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New in *Gymnocalycium* (Cactaceae): Two Nothospecies, Three Nothosubgenera and a Graft-Chimaeral Genus

By MAARTEN H. J. VAN DER MEER

Demaio et al. (2011) recognized seven subgenera in the cactus genus *Gymnocalycium*: *Gymnocalycium* (type: *G. gibbosum*), *Macrosemineum* (*G. denudatum*), *Microsemineum* (*G. saglionis*), *Muscosemineum* (*G. mihanovichii*), *Pirisemineum* (*G. pflanzii*), *Scabrosemineum* (*G. monvillei*) and *Trichomosemineum* (*G. quehlianum*).

Several hybrids between *Gymnocalycium* species are known to exist. The five listed below have been given nothospecific names, although two only have combinations in *Echinocactus*. New combinations for these taxa are made here.

GYMNOCALYCIUM ×CONTRACTUM
(HILDM.) M.VAN DER MEER **COMB. NOV.**

PARENTAGE ***Gymnocalycium gibbosum*** (Haw.) Pfeiff. ex Mittler × ***Gymnocalycium monvillei*** (Lem.) Pfeiff. ex Britton & Rose

BASIONYM ***Echinocactus ×contractus*** Hildm. – Monatsschr. Kakteenk. 1: 15. 1891 (as *Echinocactus gibbosus*

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var. *ferox* Labour. ex Rümpler × *Echinocactus monvillei* Lemaire)

GYMNOCALYCIUM ×HEIDIAE NEUHUBER

PARENTAGE ***Gymnocalycium baldianum*** Speg. (as ***Gymnocalycium rosae*** H.Till) × ***Gymnocalycium*** sp.?

GYMNOCALYCIUM ×INTERMEDIUM (HILDM.) M.VAN DER MEER **COMB. NOV.**

PARENTAGE ***Gymnocalycium denudatum*** (Link & Otto) Pfeiff. ex Mittler × ***Gymnocalycium monvillei*** (Lem.) Pfeiff. ex Britton & Rose

BASIONYM ***Echinocactus ×intermedius*** (Hildm.) Schelle – Handb. Kakteenkult. 186. 1906 = *Echinocactus denudatus* var. ×*intermedius* Hildm., Gart.-Zeitung (Berlin) 4(40): 479 (-480; fig. 111). 1885

GYMNOCALYCIUM ×MOMO V.GAPON & SCHELKUN.

PARENTAGE ***Gymnocalycium monvillei*** (Lem.) Pfeiff. ex Britton & Rose × ***Gymnocalycium mostii*** (Gürke) Britton & Rose

GYMNOCALYCIUM ×PAZOUTIANUM HALDA

PARENTAGE ***Gymnocalycium baldianum*** Speg. × ***Gymnocalycium denudatum*** (Link & Otto) Pfeiff. ex Mittler

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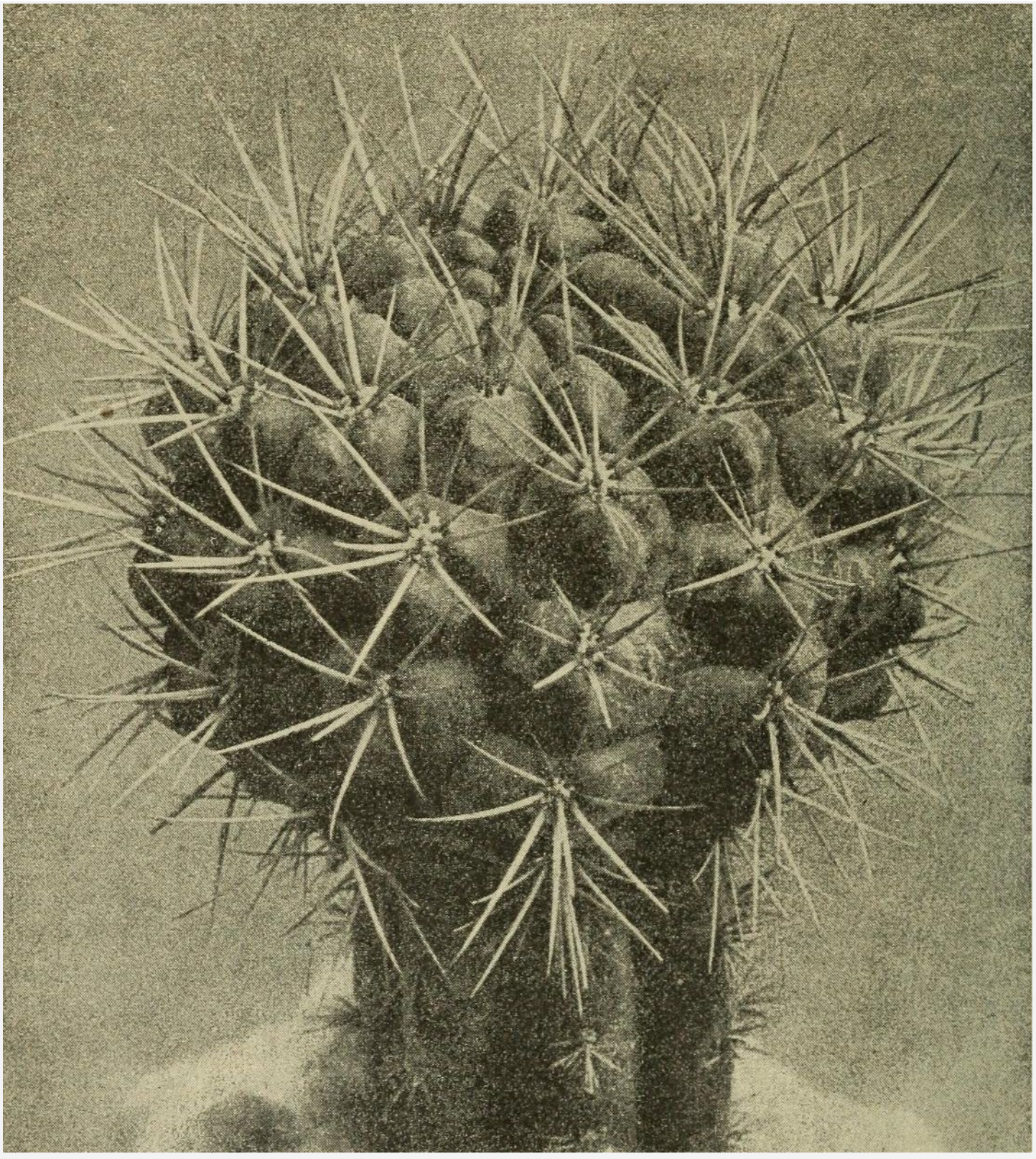

Gymnocalycium ×*contractum*, grafted on *Trichocereus macrogonus* – Monatsschr. Kakteenk. 1: 15. 1891

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G. ×*heidiae* is the only natural hybrid among these nothospecies. Putative natural hybrids between *G. bruchii* and *G. andreae* are reported by Papsch (2012: 10). Řepka & Mráček (2012) and Řepka & Koutecký (2013) hypothesize that *G. esperanzae* (*G. bodenbenderianum* × *G. castellanosii*?) and *G. prochazkianum* subsp. *simile* (*G. prochazkianum* subsp. *prochazkianum* × *G. prochazkianum* subsp. *simplex*?) are of hybrid origin as well.



Gymnocalycium 'Hwangjo' – Jeong et al. (2007: 569)

Reports about artificial hybrids are numerous. Rowley (2009) mentions the cultivar 'Ansbald', a hybrid between *G. andreae* and *G. baldianum*. According to Kobayashi (1996) the well-known variegated mutants 'Hibotan' and 'Hibotan-nishiki' were hybridized with many species, 'in particular *G. mihanovichii* and its varieties' (presumably including *G. mihanovichii* var. *friedrichii* = *G. stenopleurum*), *G. anisitsii* (from which the pink cultivars are said to originate), *G. damsii* (= *G. anisitsii* subsp. *damsii*), *G.*

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schickendantzii and others. Jeong et al. (2007) mention the fertile *G. marsoneri* × *G. mihanovichii* hybrid '983403' and a back-cross with *G. mihanovichii*, 'Hwangjo'. Other reported hybrids include *G. schickendantzii* × *G. stenopleurum* (as *G. michoga* × *G. mihanovichii* var. *pirarettaënse*), *G. stenopleurum* (as *G. mihanovichii* var. *friedrichii*) × *G. eurypleurum*, and *G. mihanovichii* 'Hibotan-nishiki' × *G. stenopleurum* 'Variegatum' (as *G. mihanovichii* var. *friedrichii* 'Variegatum') (Smirnov & Shemorakov 2006, Shemorakov 2003).

As shown in the table on the next page, three or possibly four hybrids derive from two different subgenera. To accomodate these taxa three new nothosubgenera are proposed here.

GYMNOCALYCIUM* NOTHOSUBGEN. ×*MACROCALYCIUM
M.VAN DER MEER **NOTHOSUBGEN. NOV.**

PARENTAGE ***Gymnocalycium* subgen. *Gymnocalycium*** × ***Gymnocalycium* subgen. *Macrosemineum*** Schütz ex Metzing

GYMNOCALYCIUM* NOTHOSUBGEN. ×*SCABROCALYCIUM
M.VAN DER MEER **NOTHOSUBGEN. NOV.**

PARENTAGE ***Gymnocalycium* subgen. *Gymnocalycium*** × ***Gymnocalycium* subgen. *Scabrosemineum*** Demaio, Barfuss, R.Kiesling & Chiapella

GYMNOCALYCIUM* NOTHOSUBGEN. ×*MASCABROSEMINEUM
M.VAN DER MEER **NOTHOSUBGEN. NOV.**

PARENTAGE ***Gymnocalycium* subgen. *Macrosemineum*** Schütz ex Metzing × ***Gymnocalycium* subgen. *Scabrosemineum*** Demaio, Barfuss, R.Kiesling & Chiapella

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SUBG.	HYBRID PARENT 1	HYBRID PARENT 2	SUBG.
GYM	*baldianum*[1]	*andreae*[1]	**GYM**
GYM	*baldianum*[2]	*denudatum*[2]	**MAC**
GYM	*bruchii*	*andreae*	**GYM**
GYM	*gibbosum*[3]	*monvillei*[3]	**SCA**
GYM	*rosae* (*baldianum*)[4]	?[4]	?
MAC	*denudatum*[5]	*monvillei*[5]	**SCA**
SCA	*mostii*[6]	*monvillei*[6]	**SCA**
MUS	*mihanovichii*	*anisitsii*	**MUS**
MUS	*mihanovichii*	*anisitsii damsii*	**MUS**
MUS	*mihanovichii*[7]	*marsoneri*[7]	**MUS**
MUS	*mihanovichii*	*schickendantzii*	**MUS**
MUS	*mihanovichii*	*stenopleurum*	**MUS**
MUS	*stenopleurum*	*eurypleurum*	**MUS**
MUS	*stenopleurum*	*schickendantzii*	**MUS**
SCA	*prochazkianum*[8]	*prochazkianum simplex*[8]	**SCA**
SCA	*castellanosii*[9]	*bodenbenderianum*[9]	**TRI**

[1] = 'Ansbald'
[2] = ×*pazoutianum*
[3] = ×*contractum*
[4] = ×*heidiae*
[5] = ×*intermedium*
[6] = ×*momo*
[7] = '983403'
[8] = *prochazkianum simile*?
[9] = *esperanzae*?

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Graft-Chimaera

Arguably the most bizarre *Gymnocalycium* cultivar is +*Hylogymnocalycium* 'Singular', or 'Rainbow Dragon', a graft-chimaera of *Gymnocalycium stenopleurum* 'Hibotan' or 'Hibotan-nishiki' and *Selenicereus* (*Hylocereus*) aff. *undatus*. Following the reduction to synonymy of *Hylocereus* under *Selenicereus* by Korotkova et al. (2017) a new graft-chimaeral genus is established here.[1]

+SELENIGYMNOCALYCIUM
M.VAN DER MEER **GEN. CHIM. NOV.**

PARENTAGE	***Gymnocalycium*** Pfeiff. ex Mittler + ***Selenicereus*** Britton & Rose
SYNONYMS	+*Hylogymnocalycium* G.D.Rowley, +*Hylocalycium* P.V.Heath (nom. instat., ICNCP Art. 24.3), +*Chimerophora* Y.Itô (nom. instat., ICNCP Art. 24.3)
NOTE	+*Selenigymnocalycium* 'Singular' = *Gymnocalycium stenopleurum* F.Ritter 'Hibotan' or 'Hibotan-nishiki' + *Selenicereus* aff. *undatus* (Haw.) D.R.Hunt

Two other graft-chimaeras involving *Gymnocalycium* are known:

+ECHINOGYMNOCALYCIUM
MOTTRAM

PARENTAGE	***Echinopsis*** Zucc. + ***Gymnocalycium*** Pfeiff. ex Mittler
SYNONYM	+*Echinocalycium* P.V.Heath (nom. instat., ICNCP Art. 24.3)

[1] To comply with ICNCP Art. 25.1 this paper is also available in printed form.

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NOTE	+*Echinogymnocalycium* 'Japan' = *Echinopsis eyriesii* (Turpin) Pfeiff. & Otto + *Gymnocalycium stenopleurum* F.Ritter

+MYRTIGYMNOCALYCIUM
MOTTRAM

PARENTAGE	***Gymnocalycium*** Pfeiff. ex Mittler + ***Myrtillocactus*** Console
SYNONYM	+*Myrtillocalycium* Meutter (nom. instat., ICNCP Art. 24.3)
NOTE	+*Myrtigymnocalycium* 'Polyp' = *Gymnocalycium mihanovichii* Britton & Rose 'Red Hibotan' + *Myrtillocactus cochal* Britton & Rose

+*Epigymnocalycium* Mottram (*Gymnocalycium* + *Epiphyllum* Haw.) is not known to exist.



+*Selenigymnocalycium* 'Rainbow Dragon'
– <http://cacti-paradise.com>

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