiggi *comb. et stat. nov.*
Melocactus onychacanthus subsp. *albescens* (F. Ritter) Guiggi *stat. nov.*
Opuntia engelmannii subsp. *rastrera* (F.A.C. Weber) Guiggi *stat. nov.*
Opuntia lindheimeri subsp. *cantabrigiensis* (Lynch) Guiggi *comb. et stat. nov.*
Opuntia sulphurea subsp. *vulpina* (F.A.C. Weber) Guiggi *comb. et stat. nov.*
Trichocereus atacamensis subsp. *pasacanus* (F.A.C.Weber ex Rümpler) Guiggi *comb. nov.*
Trichocereus formosus subsp. *bruchii* (Britton et Rose) Guiggi *comb. nov.*
Trichocereus huascha subsp. *robustus* (Rausch) Guiggi *comb. nov.*
Uebelmannia pectinifera subsp. *eriocactoides* (Řepka, Krajča et V. Toman) Guiggi *stat. nov.*
Wigginsia turbinata subsp. *calvescens* (N.Gerloff et A.D.Nilson) Guiggi *comb. nov.*

INDEX

Editorial.....	4
New genera and combinations in the family of <i>Cactaceae</i> Jussieu (<i>Magnoliopsida</i> - <i>Cactales</i>).....	5
Reassessment of the infra-specific variability of <i>Opuntia sulphurea</i> Gillies ex Salm-Dyck (<i>Opuntioideae</i> - <i>Opuntieae</i>) from Argentina and Bolivia.....	10
Neotypification of <i>Opuntia miquelii</i> Monville (<i>Opuntioideae</i> - <i>Opuntieae</i>) from Chile.....	14
A new nomenclatural status for <i>Consolea corallicola</i> (Miller) Lemaire (<i>Opuntioideae</i> - <i>Opuntieae</i>) from Florida Keys (United States).....	17

5 August 2012

EDITORIAL

The third issue of Cactology is now presented. This issue focuses on the subfamily Opuntioideae with articles referring to the infraspecific variants of Opuntia sulphurea, Consolea spinosissima and to the neotypification of Opuntia miquelii, known today as Miqueliopuntia miquelii. Two new genera, Glandulicereus and Griseocereus, from the subtribe Stenocereinae. New combinations are proposed in anticipation of a taxonomic revision presented in a forthcoming monograph of the cactus family.

5 Agosto 2012

EDITORIALE

Il terzo bollettino della serie Cactology viene qui presentato. Questo numero pone la sua attenzione sulla sottofamiglia delle Opuntioideae, con articoli riferiti alla variabilità infra-specifica di Opuntia sulphurea, Consolea spinosissima e alla neotipificazione di Opuntia miquelii, conosciuta oggi come Miqueliopuntia miquelii. Come anticipazione di una revisione tassonomica presentata in un libro monografico sulla famiglia delle cactacee prossimo alla pubblicazione, vengono anche inclusi due nuovi generi Glandulicereus e Griseocereus della sottotribù Stenocereinae, con differenti nuove combinazioni.

5 Agosto 2012

EDITORIAL

Se presenta el tercer número de la revista Cactology. Este número se centra en la subfamilia Opuntioideae con artículos que se refieren a las variantes intraespecíficas de Opuntia sulphurea, Consolea spinosissima y la neotipificación de Opuntia miquelii, conocida actualmente como Miqueliopuntia miquelii. Se presenta dos nuevos géneros Glandulicereus y Griseocereus, derivados de la subtribu Stenocereinae. Se proponen también nuevas combinaciones en previsión de una revisión taxonómica presentada en una monografía de la familia Cactaceae.

5 Août 2012

ÉDITORIAL

Le troisième numéro de Cactology est présenté ici. Ce numéro est consacré à la sous-famille Opuntioideae avec des articles sur les variations infraspécifiques d'Opuntia sulphurea, Consolea spinosissima et à la néotypification d'Opuntia miquelii, connu aujourd'hui comme Miqueliopuntia miquelii. Deux nouveaux genres, Glandulicereus et Griseocereus, de la sous-tribu Stenocereinae. De nouvelles combinaisons sont proposées en prévision d'une révision taxonomique présentée dans une prochaine monographie de la famille des Cactacées.

NEW GENERA AND COMBINATIONS IN THE FAMILY OF CACTACEAE JUSSIEU (MAGNOLIOPSIDA-CACTALES)

Abstract – Two new genera *Glandulicereus* and *Griseocereus* are segregated from *Stenocereus sensu lato*. 33 new combinations are proposed here to reflect revisions presented in a forthcoming book, where the genera *Acanthocephala*, *Bolivicereus*, *Eriocephala*, *Horridocactus*, *Lobivia*, *Marshallocereus*, *Trichocereus* and *Wigginsia* will be accepted.

Riassunto – Due nuovi generi *Glandulicereus* e *Griseocereus* sono stati separati da *Stenocereus sensu lato* e un totale di 33 nuove combinazioni sono qui incluse riflettendo la revisione tassonomica presentata in un libro sulle cactacee d'imminente pubblicazione, con l'accettazione dei generi *Acanthocephala*, *Bolivicereus*, *Eriocephala*, *Horridocactus*, *Lobivia*, *Marshallocereus*, *Trichocereus* e *Wigginsia*.

Resumen – Dos nuevos géneros *Glandulicereus* y *Griseocereus* son separados del género *Stenocereus sensu lato*. Se proponen 33 nuevas combinaciones para reflejar los cambios que se presentaran en un libro de próxima publicación, en donde los géneros *Acanthocephala*, *Bolivicereus*, *Eriocephala*, *Horridocactus*, *Lobivia*, *Marshallocereus*, *Trichocereus* y *Wigginsia* serán aceptados.

Résumé - Deux nouveaux genres *Glandulicereus* et *Griseocereus* sont séparés de *Stenocereus sensu lato*. Il est proposé 33 nouvelles combinaisons ici pour refléter des révisions présentées dans un prochain livre, où les genres *Acanthocephala*, *Bolivicereus*, *Eriocephala*, *Horridocactus*, *Lobivia*, *Marshallocereus*, *Trichocereus* et *Wigginsia* seront acceptés.

Taxonomic novelties proposed in a forthcoming monograph of the cactus family are published here. Two new genera, *Glandulicereus* Guiggi and *Griseocereus* Guiggi, are described and separated from *Stenocereus* (A. Berger) Riccobono *sensu lato* as recognized in Hunt *et al.* (2006: 265), principally by distinguishable morphological characters of the areoles, flowers, and seeds. *Glandulicereus* is characterized by its tuberculate ribs, with or without inter-areolar furrows. The areoles are glandular, blackish or reddish with slender spines. Flower infundibuliform, with the perianth and tube deciduous only at the maturation of the fruit. Seed verrucose, with a regular surface and cuticular folds normally weakly developed. Distributed throughout Mexico and the United States. *Griseocereus* is distinguished by its greyish white, pruinose stems, with continuous ribs and sinusoidal margins. Areoles greyish, not glandular, with subulate spines. Flower widely infundibuliform, with the pericarpel elongated in anthesis, with perianth and tube caducous early during the development of fruit. Seed verrucose, with an irregular surface and cuticular folds well developed. Distributed from central and southern parts of America and the Caribbean. The author agrees with the informal groups of Gibson (1988-1991), and the segregation of *Isolatocereus* Backeberg, *Machaerocereus* Britton & Rose, and *Rathbunia* Britton & Rose [incl. *Ritterocereus* Backeberg], with the addition of *Hertrichocereus* Backeberg distinguished from *Stenocereus sensu stricto* [*S. stellatus* (Pfeiffer) Riccobono, *S. treleasei* (Rose) Backeberg]. *Marshallocereus* Backeberg is also excluded from *Stenocereus* (Arias *et al.*, 2003: 556) and with *Pachycereus* Britton & Rose (Arias & Terrazas 2009: 69, 81) is here treated as an independent genus of the tribe *Pachycereeae* Buxbaum. In *Parodia* Spegazzini, correction of the validity and orthography of *Parodia lenninghausii* (Eggl & Hofacker, 2010: 31) has been accepted, and the subgenera of *Parodia* (Eggl *et al.*, 2008) are here raised to the level of genus. Eggl *et al.* (2008) pointed out the validity and priority of the genera *Acanthocephala* and *Eriocephala* as proposed initially by Backeberg and then substituted respectively with *Brasilicactus* (Backeberg, 1977: 64, 84-85) and *Eriocactus* (Backeberg, 1977: 161-162) by the same author. Literature sources and recent molecular studies support the validity of the following genera: *Bolivicereus* Cárdenas (Ritter, 1980: 701-702), *Horridocactus* Backeberg (Backeberg, 1977: 210; Hunt *et al.*, 2006: 107 as subgroup), *Lobivia* Britton & Rose (Ritter, 1980: 456-460), *Trichocereus* (A. Berger) Riccobono (Albesiano & Terrazas, 2012: 11) and *Wigginsia*

D.M.Porter (Kiesling, 2005: 432). The circumscription of *Trichocereus* adopted here follows Ritter's concept of the genus (1980: 437-456) including *Helianthocereus* Backeberg and *Soehrensia* Backeberg, characterized by plants that are variable in habit of growth, length of flower and time of anthesis, probably related to their wide range of habitat and geographical distribution. New descriptions and combinations in support of these taxonomic changes are presented here.

Taxonomic novelties

Acanthocephala haselbergii (Rümppler) Guiggi **comb. nov.** *Basionymus*: *Echinocactus haselbergii* Rümppler, Handb. Cacteenk. ed. 2 563 (1886). *Typus*: Brasile, Rio Grande do Sul, hort. Haselberg [*holo. non servatus*].

Bolivocereus samaipatanus subsp. *divi-miseratus* (Cárdenas) Guiggi **stat. nov.** *Basionymus*: *Bolivocereus samaipatanus* var. *divi-miseratus* Cárdenas, in Natl. Cact. Succ. J. 6: 9 (1951). *Typus*: Bolivia, Prov. Chiquitos, prope Montana Divi Miserato, 900 m, Feb. 1950, M. Cárdenas 4569 [*Herb. Cardenasianum, holo.*; US, *iso.*].

Cereus colosseus (F. Ritter) Guiggi **comb. nov.** *Basionymus*: *Piptanthocereus colosseus* F. Ritter, Kakt. Südamerika 2: 553 (1980), *nom. incorr.* (cfr. ICBN Art. 11.3, McNeill *et al.*, 2006). *Synonymus*: *Cereus colosseus* F. Ritter, Kakt. Südamerika 2: 553 (1980), *nom. incorr.* (cfr. ICBN Art. 34.1, McNeill *et al.*, 2006). *Typus*: Bolivia, Santa Cruz, Florida, Mairana, 1963, F. Ritter FR 387 [U, *holo.*].

Erioccephala lenninghausii subsp. *minor* (F. Ritter) Guiggi **comb. et stat. nov.** *Basionymus*: *Eriocactus lenninghausii* "lenninghausii" var. *minor* F. Ritter, Kakt. Südamerika 1: 156 (1979), *nom. incorr.* (cfr. ICBN Art. 11.3, McNeill *et al.*, 2006). *Typus*: Brasile, Rio Grande do Sul, south of Montenegro, Klein's Berg, 1964, L. Host in F. Ritter FR 1274a [U, *holo.*].

Erioccephala magnifica (F. Ritter) Guiggi **comb. nov.** *Basionymus*: *Eriocactus magnificus* F. Ritter, in Succulenta, 45(4): 50 (1966), *nom. incorr.* (cfr. ICBN Art. 11.3, McNeill *et al.*, 2006). *Typus*: Brazil, Rio Grande do Sul, Serra Gerral, 19 Mar. 1964, L. Host in F. Ritter FR 1270 [U, *holo.*].

Erioccephala schumanniana subsp. *claviceps* (F. Ritter) Guiggi **comb. nov.** *Basionymus*: *Eriocactus claviceps* F. Ritter, in Succulenta, 45(8): 115 (1966), *nom. incorr.* (cfr. ICBN Art. 11.3, McNeill *et al.*, 2006). *Typus*: Brazil, Rio Grande do Sul, Júlio de Castilhos, 1963, L. Host in F. Ritter FR 1283 [U, *holo.*; ZSS, *iso.*].

Erioccephala schumanniana subsp. *nigrispina* (K. Schumann) Guiggi **comb. et stat. nov.** *Basionymus*: *Echinocactus nigrispinus* K. Schumann, in Monatsschr. Kakteenk. 9: 45 (1899). *Typus*: Paraguay, Paraguari, between Carepe-gua and Aca-ay, *Grosse s.n.* [B ?†, *holo.*].

Erioccephala warasii (F. Ritter) Guiggi **comb. nov.** *Basionymus*: *Eriocactus warasii* F. Ritter, in Bradea, 1(34): 353 (1973), *nom. incorr.* (cfr. ICBN Art. 11.3, McNeill *et al.*, 2006). *Typus*: Brazil, Rio Grande do Sul, Rio Pardo?, Büneker *s.n.* in F. Ritter FR 1400 [*Herb. Ritter ?†, holo.*; HB, *iso.*].

Glandulicereus Guiggi **gen. nov.** **Diagnosis**: *Cacti arborei, columnares; caules epruinosi costis tuberculosis inter areolas sulcis aut instructis aut non instructis; areolae nigellae vel rubellae, glandulosae; spinae debiles; flores nocturni, infundibuliformes, perianthii tubo tantum ad fructus maturitatem decido; semina verrucosa superficie normali instructa, striaturis cuticularibus plerumque inconspicuis.* **Typus generis**: *Glandulicereus thurberi* (Engelmann) Guiggi. **Etymologia**:

e glandulis quibus areolae instructae sunt. **Distributio:** tantum vivunt in Mexico et in America boreali.

Glandulicereus chacalapensis (Bravo et T. MacDougall) Guiggi **comb. nov.** *Basionymus:* *Ritterocereus chacalapensis* Bravo et T. MacDougall, in *Anales Inst. Biol. Univ. Nac. Mexico* 27: 316 (1957). *Typus:* Mexico, Oaxaca, between Chacalapa and Ayuta, near cost, T. MacDougall s.n. [MEXU, *holo.*].

Glandulicereus chrysocarpus (Sánchez-Mejorada) Guiggi **comb. nov.** *Basionymus:* *Stenocereus chrysocarpus* Sánchez-Mejorada, in *Cact. Suc. Mex.* 17(4): 95 (1972). *Typus:* Mexico, Michoacán, between Uruapan and Playa Azul, Palo Pintado, 350 m, 12 May 1971, H. Sánchez-Mejorada 71-0503 [MEXU, *holo.*].

Glandulicereus martinezii (J.G. Ortega) Guiggi **comb. nov.** *Basionymus:* *Lemaireocereus martinezii* J.G.Ortega, in *Mexico Forest.* 6: 8 (1928). *Typus:* Mexico, Sinaloa, J. Gonzáles-Ortega [?, *holo.*].

Glandulicereus montanus (Britton et Rose) Guiggi **comb. nov.** *Basionymus:* *Lemaireocereus montanus* Britton et Rose, *The Cact.* 2: 97 (1920). *Typus:* Mexico, Sonora, above Alamos, 18 Mar. 1910, J.N. Rose et al. 13039 [US, *holo.*].

Glandulicereus queretaroensis (F.A.C.Weber ex Mathsson) Guiggi **comb. nov.** *Basionymus:* *Cereus queretaroensis* F.A.C.Weber ex Mathsson, in *Monatsschr. Kakteenk.* 1: 27. (1891). *Typus:* Mexico, not determined [*holo. non servatus*].

Glandulicereus quevedonis (J.G. Ortega) Guiggi **comb. nov.** *Basionymus:* *Lemaireocereus quevedonis* J.G. Ortega, in *Mexico Forest.* 6: 7 (1928). *Typus:* Mexico, Sinaloa, Guamúchil, J. Gonzáles-Ortega [?, *holo.*].

Glandulicereus thurberi (Engelmann) Guiggi **comb. nov.** *Basionymus:* *Cereus thurberi* Engelmann, in *Amer. J. Sci. Arts, ser. 2*, 17: 234 (1854). *Typus:* Mexico, Sonora, 1851, G. Thurber [MO, *holo.*].

Glandulicereus thurberi subsp. *littoralis* (K. Brandegee) Guiggi **comb. nov.** *Basionymus:* *Cereus thurberi* var. *littoralis* K. Brandegee, in *Zoe* 5: 191 (1904). *Typus:* Mexico, Baja California, between San José del Cabo and Cabo San Lucas, on steep seacoast bluffs, 1892, T.S. Brandegee s.n. [UC, *holo.*].

Griseocereus Guiggi **gen. nov.** **Diagnosis:** *Cacti arborei, columnares; caules pruina albo-caesia conspersi, costis continuis marginibus sinuosis; areolae plerumque caesia, eglandulosae; spinae subulatae; flores nocturni, in infundibulum magnum formati, hypanthio ad floritionem oblongo, ante fructus maturitatem cito decedente; semina verrucosa superficie anomala striaturis cuticularibus conspicuis instructa.* **Typus generis:** *Griseocereus fimbriatus* (Lamarck) Guiggi. **Etymologia:** e pruina grisea quae totos caules cereorum horum conspergit. **Distributio:** vivunt in America centrali australique et in insulis caribaeis.

Griseocereus fimbriatus (Lamarck) Guiggi **comb. nov.** *Basionymus:* *Cactus fimbriatus* Lamarck, *Encycl.*, 1: 539 (1785). *Typus:* Haiti, La Bande du Sud, ca. 1695, C. Plumier [*holo.*†].

Griseocereus fricii (Sánchez-Mejorada) Guiggi **comb. nov.** *Basionymus:* *Stenocereus fricii* Sánchez-Mejorada, in *Cact. Suc. Mex.* 18(4): 89 (1973). *Typus:* Mexico, Michoacán, Mpio. La Huacana, between Arriaga and Playa Azul, 550 m, May 1971, H.Sánchez-Mejorada 71-0505 [MEXU, *holo.*].

Griseocereus griseus (Haworth) Guiggi **comb. nov.** *Basionymus*: *Cereus griseus* Haworth, Syn. Pl. Succ. 182 (1812). *Typus*: South-America, *sine data, cult. hort. Vere* [*holo. non servatus*].

Griseocereus pruinosus (Otto ex Pfeiffer) Guiggi **comb. nov.** *Basionymus*: *Echinocactus pruinosus* Otto ex Pfeiffer, Enum. Diagn. Cact. 54 (1837). *Typus*: Mexico, *sine legit, locus et data* [*holo. non servatus*].

Horridocactus paucicostatus subsp. *echinus* (F. Ritter) Guiggi **comb. nov.** *Basionymus*: *Pyrrhocactus echinus* F Ritter, Taxon 12: 33 (1963). *Typus*: Chile, Antofagosta, Cerro Coloso, F. Ritter FR 537 [U, *holo.*].

Horridocactus paucicostatus subsp. *floccosus* (F. Ritter) Guiggi **comb. nov.** *Basionymus*: *Pyrrhocactus floccosus* F Ritter, Taxon 12: 32 (1963). *Typus*: Chile, Antofagosta, coastal mountains, F. Ritter FR 545 [U, *holo.*].

Lobivia pugionacantha subsp. *haemantha* (Rausch) Guiggi **comb. nov.** *Basionymus*: *Lobivia pugionacantha* var. *haemantha* Rausch, Lobivia 85: 143 (108) 1985-86 (1987). *Typus*: Bolivia, Chuquisaca, Sud Cinti, near Inca Huasi, W. Rausch 639 [ZSS; *holo.*].

Lobivia pugionacantha subsp. *rossii* (Boedeker) Guiggi **comb. nov.** *Basionymus*: *Echinopsis rossii* Boedeker, in Kakteenkunde 9: 167 (1933). *Typus*: Bolivia, Potosí, high mountains, Ross *s.n.* [*holo. non servatus*].

Marshallocereus aragonii subsp. *eichlamii* (Britton et Rose) Guiggi **comb. et stat. nov.** *Basionymus*: *Lemaireocereus eichlamii* Britton et Rose, The Cact. 2: 89 (1920). *Typus*: Guatemala, Quetzaltenango. Finca Pirineos, Volcan Santa Maria de Jesus, F. Eichlam *s.n.* [NY, *holo. spec. vis.*].

Melocactus onychacanthus subsp. *albescens* (F. Ritter) Guiggi **stat. nov.** *Basionymus*: *Melocactus onychacanthus* var. *albescens* F Ritter, Kakt. Südamerika 4:1308 (1981). *Typus*: Peru, depart. Cajamarca, Ponte Crisnejas, F. Ritter FR 700b [U, *holo.*].

Opuntia engelmannii subsp. *rastrera* (F.A.C. Weber) Guiggi **stat. nov.** *Basionymus*: *Opuntia rastrera* F.A.C. Weber in Bois, Dict. Hort. 896 (1898). *Typus*: Mexico, San Luis Potosí, *sine legit et data* [*holo. non servatus*].

Opuntia lindheimeri subsp. *cantabrigiensis* (Lynch) Guiggi **comb. et stat. nov.** *Basionymus*: *Opuntia cantabrigiensis* Lynch, in Gard. Chron. III. 33: 98 (1903). *Typus*: *sine legit, locus et data, cult. hort.* Univ. Gard. Cambridge [*holo. non servatus* ?].

Trichocereus atacamensis subsp. *pasacanus* (F.A.C. Weber ex Rümpler) Guiggi **comb. nov.** *Basionymus*: *Pilocereus pasacanus* F.A.C. Weber ex Rümpler, Handb. Cacteenk. 2 ed. 678 (1886). *Typus*: Argentina, valleys from Catamarca to Salta, *sine legit, locus et data* [*holo. non servatus*].

Trichocereus formosus subsp. *bruchii* (Britton et Rose) Guiggi **comb. nov.** *Basionymus*: *Lobivia bruchii* Britton & Rose, The Cact. 3: 50 (1922). *Typus*: Argentina, Tucumán, Tafi del Valle [*holo. non servatus*].

Trichocereus huascha subsp. *robustus* (Rausch) Guiggi **comb. nov.** *Basionymus*: *Lobivia huascha* var. *robusta* Rausch, Lobivia 85: 141 (72) 1985-86 (1987). *Typus*: Argentina, Catamarca, Hualfin, W. Rausch 229 [?; *holo.*].

Uebelmannia pectinifera subsp. *eriocactoides* (Řepka, Krajča et V. Toman) Guiggi *stat. nov.* *Basionymus*: *Uebelmannia pectinifera* var. *eriocactoides* Řepka, Krajča et V. Toman, *Cactus & Co.* 14(1): 19 (2010). *Typus*: Brazil, Minas Gerais, near Diamantina, mountains of Serra do Espinhaço, 1100 m, 21 Aug. 2009, M. Krajča et V. Toman RNK 078 [HUEFS, *holo.*].

Wigginsia turbinata subsp. *calvescens* (N. Gerloff et A.D. Nilson) Guiggi *comb. nov.* *Basionymus*: *Notocactus calvescens* N. Gerloff et A.D. Nilson, in *Internoto* 15(3): 78 (1994). *Typus*: Brazil, Rio Grande do Sul, A.D. Nilson 384 [HAS, *holo.*].

Acknowledgements

I wish to thank Enrico Banfi for the Latin diagnosis included in the text.

References

- Albesiano, S., and T. Terrazas. 2012. Cladistic analysis of *Trichocereus* (*Cactaceae*: *Cactoideae*: *Trichocereae*) based on morphological data and chloroplast DNA sequences. *Haseltonia*. 17: 3-23.
- Arias, S., T. Terrazas, and K. Cameron. 2003. Phylogenetic Analysis of *Pachycereus* (*Cactaceae*, *Pachycereae*) based on Chloroplast and Nuclear DNA Sequences. *Syst. Bot.* 28(3): 547-557.
- Arias, S., and T. Terrazas 2009. Taxonomic revision of *Pachycereus* (*Cactaceae*). *Syst. Bot.* 34(1): 68-83.
- Backeberg, C. 1977. *Cactus Lexicon*. Blandford Press: Dorset (England).
- Eggl, U., M. Machado, and R. Nyffeler. 2008. Nomenclatural note on the subgenera of *Parodia* (*Cactaceae*-*Cactoideae*). *Taxon*. 57(3): 985-988.
- Eggl, U., and A. Hofacker. 2010. Validation of the name *Parodia lenninghausii* (*Cactaceae*), with a note on the lectotypification and orthography of the name. *Novon*. 20(1): 30-32.
- Gibson, A.C. 1988-1991. The systematics and evolution of subtribe *Stenocereinae*. 5-11. *Cact. Succ. J. (US)*. 60(6): 283-288; 61(1): 26-32; 61(3): 104-112; 62(1): 13-24; 62(4): 170-176; 63(2): 92-99; 63(4): 184-190.
- Hunt, D., N. Taylor, and G. Charles (eds.). 2006. *New Cactus Lexicon*. D. Hunt Books. Milborne Port, DT9 5DL (England).
- Kiesling, R. 2005. *Cactales*. In: *Flora Ilustrada de Entre Ríos (Argentina)*. Vol. IV. 401-444.
- McNeill, J. et al. 2006. International Code of Botanical Nomenclature (Vienna Code). *Regnum Veg.* Vol. 146. A.R.G. Gantner Verlag KG.
- Ritter, F. 1979-1981. *Kakteen in Südamerika*. Bd. 1-4. F. Ritter selfpub., D-3509 Spangenberg (Germany).

REASSESSMENT OF THE INFRA-SPECIFIC VARIABILITY OF *OPUNTIA SULPHUREA* GILLIES EX SALM-DYCK (*OPUNTIOIDEAE* - *OPUNTIEAE*) FROM ARGENTINA AND BOLIVIA

Abstract – The infraspecific variability of *Opuntia sulphurea* is revised and discussed. Subspecies *O. sulphurea* ssp. *vulpina* is distinguished from the type for its different morphology, ecology and for its most northern distribution. A new combination and a key to the recognized taxa are also included.

Riassunto – La variabilità infra-specifica di *Opuntia sulphurea* viene qui rivista e discussa. Una sottospecie *O. sulphurea* ssp. *vulpina* è distinta dal tipo per la differente morfologia, ecologia, e per una distribuzione più settentrionale. Una nuova combinazione e una chiave sono anche incluse per i taxa individuati.

Resumen – Se revisa y discute la variabilidad intraespecífica de *Opuntia sulphurea*. La subespecie *O. sulphurea* *vulpina* se distingue del tipo por su diferente morfología, ecología y por su distribución más septentrional. Se provee una nueva combinación y una clave para los taxones actualmente reconocidos.

Résumé – La variabilité infraspécifique d'*Opuntia sulphurea* est révisée et commentée. La sous-espèce *O. sulphurea* ssp. *vulpina* est distinguée du type pour sa morphologie différente, son écologie et pour sa distribution, plus au nord. Une nouvelle combinaison et une clé des taxa reconnus sont aussi inclus.

Opuntia sulphurea Gillies ex Salm-Dyck is the species most widespread in Argentina (Lambert, 1992: 184), but its distribution also includes Bolivia (Hunt *et al.*, 2006: 212). The application of the name by Salm-Dyck is uncertain, but here the usage by Weber (1893: 895) and Schumann (Iliff, 2002: 234-235) are accepted. Three varieties (var. *sulphurea*, var. *hildmannii* and var. *pampeana*) are recognized by Backeberg (1958: 412-415; 1977: 376). These are accepted and well defined by Kiesling (Kiesling & Meglioli, 2003: 163; Kiesling & Ferrari, 2005: 28; Kiesling *et al.*, 2011: 19), Trevisson & Demaio (2006: 58) and Trevisson & Perea (2009: 92). *Opuntia sulphurea* var. *sulphurea* [creeping habit of growth; fruit pale yellow, greenish inside; distributed in Argentina, 500-2000 m]; var. *pampeana* [habit erect; fruit pale red, greenish inside; distributed in Argentina, 100-1800 m], var. *hildmannii* [fruit purplish red, as is also the pulp within; distributed in Argentina & Bolivia, 2000-3500 m]. Comparing the first two varieties, the presumed distinctive characters are not significant because the fruit colour is variable with time (Backeberg, 1977: 376), and the habit of growth dependent upon the exposure to sunlight (Kiesling *et al.*, 2011: 19), while the altitude and distribution data overlap. The third variety presents a different pulp colour, distribution, elevation and ecology (Kiesling & Meglioli, 2003: 163). The first conclusion is that var. *pampeana* belongs within the range of variability of var. *sulphurea* (fig. 1), while var. *hildmannii* represents a well supported infraspecific taxon. Another name, *Opuntia vulpina* Weber, whose validity has been accepted (Crook & Mottram, 2004: 75-76; Britton & Rose, 1919: 134; Iliff, 2002: 242) was synonymized with var. *hildmannii* by Kiesling (2005: 28), which has the priority of publication. *Opuntia vulpina* was considered by Spegazzini to be morphologically different but closely related to *O. sulphurea* (Kiesling, 1984: 142). The variable morphological characters of the former were initially discussed by Britton & Rose from Bolivian material (1919: 134) and subsequently raised by Ritter to new species (1980: 499-501). The conclusion here is to adopt the two ecological and geographical subspecies (*i.e.* ssp. *sulphurea*, ssp. *vulpina*) with different vegetative and reproductive characters. Additional data was obtained from the examination of some herbarium specimens and other available literature (Castellanos, 1957; Font, 2003; Kiesling, 1990). The revised nomenclature, with new combinations and keys to the morphologically different infraspecific recognized taxa, follows here.

Revised nomenclature

Opuntia sulphurea Gillies ex Salm-Dyck, Hort. Dyck. 360 (1834). *Typus*: Argentina, Mendoza, erroneously cited as Chile, 1825 or 1826, *J. Gillies s.n.*, not preserved (Crook & Mottram, 2003: 86). *Neotypus* (Iliff, 2000: 6): Argentina, 1867, *J. Gillies s.n.*, *sub Cactus sericeus* [K, *holo.*, fl.].

O. sulphurea subsp. *sulphurea*

Synonymi: *Opuntia sulphurea* Gillies ex F.A.C. Weber, in Bois, Dict. Hort. 2(28): 895 (1898); *Opuntia sulphurea* G. Don in Loudon, Hort. Brit. 196 (1830), *nom. incorr.* (*cf.* ICBN Art. 32.1, McNeill *et al.*, 2006); *Opuntia maculacantha* Förster, in Handb. Gartenz. 17: 166 (1861); *Platyopuntia sulphurea* (G. Don) F. Ritter, Kakt. Südamerika 2: 407 (1980), *nom. incorr.* (*cf.* ICBN Art. 11.4, McNeill *et al.*, 2006); *Opuntia pampeana* Spegazzini, in Contr. Fl. Sierra Vent. 30 (1896); *Opuntia sulphurea* var. *pampeana* (Spegazzini) Backeberg, Die Cact. 1: 414 (1958); *Opuntia brunnescens* Britton & Rose, The Cact. 1: 150 (1919). **Specimina visa**: Argentina, vicinity of Cordoba, 8 Sep. 1915, *J. N. Rose et P. G. Russell* 21029, *sub Opuntia brunnescens* Britton & Rose [NY, *iso.*, *corp.*]. **Habitat & distribution**: arid places, rocky hills, Chaco and Espinal vegetation, 100-2000 m, Argentina (Buenos Aires, Catamarca, Chaco, Córdoba, Chubut, Jujuy, La Pampa, La Rioja, Mendoza, Neuquén, Rio Negro, Salta, San Juan, San Luis, Santa Fe, Santiago del Estero, Tucumán).

O. sulphurea subsp. *vulpina* (F.A.C. Weber) Guiggi *comb. et stat. nov.* *Basionymus*: *Opuntia vulpina* Weber, in Bois, Dict. Hort. 2(28): 895 (1898). *Typus*: Argentina, Catamarca, not preserved. *Synonymi*: *Opuntia hildmannii* Frič, in Möllers Dtsch. Gärtner-Zeitung 42(31): 377 (1927); *Opuntia sulphurea* var. *hildmannii* (Frič) Backeberg, Die Cact. 1: 413 (1958); *Platyopuntia spinibarbis* F. Ritter, Kakt. Südamerika 2: 499 (1980), *nom. incorr.* (*cf.* ICBN Art. 11.4, McNeill *et al.*, 2006); *Opuntia sulphurea* subsp. *spinibarbis* (F.Ritter) P.J.Braun & Esteves, in Succulenta 74(3): 133 (1995); *Platyopuntia spinibarbis* var. *grandiflora* F. Ritter, Kakt. Südamerika 2: 500 (1980), *nom. incorr.* (*cf.* ICBN Art. 11.4, McNeill *et al.*, 2006); *Platyopuntia brachyacantha* F.Ritter, Kakt. Südamerika 2: 501 (1980), *nom. incorr.* (*cf.* ICBN Art. 11.4, McNeill *et al.*, 2006); *Opuntia sulphurea* subsp. *brachyacantha* (F.Ritter) P.J.Braun & Esteves, in Succulenta 74(3): 133 (1995). **Specimina visa**: Bolivia, Dept. Tarija, Prov. Mendez, before Carrizal, Apr. 1962, *F. Ritter* 94 loc. 1, *sub Platyopuntia spinibarbis* [ZSS, *iso.*, *ar.*, *sp.*]. **Habitat & distribution**: rocky and dry altiplans, Puna vegetation, 2000-3500 m, NW Argentina (Catamarca, Jujuy, Salta), Bolivia (Chuquisaca, Cochabamba, La Paz, Potosí, Tarija).

Key to the *Opuntia sulphurea* subspecies

1. Cladodes 1.5-3 cm thick, strongly tuberculate; spines 1-5, brownish rose to whitish grey, 2-7 cm long; fruit pale yellow to reddish, pulp greenish yellow, ovoid-truncate to subglobose, 5-3 x 3.5-2.5 cm; seeds 3.5-3 mm long.....**1. *O. sulphurea* subsp. *sulphurea***
- Cladodes 3-4 cm thick, slightly tuberculate; spines 4-8, whitish to brownish yellow, 2.5-10 cm long; fruit purplish red, pulp purplish red, subglobose, 3.5-3 x 3-2 cm; seeds 2.5 mm long
.....**2. *O. sulphurea* subsp. *vulpina***

Acknowledgements

I wish to thank Urs Egli for the illustration in habitat here included.

References

- Backeberg, C. 1958. *Die Cactaceae*. Bd. I. Gustav Fischer Verlag: Jena (Germany).
- _____. 1962. *Die Cactaceae*. Bd. VI. Gustav Fischer Verlag: Jena (Germany).
- _____. 1977. *Cactus Lexicon*. Blandford Press: Dorset (England).
- Britton, N. L., and J. N. Rose. 1919. *The Cactaceae*. Vol. I. Carnegie Institute: Washington.
- Castellanos, A. 1957. Revisión de las Cactaceas argentinas. *Rev. Fac. Cienc. Agr.* 6(2): 1-29.
- Crook, R., and R. Mottram. 1998. *Opuntia* Index Part 4: G-H. *Bradleya*. 16: 119-136.
- _____. 2003. *Opuntia* Index Part 9: S. *Bradleya*. 21: 63-86.
- _____. 2004. *Opuntia* Index Part 10: T-V. *Bradleya*. 22: 53-76.
- Font, F. 2003. Cactáceas de la Provincia de Buenos Aires. *Rev. Circ. Colec. Cactus y Crasas Rep. Argent.* 2(4): 100-128.
- Hunt, D., N. Taylor, and G. Charles (eds.). 2006. *New Cactus Lexicon*. D. Hunt Books. Milborne Port, DT9 5DL (England).
- Lambert, J. G. 1992. *Cactus d'Argentine*. Concordia-Roeselare.
- McNeill, J. *et al.* 2006. International Code of Botanical Nomenclature (Vienna Code). *Regnum Veg.* Vol. 146. A.R.G. Gantner Verlag KG.
- Kiesling, R. 1984. *Cactaceas publicadas por el Dr. Carlos Spegazzini*. Librosur, Buenos Aires.
- _____. 1990. *Cactus de la Patagonia*. R. Kiesling edc. English translation by Víctor Turecek.
- Kiesling, R., and S. Meglioli. 2003. *Cactaceae*. In: *Flora de San Juan*. 2: 161-193.
- Kiesling, R., and O.E. Ferrari. 2005. *100 Cactus Argentinos*. Albatros: Buenos Aires.
- Kiesling, R., *et al.* 2011. *Cactaceae* Juss. In: *Flora del Valle de Lerma*. 10(7): 1-104.
- Ritter, F. 1980. *Kakteen in Südamerika*. Bd. 2. F. Ritter selfpub., D-3509 Spangenberg (Germany).
- Illiff, J. 2000. New Types in *Opuntia* sens. lat. *Cact. Syst. Init.* 9: 5-7.
- _____. 2002. The Andean opuntias: an annotated checklist of the indigenous non-platyopuntioideae opuntias (*Cactaceae-Opuntioideae*) of South America. In: *Studies in the Opuntioideae (Cactaceae)*. D. Hunt & Taylor N. (eds.). *Succulent Plant Research*. 6: 133-244.
- Trevisson, M., and P. Demaio. 2006. *Cactus de Córdoba y el centro de Argentina*. Lola: Buenos Aires.
- Trevisson, M., and M. Perea. 2009. *Cactus del Oeste de Argentina*. Lola: Buenos Aires.
- Weber, F.A.C. 1893. *Cactées*. In: D. Bois, *Dictionnaire d'Horticulture*. P. Klincksiek: Paris.



Figure 1: *Opuntia sulphurea* ssp. *sulphurea* (Argentina, La Rioja, Famatina, 13 km N of Chilecito towards Famatina, 0.5 km N of department frontier, 1150 m, roadside alluvial plain with fine sandy soil, 30 Dic. 1994). Photo: B. Leuenberger & U. Egli 4391c.

NEOTYPIFICATION OF *OPUNTIA MIQUELII* MONVILLE (*OPUNTIOIDEAE* - *OPUNTIEAE*) FROM CHILE

Abstract – A herbarium specimen that includes all the vegetative and reproductive elements of the species is here designated as the neotype of *Opuntia miquelii*, in the absence of original material. A discussion and summary about its nomenclatural history with some further exiccata are also included.

Riassunto – Un esemplare d'erbario che include tutti gli elementi vegetativi e riproduttivi della specie, è qui designato come neotipo di *Opuntia miquelii*, in mancanza di materiale originale preservato. Una discussione e un riassunto della sua storia nomenclaturale sono anche inclusi con l'analisi di ulteriori exiccata.

Resumen – Un ejemplar de herbario que incluye todos los elementos vegetativos y reproductivos de las especies es designado como neotipo de *Opuntia miquelii*, en ausencia del material original. Se discute y se presenta un resumen acerca de la historia de su nomenclatura, incluyendo algunos ejemplares exsiccata.

Résumé – Un spécimen d'herbier qui inclut tous les éléments végétatifs et reproducteurs de l'espèce est ici désigné comme le néotype d'*Opuntia miquelii*, en absence de matériel original. Un commentaire et un résumé de son histoire nomenclaturale avec quelques exsiccata sont aussi inclus.

Opuntia miquelii was described by Monville in 1840 from a plant cultivated in his garden coming from Huasco in Chile. Britton & Rose (1919: 78) created a separate monotypic series named *Miquelianae*. Backeberg initially transferred this species to *Cylindropuntia* (Backeberg & Knuth, 1936: 121) and subsequently to *Austrocylindropuntia* (Backeberg, 1942: 13; 1958: 142; 1962: 3576; 1977: 76). The same author described also a variety *jilesii* from Vallenar not far from the type locality, characterized by having a yellow flower and fruit (Backeberg, 1956: 6; 1958: 143; 1977: 76-77), but rejected by Ritter as having no taxonomic value (Ritter, 1980: 871). Ritter had studied and collected (Eggl *et al.*, 1995: 198) this species and created a new genus *Miqueliopuntia* (Ritter, 1980: 869) for it. Today, *Miqueliopuntia* remains an accepted monotypic genus, endemic to Chile (Hoffmann & Walter, 2004: 82), with distinctive vegetative and seed characters (Stuppy, 2002: 50). It is distributed in the regions of Atacama and Coquimbo (Hunt *et al.*, 2006: 192). The flower colour changes from reddish to white and the shape of the fruit from obovoid to ovoid (Katterman, 2011: 212) in a cline from north to south. Recent molecular analyses (Wallace & Dickie, 2002: 12; Griffith & Porter, 2009: 112; Majure *et al.*, 2012: 852) all support *Miqueliopuntia* as close relative to *Tunilla* D.R.Hunt & Iliff (= *Airampona* Guiggi; Guiggi, 2007: 89). Iliff (2002: 211) pointed out that a type was lacking for *Opuntia miquelii* Monville. A neotype (fig. 2), complete with all vegetative and reproductive exiccata from the province of Huasco, deposited in a Chilean herbarium, is designated here along with additional specimens referable to it.

Synopsis of the nomenclature

Miqueliopuntia miquelii (Monville) F.Ritter, *Kakt. Südamerika* 3: 869 (1980). *Basionymus*: *Opuntia miquelii* Monville, in Lemaire, *Hort. Universel* 1: 218 (1840). *Typus*: Chile, rocks of Huasco, *cult. Hort.* Monvilliano, *non servatus*. **Neotypus hic designatus**: Chile, Region III, Prov. Huasco, Mpio. Freirina, 26 km to Carrizalillo towards Vallenar, 280 m, 6 Dec. 1994, U. Eggl *et B.E. Leuenberger* 2585, *sub Opuntia miquelii* [CONC, dupl. B, ZSS *spec. vis.*, SI; corp., fl., fr., sem.]. *Synonymi*: *Cylindropuntia miquelii* (Monville) Backeberg, in Backeberg & F.M. Knuth, *Kaktus-ABC* 121, 1935 (1936); *Austrocylindropuntia miquelii* (Monville) Backeberg, in *Jahrb. Deutsch. Kakteen-Ges.* 2: 13, 1941 (1942); *Austrocylindropuntia miquelii* var. *jilesii* Backeberg, *Descr. Cact.* Nov. 6 (1956); *Opuntia miquelii* var. *jilesii* (Backeberg) G.D. Rowley, in *Natl. Cact. Succ. J.* 13: 4 (1958).

Specimina visa: Vallenar, 13 Oct. 1914, *J. N. Rose* 19328, sub *Opuntia miquelii* [NY, corp., ar., sp.]; Vallenar, 13 Oct. 1914, *J. N. Rose* 19328, sub *Opuntia miquelii* [NY, alc. fl., fr.]; Bandurrias, *G. Geisse s.n.*, sub *Opuntia geissei* [SGO; corp., fl.]; Región III, Prov. Huasco, 130 km S of Copiapó along Panamericana towards Vallenar, 640-700 m, 29 Nov. 1991, *U. Eggli et B.E. Leuenberger* 1815, sub *Opuntia miquelii* [SGO, ZSS; corp, sp., fr.]; Región III (de Atacama), Prov. Huasco, 34 km N of Domeyko, following the Panamericana towards Vallenar, 1000 m, 20 Oct. 1997, *U. Eggli et B.E. Leuenberger* 2971 [CONC, SGO, ZSS; fl.]; Región IV (de Coquimbo), Prov. Elqui, Mun. Vicuña, El Molle, 360 m, 29 Oct. 1997, *U. Eggli et B.E. Leuenberger* 3078, sub *Opuntia miquelii* [CONC, SGO, ZSS; corp., fl.]. Note: the collection realized by Ritter FR 257 loc. 2 from Maitencillo deposited at SGO n. 125235 (Eggli *et al.*, 1995: 198) hasn't been found there (G. Rojas com. pers).

Acknowledgements

I wish to thank Alicia Marticorena, Gloria Rojas and Mélica Muñoz for the digital photo of herbarium samples deposited in CONC, SGO, and Urs Eggli for the illustration in habitat here included.

References

- Backeberg, C. (1941) 1942. *Cactaceae* Lindley. *Jahrb. Deutsch. Kakteen-Ges.* 2: 1-80.
- _____. 1956. *Descriptions Cactacearum Novarum*. Gustav Fischer Verlag: Jena (Germany).
- _____. 1958. *Die Cactaceae*. Bd. I. Gustav Fischer Verlag: Jena (Germany).
- _____. 1962. *Die Cactaceae*. Bd. VI. Gustav Fischer Verlag: Jena (Germany).
- _____. 1977. *Cactus Lexicon*. Blandford Press: Dorset (England).
- Backeberg, C., and F.M. Knuth. (1935) 1936. *Kaktus-ABC*. Gyldendal.
- Britton, N. L., and J.N. Rose. 1919. *The Cactaceae*. Vol. I. Carnegie Institute: Washington.
- Crook, R., and R. Mottram. 2000. *Opuntia* index. Part 6: M-O. *Bradleya*. 18: 113-140.
- Eggli, U., M. Muñoz Schick, and B. E. Leuenberger. 1995. *Cactaceae* of South America: The Ritter Collections. *Englera*. 16:1-646.
- Griffith, M. P., and J. M. Porter. 2009. Phylogeny of *Opuntioideae* (Cactaceae). *Int. J. Plant Sci.* 170(1): 107-116.
- Guiggi, A. 2007. *Airampoia picardoi*, the correct name for *Opuntia picardoi*. *Haseltonia*. 13: 89-90.
- Hoffmann, A.E. J., and H. E. M. Walter. 2004. *Cactaceas En la flora silvestre de Chile*. 2 edc. Fund. Claudio Gay.
- Hunt, D., N. Taylor, and G. Charles (eds.). 2006. *New Cactus Lexicon*. D. Hunt Books. Milborne Port, DT9 5DL (England).
- Katterman, F. 2011. Observation of the Chilean *Opuntioideae*. Part IV. *Cact. & Succ. J. (US)*. 83(5): 211-213.
- Illiff, J. 2002. The Andean opuntias: an annotated checklist of the indigenous non-platyopuntioid opuntias (*Cactaceae-Opuntioideae*) of South America. In: *Studies in the Opuntioideae (Cactaceae)*. D. Hunt & Taylor N. (eds.). *Succulent Plant Research*. 6: 133-244.
- Majure L.C., R. Puente, M. Patrick Griffith, W. S. Judd, P. S. Soltis, and D. E. Soltis. 2012. Phylogeny of *Opuntia* s.s. (*Cactaceae*): Clade delineation, geographic origins, and reticulate evolution. *Amer. J. of Botany*. 99(5): 847-864.
- Ritter, F. 1980. *Kakteen in Südamerika*. Bd. 3. F. Ritter selfpub. D-3509 Spangenberg (Germany).
- Stuppy, W. 2002. Seed characters and the generic classification of the *Opuntioideae* (Cactaceae). In: *Studies in the Opuntioideae (Cactaceae)*. D. Hunt & Taylor N. (eds.). *Succulent Plant Research*. 6: 25-58.
- Wallace, R.S., and S. L. Dickie. 2002. Systematic implications of chloroplast DNA sequence variation in subfam. *Opuntioideae* (Cactaceae). In: *Studies in the Opuntioideae (Cactaceae)*. D. Hunt & Taylor N. (eds.). *Succulent Plant Research*. 6: 9-24.

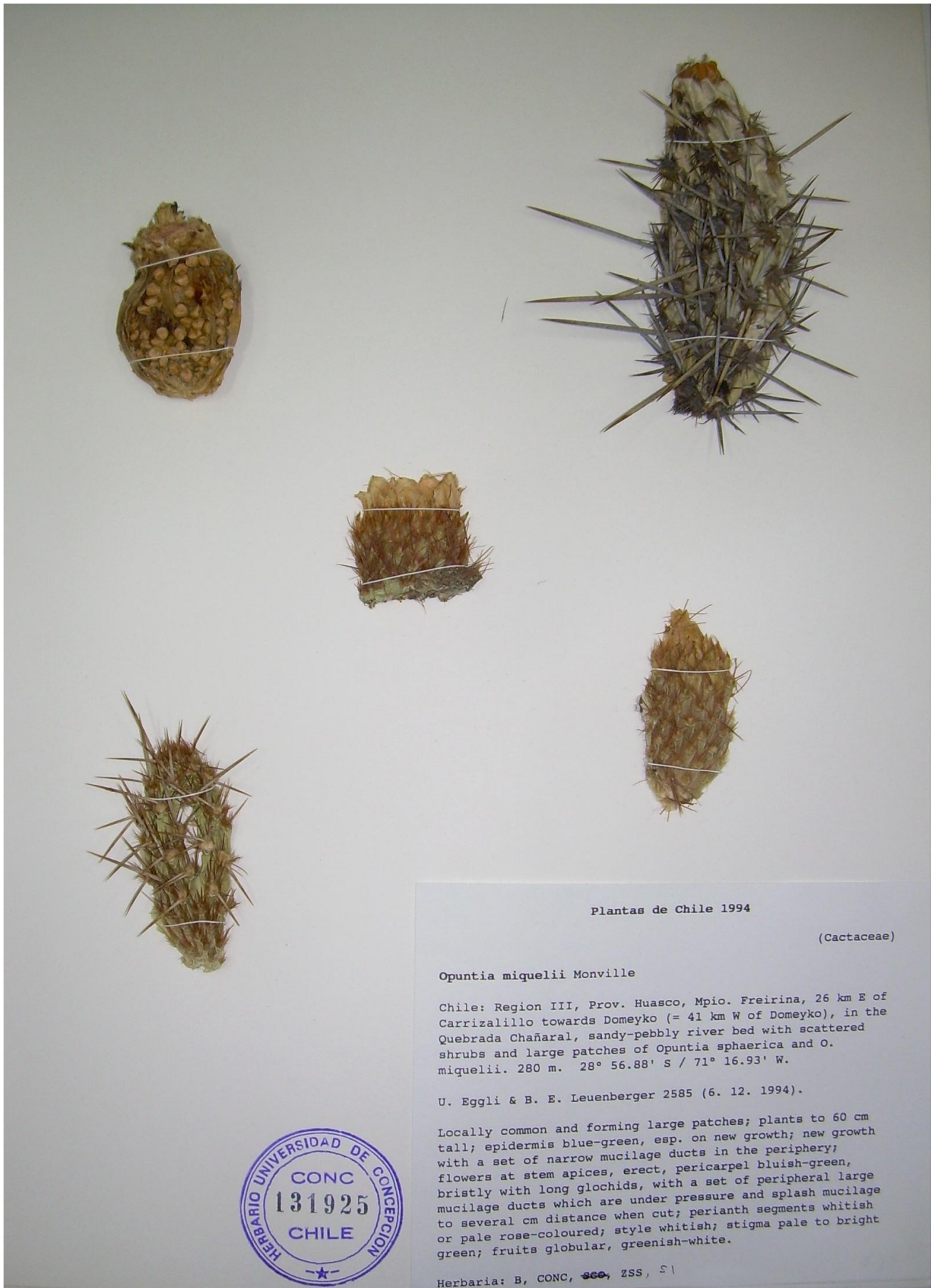


Figure 2: Neotype of *Opuntia miquelii* (*Miqueliopuntia miquelii*) with sections of the stem, pericarpel with flower and fruit. Photo: A. Marticorena.

A NEW NOMENCLATURAL STATUS FOR *CONSOLEA CORALLICOLA* (MILLER) LEMAIRE (*OPUNTIOIDEAE* - *OPUNTIEAE*) FROM FLORIDA KEYS (UNITED STATES)

Abstract – The critically endangered *Consolea corallicola* endemic to the Florida Keys, is here recognized as a rare and isolated subspecies of the Jamaican *Consolea spinosissima*, based on the original description and holotype. A new combination and a key to the accepted infraspecific taxa of *Consolea spinosissima* are also presented.

Riassunto – *Consolea corallicola* è una specie gravemente minacciata in natura, endemica delle isole Keys in Florida, che dopo l'analisi della descrizione originale e dell'holotipo è qui individuata come una rara e isolata sottospecie di *Consolea spinosissima*, originaria della Giamaica. La relativa nuova combinazione viene qui presentata anche con una chiave per i taxa infra-specifici accettati.

Resumen – La especie endémica de los Cayos de la Florida *Consolea corallicola*, en peligro crítico de extinción, es reconocida aquí como una subespecie rara y aislada de la especie Jamaicana *Consolea spinosissima*, basándose en la descripción original y el holotipo. Se provee una nueva combinación y una clave para los taxa intraespecíficos de *Consolea spinosissima*.

Résumé – En danger critique, *Consolea corallicola*, endémique des Keys de Floride, est ici reconnu comme une sous-espèce rare et isolée de la jamaïquaine *Consolea spinosissima*, basée sur la description originale et l'holotype. Une nouvelle combinaison et une clé pour les taxa infraspécifiques acceptés de *Consolea spinosissima* sont aussi présentés.

Consolea corallicola Small (rear cover illus.) is a critically endangered taxon (Pinkava, 2003: 150; Stiling, 2010: 190), originally described from Big Pine Key in southern Florida (Small, 1930: 25). Its actual distribution includes only two islands of the Florida Keys (Little Torch Key and Swan Key; Bradley & Woodmansee, 2002: 810; Stiling 2010: 190), threatened with extinction by land clearance and the pyradil moth *Cactoblastic cactorum* (Gordon & Kubisiak, 1998: 203; Stiling, 2010: 190). *C. corallicola* is self-incompatible (Negrón-Ortiz, 1998: 211), with only male dioecious flowers known for the remaining individuals in the wild (Negrón-Ortiz, 2007: 1362). The occasional seeds produced originated only by chance apomixis (Negrón-Ortiz, 1998: 211; Negrón-Ortiz, 2007: 1368). As a consequence its reproduction is only vegetative, confirmed by the low genetic diversity of the two existing populations (Cariaga *et al.*, 2005: 230). The taxonomic position within the wider concept of the genus *Opuntia* Miller (Backeberg, 1931: 66) of *C. corallicola* is controversial. It has been considered as a synonym of *Consolea spinosissima* (Miller) Lemaire, an endemic Jamaican species (Benson, 1982: 531; Hunt *et al.*, 2006: 51) or accepted as valid species (Pinkava, 2003: 150). A RAPD marker analysis (Gordon & Kubisiak, 1998: 204) did not clarify the systematic relations between the two considered taxa, concluding only that they are closely related. They could be considered as different species if account is taken of the variation in the Jamaican accessions being artificially low because of their inbreeding (all from a single fruit). Studies of the original description (Small, 1930: 25) and of the holotype (fig. 3) of *Consolea corallicola* have confirmed the close relation with the *Consolea spinosissima* complex [incl. *C. spinosissima* ssp. *millspaughii* (Britton) Guiggi; Guiggi, 2007: 23]. Adjacent areoles normally separated by 1-1.5 cm, spines initially coloured, pericarpel elongated, flower reddish, all support its inclusion as subspecies of *C. spinosissima*. The reticulate epidermis, pointed out by Areces-Mallea (2001: 97) as a taxonomic character, is not considered here to be of sufficient value to distinguish them as different species, since its variability in infraspecific taxa has also been observed in *Consolea moniliformis* ssp. *rubescens* (Salm-Dyck) Guiggi (Guiggi, 2007: 23). The new combination *C. spinosissima* ssp. *corallicola* (Small) Guiggi with a key of the recognized subspecies follow here.

Nomenclatural change ment

Consolea spinosissima subsp. *corallicola* (Small) Guiggi **comb. et stat. nov.** *Basionymus*: *Consolea corallicola* Small, in *Addisonia* 15(2): 25 (1930), with illus. *Typus*: United States: Florida, Monroe Co., Big Pine Key, Hammock, May 1919, J.K. Small s.n. [NY, *holo. spec. vis*, corp.; US, *iso.*]. *Synonymus*: *Opuntia corallicola* (Small) Werdermann *ex* Backeberg, *Neue Kakteen* 66 (1931), and in Werdermann, *Fedde Repert. Sp. Nov.* 30: 59 (1932). **Habitat & Distribution**: Caribbean tropical forest, near sea level, United States (Florida). **Note**: This geographical subspecies is characterized by its very limited distribution restricted to Florida Keys, and happens to be hexaploid (Negrón-Ortiz, 2007: 1363). The recognized infraspecific taxa of *Consolea spinosissima* are keyed below.

Key to the recognized subspecies of *Consolea spinosissima*

1. Cladodes 12-30 cm long.....2.
Cladodes 20-40 cm long, not reticulate; stem to 2.5 m high; spines 1-8, initially purplish pink, 2.5-6 cm long; pericarpel 4-5 cm long, 0-4 spined; flower orange red to red; Bahamas, Cayman Islands, Cuba.....**1. *C. spinosissima* subsp. *millspaughii***
2. Stem 2 m or more high; cladodes not reticulate; spines 5-9, initially warm pink, 3-5(12) cm long; pericarpel 3-6 cm long, 1-4 spined; flower red; United States.....
.....**2. *C. spinosissima* subsp. *corallicola***
Stem 3-5 m high; cladodes normally reticulate; spines 0-3(10), initially yellowish or pale blue-purple, 6-8 cm long; pericarpel to 3-8 cm long, normally unspined; flower orange to red; Jamaica
.....**3. *C. spinosissima* subsp. *spinosissima***

Acknowledgements

I wish to thank Vivian Negrón-Ortiz for the illustrations in cultivation here included.

References

- Areces-Mallea, A. E. 2001. A new opuntoid cactus from the Cayman Islands, B.W.I., with a discussion and key to the genus *Consolea* Lemaire. *Brittonia*. 53(1): 96-107.
- Backeberg, C. 1931. *Neue Kakteen*. Gartenbauverlag Trowitzsch & Sohn: Frankfurt.
- Benson, L. 1982. *The Cacti of the United States and Canada*. Stanford University Press: Stanford, California.
- Bradley, K.A., and S.W. Woodmansee. 2002. A significant new population of the rare semaphore pricklypear cactus, *Opuntia corallicola* (Cactaceae). *Sida*. 20(2): 809-811.
- Cariaga, K. A., C. E. Lewis, J. Maschinski, S. J. Wright, and J. Francisco-Ortega. 2005. Patterns of Genetic Diversity in the Critically Endangered Florida Key Endemic *Consolea corallicola* Small (Cactaceae): Evidence from Inter-Simple Sequence Repeat (ISSRs) DNA Polymorphisms. *Carib. J. of Science* . 41(2): 225-233.
- Gordon, D. R., and T. L. Kubisiak. 1998. Rapd analysis of the last population of a likely Florida Keys Endemic Cactus. *Florida Scientist*. 61(3/4): 203-210.
- Guiggi, A. 2007. New combinations in the Caribbean genus *Consolea* Lemaire (Opuntioideae). *Cactology*. 1: 23-24.
- Negrón-Ortiz, V. 1998. Reproductive biology of a rare cactus, *Opuntia spinosissima* (Cactaceae), in the Florida Keys: Why is seed set very low? *Sexual Pl. Reprod.* 11: 208-212.

- _____. 2007. Chromosome numbers, nuclear DNA content, and polyploidy in *Consolea* (*Cactaceae*), an endemic Cactus of the Caribbean Islands. *Amer. J. of Botany*. 94(8): 1360-1370.
- Negrón-Ortiz, V., and L.I. Strittmatter. 2004. Embryology of floral dimorphism and gender system in *Consolea corallicola* (*Cactaceae*), a rare species of the Florida Keys. *Haseltonia*. 10: 16-25.
- Pinkava, D. J. 2003. *Consolea* Lemaire. In: *Flora of North America, Magnoliophyta, Caryophyllidae*. 4(1): 149-150. Oxford University Press: New York, Oxford.
- Small, J. K. 1933. *Manual of the Southeastern Flora*. University of North Carolina Press: 896-917.
- Stiling, P. 2010. Death and Decline of a Rare Cactus in Florida. *Castanea*. 75(2): 190-197.

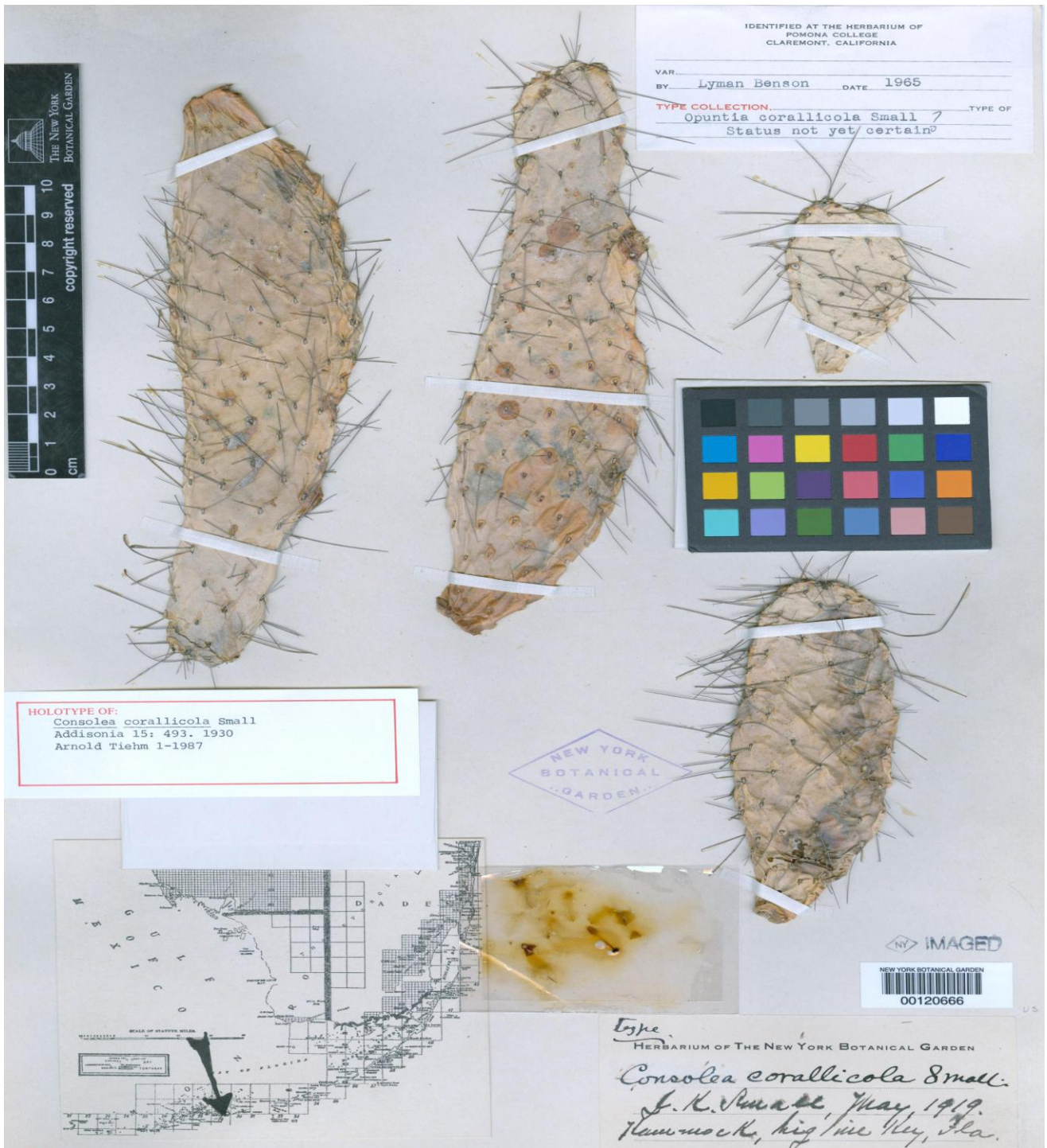


Figure 3: Holotype of *Consolea corallicola* (*Consolea spinosissima* ssp. *corallicola*). Photo: © New York Botanical Garden.

