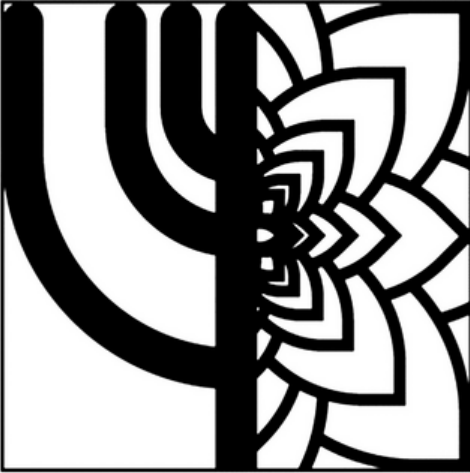


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International Organization
for Succulent Plant Study

Organización Internacional
para el Estudio de
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Organisation Internationale
de Recherche sur les
Plantes Succulentes

Internationale Organisation
für Sukkulenten-Forschung

IOS

**Repertorium
Plantarum
Succulentarum
LXXI (2020)**

A short history of *Repertorium Plantarum Succulentarum*

The first issue of *Repertorium Plantarum Succulentarum* (RPS) was produced in 1951 by Michael Roan (1909–2003), one of the founder members of the International Organization for Succulent Plant Study (IOS) in 1950. It listed the ‘majority of the new names [of succulent plants] published the previous year’. The first issue, edited by Roan himself with the help of A. J. A. Uitewaal (1899–1963), was published for IOS by the National Cactus & Succulent Society, and the next four (with Gordon Rowley as Associate and later Joint Editor) by Roan’s newly formed British Section of the IOS. For issues 5–12, Gordon Rowley became the sole editor. Issue 6 was published by IOS with assistance by the Acclimatisation Garden Pinya de Rosa, Costa Brava, Spain, owned by Fernando Riviere de Caralt (1904–1992), another founder member of IOS.

In 1957, an arrangement for closer cooperation with the International Association of Plant Taxonomy (IAPT) was reached, and RPS issues 7–22 were published in their *Regnum Vegetabile* series with the financial support of the International Union of Biological Sciences (IUBS). Issues 23–25 were published by Abbey Garden Press of Pasadena, California, USA, after which IOS finally resumed full responsibility as publisher with issue 26 (for 1975).

Gordon Rowley retired as editor after the publication of issue 32 (for 1981) along with Len E. Newton, who had assisted him with issues 13 onwards. Starting with issue 33, RPS was compiled and edited by Urs Eggli and Nigel Taylor, who enhanced it by adding data on nomenclatural types and enlarging the ‘Bibliographia’ section, first introduced in issue 20 (for 1969). After issue 45 (for 1994), Nigel Taylor handed over as co-editor to his wife Daniela Zappi, who assisted with issues 46–59. Reto Nyffeler joined the editorial team for issues 55–65.

Starting in 1986, a nomenclatural and bibliographical database was created at the Zürich Succulent Plant Collection to compile the individual issues. Over the years all earlier issues were added to this database, making it possible to produce the ‘IOS Index of Names of Cactaceae published 1950–1990’. This was published by the Royal Botanic Gardens Kew in 1991, and followed by an equivalent list for the ‘other succulents’ in 1994.

After 60 issues conventionally printed, *Repertorium Plantarum Succulentarum* has been made available in digital form in pdf format (‘portable document format’) from issue 61 onwards, as an ‘open access’ publication, accessible over the internet (e.g. <http://succulentresearch.org/publications/>).

Repertorium Plantarum Succulentarum LXXI (2020)

*Index nominum novarum plantarum succulentarum anno MMXX
editorum nec non bibliographia taxonomica ab U. Egli compositus.*

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Conventions used in Repertorium Plantarum Succulentarum

- Repertorium Plantarum Succulentarum attempts to list, under separate headings, newly published names of succulent plants and relevant literature on the systematics of these plants, on an annual basis. New names noted after the issue for the relevant year has gone to press are included in later issues. Specialist periodical literature is scanned in full (as available at the libraries at ZSS and Z or received by the compilers). Also included is information supplied to the compilers direct.
- Validly published names are given in **bold face** type (except for epithets of new cultivars), accompanied, in the case of newly described taxa, by an indication of the nomenclatural type (name or specimen dependent on rank), followed by the herbarium acronyms of the herbaria where the holotype and isotypes are said to be deposited (first acronym for holotype), according to the Index Herbariorum database. Invalid, illegitimate, or incorrect names are given in *italic* type face. In either case a full bibliographic reference is given. For new combinations, the basionym is listed. For invalid, illegitimate or incorrect names, the articles of the ICBN / ICN or ICNCP which have been contravened are indicated in brackets. For names before 2012, the articles cited are those of the ICBN (Vienna Code, 2006), while the ICN (Melbourne Code, 2012) is used for newer names.
- The compilers would like to point out that they do not accept any names that might be inadvertently validated in this volume of RPS.
- Bibliographic details of papers dealing only with the names of one or few new taxa are usually not repeated in the bibliographic section.
- Starting with RPS 61, abbreviations for periodicals are those suggested in Bibliographia Periodicorum Huntianum Ed. 2 (BPH2), or are constructed according to BPH2 guidelines for other periodicals. For some titles where BPH2 has incomplete data, the abbreviations suggested in the ‘Bibliography of Succulent Plant Periodicals’ (U. Eggli in Friciana 60: 1-139, 1998 (‘1995’)) are used.

Compiled by:

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Compilers' Preface

More than a year has lapsed since the publication of volume 70 of RPS, covering 2019. RPS publication is thus still running considerably behind schedule, despite our efforts to deal with the substantial backlog that has accumulated during the corona virus pandemic. One of the reasons for the slow progress is the fact that the Sukkulenten-Sammlung is in the process to the existing database that runs in a UNIX environment to a Microsoft-SQL-based platform – a time-consuming project that took a lot of energy in the past months. As a side-effect of this change, this issue will likely be the last that comes in the familiar look and layout in use since 1988 for RPS 37.

The second reason for the slow progress is the same as already mentioned for the previous issues: The number of new names published for succulent plants, and the number of papers dealing with aspects of the taxonomy of succulents, remain at a constant high level, stressing our time resources to their limits.

As in earlier years, the IPNI team at Kew is acknowledged for sharing their expertise and for discussing nomenclaturally ambiguous cases. The compilation of this RPS has benefitted from the meticulous attention to bibliographical details by Julia Hess, science assistant at the Zürich Succulent Plant Collection, and Rainer Mailänder again very kindly supported our work by scanning numerous "general" botanical journals. I am very grateful for their diligent work.

NOMINA NOVA

AGAVACEAE

- Agave calciphila** G. D. Starr, Phytotaxa 428(2): 74, ills. (pp. 75-76), 2020. Typus: *Starr* 2019-005 (ARIZ, MEXU, MO).
- Agave muxii** Zamudio & G. Aguilar-Gutiérrez, Brittonia 72(2): 154-157, ills., 2020. Typus: *Zamudio & al.* 15155 (UAMIZ, CHDIR, EBUM, IBUG, MEXU, QMEX, SLP, UAMIZ).
- Agave sylvestriana** Giraldo-Cañas, Revista Mex. Biodivers. 91: e913274: 3-5, ills. (pp. 4-9), 2020. Typus: *Giraldo-Cañas & Espinel Galván* 6214 (COL, COL, HUA, UPTC).
- Furcraea abisaii** Giraldo-Cañas, Darwiniana n.s. 8(2): 500-503, ills. (incl. pp. 505-506), 2020. Typus: *Giraldo-Cañas & Espinel-Galván* 6204 (COL, COL, HUA).
- Yucca picicola** Zamudio, Brittonia 72(2): 158-161, ills., 2020. Typus: *Zamudio & Zamudio* 11000 (CHDIR, EBUM, ENCB, IBUG, MEXU, QMEX, UAMIZ).

AIZOACEAE

- Aptenia ×vascosilvae** Gideon F. Smith & al., Phytotaxa 441(2): 221-222, ills., 2020. Typus: *Laguna* s.n. (VAL, ABH). [= *Aptenia cordifolia* × *A. haeckeliana*.]
- Delosperma badspoortense** (van Jaarsveld) Klak, Phytotaxa 459(2): 149, 2020. Basionym: *Drosanthemum badspoortense*.
- Drosanthemum calcareum* Klak, Phytotaxa 459(2): 146, 2020. Based on *Rogers* 4248. *Nom. illeg.* (ICN Art. 52.1). [*Nom. nov. superfl. pro Mesembryanthemum intermedium* L. Bolus 1924 (*non* De Candolle 1813), but previously validly renamed *Drosanthemum intermedium* L. Bolus 1930.]
- Drosanthemum overbergense** Klak, Phytotaxa 459(2): 148, fig. 4 (p. 144), 2020. Typus: *Curtis* 419 (BOL 217933).
- Drosanthemum pubipetalum** (L. Bolus) Klak, Phytotaxa 459(2): 145, ills. (p. 143), 2020. Basionym: *Delosperma pubipetalum*.
- Lampranthus alboroseus** Klak, Phytotaxa 435(1): 64-66, ills., 2020. Typus: *Helme* 9567 (BOL).
- Lemonanthemum** Klak, Phytotaxa 459(2): 149, 2020. Typus: *Mesembryanthemum zygophylloides* L. Bolus.
- Lithops dendritica** ssp. **archerae** (L. Bolus) R. A. Earlé & A. J. Young, Bradleya 38: 222, 2020. Basionym: *Lithops archerae*.
- Lithops dendritica** ssp. **groendrayensis** (H. Jacobsen) R. A. Earlé & A. J. Young, Bradleya 38: 222, 2020. Basionym: *Lithops pseudotruncatella* var. *groendrayensis*.
- Lithops dendritica** ssp. **schoemanii** (R. A. Earlé & Uijts) R. A. Earlé & A. J. Young, Bradleya 38: 222, 2020. Basionym: *Lithops pseudotruncatella* ssp. *schoemanii*.
- Lithops divergens** ssp. **groendrayensis** (de Boer) R. A. Earlé & A. J. Young, Bradleya 38: 222, 2020. Basionym: *Lithops divergens* var. *amethystina*.
- Lithops eberlanzii** var. **aiaisensis** (de Boer) R. A. Earlé & A. J. Young, Bradleya 38: 222, 2020. Basionym: *Lithops erniana* var. *aiaisensis*.
- Lithops gesinae** ssp. **annae** (de Boer) R. A. Earlé & A. J. Young, Bradleya 38: 222, 2020. Basionym: *Lithops annae*.
- Lithops julii** ssp. **rouxii** (de Boer) R. A. Earlé & A. J. Young, Bradleya 38: 222, 2020. Basionym: *Lithops julii* var. *rouxii*.
- Ruschia turgida** (L. Bolus) Klak, Phytotaxa 433(1): 42, ill. (figs. 1-3, pp. 43-45), 2020. Basionym: *Ruschia stricta* var. *turgida*.
- Ruschia vaginella* Klak, Phytotaxa 433(1): 50, fig. 12 (p. 52), 2020. Typus: K [lecto – icono: Duncanson drawing 1024/565, 3. 3. 1824] [Lectotype designated (for the replaced synonym) by H. E. K. Hartmann 1999: 70, and also given by H. E. K. Hartmann, IHSP Aizoaceae F-Z, 282, 2001 ('2002').]. *Nom. illeg.* (ICN Art. 52.1). [Published as *nom. nov. pro Mesembryanthemum vaginatum* "Haworth 1821: 127", which is a spurious indirect reference to *Mesembryanthemum vaginatum* Haworth (1803), which was previously validly renamed *Ruschia vaginata* Schwantes (1927).]

APOCYNACEAE

- Aspidoglossum angustissimum** ssp. **breviolobum** Goyder, Fl. Zambes. 7(3): 254, 2020. Typus: *Chase* 6262 (K, SRGH).
- Boucerosia penduliflora** Frandsen & Aditya, Asklepios 126: 11, 13, ills. (pp. 12-13), 2020. Typus: *Aditya* 30-099 (PRE).
- Brachystelma ariyittaparense** (P. Biju & al.) K. Prasad & Venu, Taxon. Rev. Gen. Brachystelma India, 107, ill., 2020. Basionym: *Ceropegia ariyittaparensis*. [Sphalm. 'ariyittaparensis'.]
- Brachystelma bilobatum** Sadasiviah & K. Prasad, in K. Prasad & Venu, Taxon. Rev. Gen. Brachystelma India, 83-85, ills., 2020. Typus: *Sadasiviah* 2081 (SKU, BSID).
- Brachystelma densiflorum** K. Prasad & al., Taxon. Rev. Gen. Brachystelma India, 24-26, ills., 2020. Typus: *Prasad & Sudheshna* 5212 (CAL, BSID).
- Brachystelma kadapense** M. Sridhar Reddy & al., in K. Prasad & Venu, Taxon. Rev. Gen. Brachystelma India, 86-89, ills., 2020. Typus: *Ankalath & al.* 5252 (CAL, BSID).
- Brachystelma kolarense** var. **malwanense** (S. R. Yadav & N. P. Singh) K. Prasad & Venu, Taxon. Rev. Gen. Brachystelma India, 94, 2020. Basionym: *Brachystelma malwanense*.
- Brachystelma kolarense** var. **naorojii** (P. Tetali & al.) K. Prasad & Venu, Taxon. Rev. Gen. Brachystelma India, 94, ills. (pp. 95-96), 2020. Basionym: *Brachystelma naorojii*.
- Brachystelma mahajanii** var. **mahendragiriense** (K. Prasad & al.) K. Prasad & Venu, Taxon. Rev. Gen. Brachystelma India, 72, ills. (p. 73), 2020. Basionym: *Brachystelma mahendragiriense*.
- Brachystelma mahajanii** var. **saldanhae** (Britto & Bruyns) K. Prasad & Venu, Taxon. Rev. Gen. Brachystelma India, 74, ills. (p. 75-76), 2020. Basionym: *Brachystelma saldanhae*.
- Brachystelma ramaswamii** K. Prasad & Venu, Taxon. Rev. Gen. Brachystelma India, 66-67, ills., 2020. Typus: *Ramaswami* 1320 (CAL).
- Brachystelma reflexicorollinum** K. Prasad & al., Taxon. Rev. Gen. Brachystelma India, 37-39, ills., 2020. Typus: *Prasad & Sudheshna* 5213 (BSID, Herb. Yogi-

- Vemana Univ. Kadapa).
- Brachystelma telanganense** Rasingam & J. Swamy, Rheedeia 30(3): 380-382, ills., 2020. Typus: *Rasingam & Swamy* 8023 (CAL, BSID).
- Ceropegia adamsiana** M. G. Gilbert, Fl. Zambes. 7(3): 165, fig. 7.3.151: 59 (p. 161), 2020. Typus: *Richards* 7289 (K).
- Ceropegia aloicola** M. G. Gilbert, Fl. Zambes. 7(3): 110, fig. 7.3.143: 3 (p. 108), 2020. Typus: *Leach & Bayliss* 11955 (K, PRE, SRGH).
- Ceropegia arenarioides** M. G. Gilbert, Fl. Zambes. 7(3): 147, fig. 7.3.149: 40 (p. 142), 2020. Typus: *Wild* 7821 (K).
- Ceropegia ariyittaparensis** P. Biju & al., Phytotaxa 452(2): 181, ills. (pp. 182-183), 2020. Typus: *Biju & Augustine* 1296 (CAL, MH).
- Ceropegia buraoensis** Bruyns, Phytotaxa 441(2): 196, ills. (p. 197), 2020. Typus: *Bruyns* 13781 (BOL, HARG).
- Ceropegia chimanimaniensis** M. G. Gilbert, Fl. Zambes. 7(3): 121, fig. 7.3.144: 15 (p. 114), 2020. Typus: *Ballings & Wursten* PB2289 (BR).
- Ceropegia cordifolia** M. G. Gilbert, Fl. Zambes. 7(3): 119, fig. 7.3.144: 13 (p. 114), 2020. Typus: *Wild* 3912 (K).
- Ceropegia flavida** (Schlechter) M. G. Gilbert, Fl. Zambes. 7(3): 166-167, 2020. Basionym: *Brachystelma flavidum*.
- Ceropegia graminea** K. Suwannakote & Kidyoo, Kew Bull. 75(1: 15): 4-6, ills. (pp. 2, 4-5), 2020. Typus: *Kidyoo* 1621 (BKF, BCU).
- Ceropegia inornata** ssp. **zambiana** M. G. Gilbert, Fl. Zambes. 7(3): 150, fig. 7.3.150: 43 (p. 151), 2020. Typus: *Robinson* 5966 (K).
- Ceropegia leptotes** M. G. Gilbert, Fl. Zambes. 7(3): 133, fig. 7.3.146: 26 (p. 127), 2020. Typus: *Richards* 10700 (K).
- Ceropegia lugardiae** ssp. **zimbabweensis** M. G. Gilbert, Fl. Zambes. 7(3): 107, fig. 7.3.143: 1B (p. 108), 2020. Typus: *Monro* 1452 (BM). [Nom. nov. pro *Ceropegia distincta* fa. *pubescens* H. Huber 1957.]
- Ceropegia malawiensis** (Peckover) M. G. Gilbert, Fl. Zambes. 7(3): 171, 2020. Basionym: *Brachystelma malawiense*.
- Ceropegia marronina** Bruyns & Hanáček, Phytotaxa 441(2): 198, ills. (p. 197, 199), 2020. Typus: *Bruyns* 13247 (BOL, ETH).

- Ceropegia mucheveensis** M. G. Gilbert, Fl. Zambes. 7(3): 148, fig. 7.3.149: 41 (p. 142), 2020. Typus: *Carvalho* 602 (K, LMU).
- Ceropegia mwinilungensis** M. G. Gilbert, Fl. Zambes. 7(3): 138, fig. 7.3.147: 131 (p. 135), 2020. Typus: *Milne-Redhead* 4377 (K spirit 6714).
- Ceropegia phuchongensis** Kidyoo & K. Suwannakote, *Taiwania* 65(2): 104, 107, ill. (pp. 102-103, 105-106), 2020. Typus: *Kidyoo* 1570 (BKF, BCU).
- Ceropegia pseudorhynchantha** Bruyns, *Phytotaxa* 441(2): 199, ill. (pp. 197, 200), 2020. Typus: *Friis & al.* 2751 (ETH, K).
- Ceropegia robinsonii** M. G. Gilbert, Fl. Zambes. 7(3): 159, fig. 7.3.151: 53 (p. 161), 2020. Typus: *Robinson* 4306 (K).
- Ceropegia seminuda** (Lavranos) Al-Hashabi & Abdul Ghani, *Asklepios* 126: 18, ill. (p. 17, 19), 2020. Basionym: *Duvalia sulcata* var. *seminuda*.
- Ceropegia spatuliloba** M. G. Gilbert, Fl. Zambes. 7(3): 182, fig. 7.3.160: 83 (p. 185), 2020. Typus: *Torre & Pereira* 12702 (LISC).
- Ceropegia togoensis** (Schlechter) M. G. Gilbert, Fl. Zambes. 7(3): 189, fig. 7.3.160: 93 (p. 185) [March 2020], 2020. Basionym: *Brachystelma togoense*. [Repeated by Bruyns, *South Afr. J. Bot.* 132: 511, Aug. 2020.]
- Cynanchum doleriticum** Goyder, Fl. Zambes. 7(3): 342, 2020. Typus: *Leach & Chase* 10496 (K, SRGH).
- Dischidia phuphanensis** Chatan & Promprom, *PhytoKeys* 144: 24-26, ill., 2020. Typus: *Chatan* 2489 (BKF, BK).
- Heterostemma carnosum** Rodda, *Taiwania* 65(3): 326-328, ill., 2020. Typus: *Takeuchi* 11766 (A, LAE).
- Hoya gaoligongensis** M. X. Zhao & Y. H. Tan, *Phytotaxa* 459(3): 220, ill. (pp. 221-222), 2020. Typus: *Zhao & al.* XHS-GCS-0685 (KUN, HITBC).
- Hoya lamthanbiae** V. T. Pham & Kloppenburg, *Pakistan J. Bot.* 52(1): 291-293, ill. (pp. 292, 294), 2020. Typus: *FOP* 02/2016 (VNMN, HNU).
- Hoya longicalyx** Wang Hui & E. F. Huang, *Taiwania* 65(3): 354, ill. (pp. 356-357), 2020. Typus: *Huang* 1905003 (SZG, KUN, PE, TAI).
- Hoya nyingchiensis** Y. W. Zhuo & H. P. Deng, *Phytotaxa* 468(1): 130-133, ill., 2020. Typus: *Zuo & Lan* 542621150719680LY (SWCTU).
- Hoya peninsularis** Rodda & Zakaria, *Nordic J. Bot.* 38(10): e02854: 2-4, ill., 2020. Typus: *Dr. King's Collector* 4800 (BM, CAL, G, K).
- Hoya sulawesiana** S. Rahayu & Rodda, *Taiwania* 65(2): 210-211, ill., 2020. Typus: *Sambokaraeng* s.n. in *Rahayu* 1215 (BO).
- Pachypodium 'Surprise'** N. Rebmann, *Cact. Succ.* 12(1): 5, ill. (pp. 2, 4), 2020. [= *Pachypodium brevicaulis* × *P. densiflorum*, naturally occurring.]

ASPHODELACEAE

- Aloe ×eileeniae** Gideon F. Smith & Figueiredo, *Bradleya* 38: 84-87, ill. (pp. 86-88), 2020. Typus: *Smith* 1073 (PEU). [= *Aloe africana* × *A. ferox*.]
- Aloe ×engelbrechtii** Gideon F. Smith & Figueiredo, *Phytotaxa* 464(3): 253-254, ill., 2020. Typus: *Smith* 1110 (PRU). [= *Aloe arborescens* × *A. hardyi*.]
- Aloe iringaensis** Starha & Pavelka, *Cact. Succ. J. (Los Angeles)* 92(1): 17-18, ill. (pp. 16-19), 2020. Typus: *Specks* 21612 (PRC 455666) [Holotype ex cult. P. Pavelka.].
- Aloe ngutwaensis** T. Mwadime & Matheka, *CactusWorld* 38(3): 213-214, ill. (pp. 211-215), 2020. Typus: *Malombe & al.* 2273 (EA, K).
- Aloe rakotonasoloi** Rakotoarisoa, *Phytotaxa* 455(1): 43, ill. (p. 44), 2020. Typus: *Rakotonasolo* 2610 (TAN, K, P).
- Aloe ×retiefii** Gideon F. Smith, *Phytotaxa* 468(1): 150, 152-153, ill., 2020. Typus: *Smith* 1116 (PRU). [= *Aloe globuligemma* × *A. marlothii*.]
- Aloe trinervis** C. S. Purohit & al., *J. Asia-Pacific Biodivers.* 13(2): 329, ill. (pp. 327-328), 2020. Typus: *Kumar & al.* CAZRI/DBG/21 (BSJO, BSJO).
- Aloe vatovavensis** Rakotoarisoa, *Phytotaxa* 455(1): 41, ill. (p. 42), 2020. Typus: *Rakotoarisoa* 844 (TAN, K).

- Aloiampelos ciliaris** nvar. **gigas** (Resende) Gideon F. Smith & Figueiredo, *Haseltonia* 26: 38, ills., 2020. Basionym: *Aloe ciliaris* f. *gigas*. [Dated 30. Dec. 2019 on the inside cover, but only distributed 26. Feb. 2020.]
- ×**Aristaleria** R. Dee & J. M. H. Shaw, *Pl. Rev.* 2(3): 62, 2020. Incorrect name (ICN Art. H4.1). [Incorrect vs. ×*Aristeria* M. van der Meer 2019 with the same parentage.] [= *Aristaloe* × *Gasteria*.]
- ×**Aristampelos** Molteno, *Haworthiad* 34(1): 12, 2020. [= *Aristaloe* × *Aloiampelos*.]
- ×**Aristorthiopsis** R. Dee & J. M. H. Shaw, *Pl. Rev.* 2(3): 62, 2020. [= *Aristaloe* × *Haworthiopsis*.]
- Bulbine keiskammaensis** van Jaarsveld & al., *Bradleya* 38: 268, 271, ills., 2020. Typus: *van Jaarsveld & al.* 28271 (NBG).
- ×**Gasterampelos** Molteno, *Haworthiad* 34(1): 12, 2020. [= *Gasteria* × *Aloiampelos*.]
- Gasteria camillae** van Jaarsveld & Molteno, *Bradleya* 38: 23-24, ills. (pp. 21-24), 2020. Typus: *van Jaarsveld & Pienaar* 26672 (NBG).
- Gasteria visseri** van Jaarsveld, *Bradleya* 38: 26-28, ills., 2020. Typus: *van Jaarsveld* 28156 (NBG). [Sphalm. 'visseri'.]
- ×**Gonialoaloe** R. Dee & J. M. H. Shaw, *CactusWorld* 38(3): 234, 2020. *Nom. inval.* (ICN Art. H4.1). [Predated by ×*Alonialoe* M. van der Meer 2019.] [= *Gonialoe* × *Aloe*.]
- ×**Gonialoe desmetiana** (Baker) R. Dee & J. M. H. Shaw, *CactusWorld* 38(3): 234, 2020. Basionym: *Aloe* × *desmetiana*.
- Haworthiopsis** ×**coarctatoides** Resende & Viveiros ex Gideon F. Smith & Vasco Silva, *Bradleya* 38: 152, 2020. Typus: *Smith & Figueiredo* 81 (PRU). [= *Haworthiopsis coarctata* var. *coarctata* × *H. reinwardtii*. First published invalidly as *Haworthia coarctatoidea* by Resende & Viveiros, *Portug. Acta Biol. Sér. A* 3(3): 176, 181, 1948.]
- Haworthiopsis** ×**henriquesii** (Resende) Gideon F. Smith & Vasco Silva, *Haseltonia* 26: 48, 2020. Basionym: *Haworthia* × *henriquesii*. [Dated 30. Dec. 2019 on the inside cover, distributed only 26. Feb. 2020.]
- Haworthiopsis** ×**sampaiana** var. **broteriana** (Resende) Gideon F. Smith & Vasco Silva, *Haseltonia* 26: 49, 2020. Basionym: *Haworthia* × *broteriana*. [Dated 30. Dec. 2019 on the inside cover, distributed only 26. Feb.

- 2020.]
- ×**Kumaradendron** Molteno, *Haworthiad* 34(1): 12, 2020. [= *Kumara* × *Aloidendron*.]
- ×**Kumaraloe** Molteno, *Haworthiad* 34(1): 12, 2020. [= *Kumara* × *Aloe*.]

ASTERACEAE

- ×**Bacurio** Gideon F. Smith & Figueiredo, *Phytotaxa* 458(1): 117, 2020. [= *Baculellum* × *Curio*.]
- ×**Bacurio delphinatifolius** Gideon F. Smith & Figueiredo, *Phytotaxa* 458(1): 117, ills. (p. 116), 2020. Typus: *Smith* 1108 (PRU). [= *Baculellum articulatum* × *Curio rowleyanus*.]
- Othonna cerarioides** Magoswana & J. C. Manning, *Nordic J. Bot.* 38(3): e02588: 2-3, ills., 2020. Typus: *Hugo* 1214 (NBG, PRE).
- Othonna koos-bekkeri** van Jaarsveld, *Bradleya* 38: 225-228, ills., 2020. Typus: *van Jaarsveld & Combrink* 27729 (NBG).
- ×**Senecurio** Gideon F. Smith & Figueiredo, *Phytotaxa* 464(2): 185, 2020. [= *Senecio* × *Curio*.]
- ×**Senecurio kleiniiformis** (Suessenguth) Gideon F. Smith & Figueiredo, *Phytotaxa* 464(2): 185, ill. (p. 186), 2020. Basionym: *Senecio kleiniiformis*.

BROMELIACEAE

- Acanthostachys calcicola** Marcusso & Lombardi, *Phytotaxa* 472(2): 202, ills. (pp. 203-204), 2020. Typus: *Lombardi & al.* 10726 (HRCB, BHCB, MBM, PEUFR, RB, SP, SPF).
- Bakerantha hidalguensis** K. Romero & al., *J. Syst. Evol.* 60(1): 67-69, ills., 2020. Typus: *Hornung-Leoni & al.* 1389 (HGOM). [Sphalm. 'hidalguense'.]
- Cryptanthus univittatus** Leme, *Phytotaxa* 430(3): 165, ills. (p. 166), 2020. Typus: *Vasconcelos* s.n. in *Leme* 8654 (RB).
- Dyckia maranhensis** Guarçoni & Saraiva, *Syst. Bot.* 45(1): 48-49, ills. (pp. 50-51), 2020. Typus: *Guarçoni* 2666 (R).

Dyckia oscarii Guarçoni & M. A. Sartori, Phytotaxa 443(1): 42-43, ills. (pp. 42, 46, 48), 2020. Typus: *Guarçoni & Sartori* 2585 (VIC). [Sphalm. 'oscarii']

Encholirium anteroi P. J. Braun & al., Bromeliaceae 2020(1): 21, ills. (pp. 20, 23-24, 27), 2020. Typus: *Esteves Pereira* E345 (UFG 18.172).

Forzzaea coutensis Leme & O. B. C. Ribeiro, Phytotaxa 430(3): 168-170, ills., 2020. Typus: *Leme & al.* 9233 (RB).

Forzzaea flavipetala Leme & O. B. C. Ribeiro, Phytotaxa 430(3): 171, ills. (p. 172), 2020. Typus: *Leme & Ribeiro* 9085 (RB).

Forzzaea pseudomicra Leme & O. B. C. Ribeiro, Phytotaxa 430(3): 173, ills. (p. 174), 2020. Typus: *Leme & al.* 9231 (RB).

Forzzaea viridifolia Leme & O. B. C. Ribeiro, Phytotaxa 430(3): 175, ills. (p. 176), 2020. Typus: *Leme & al.* 9229 (RB).

Hechtia elegans Siekkinen & al., Syst. Bot. 45(3): 466-467, ills. (p. 468), 2020. Typus: *Siekkinen & Hernández-Cárdenas* 1472 (UAMIZ).

Hechtia esifolia Hernández-Cárdenas & al., Syst. Bot. 45(3): 469, ills. (p. 470), 2020. Typus: *Siekkinen & al.* 1438 (UAMIZ).

Hechtia medusae Hernández-Cárdenas & al., Syst. Bot. 45(3): 469-471, ills. (p. 472), 2020. Typus: *Siekkinen & al.* 1424 (UAMIZ, IBUG, MEXU).

Hechtia platyphylla Hernández-Cárdenas & al., Syst. Bot. 45(3): 471-473, ills., 2020. Typus: *Siekkinen & al.* 1450 (UAMIZ).

Hechtia pycnostachya Hernández-Cárdenas & al., Syst. Bot. 45(3): 473, ills. (p. 475), 2020. Typus: *Siekkinen & al.* 1415 (UAMIZ).

Hoplocryptanthus knegtianus O. B. C. Ribeiro & Leme, Phytotaxa 430(3): 177-179, ills., 2020. Typus: *Ribeiro* 451 in *Leme* 9322 (RB).

Orthophytum arcanum Leme, Phytotaxa 430(3): 191, ills. (p. 192), 2020. Typus: *Vasconcelos Leitão* s.n. in *Leme* 9093 (RB).

Orthophytum brejoense Leme & al., Phytotaxa 430(3): 182, ills. (p. 183), 2020. Typus: *Leme & al.* 9582 (RB, SEL).

Orthophytum cristaliense Leme, Phytotaxa 430(3): 193-194, ills. (p. 195), 2020. Typus: *Ilha* s.n. in *Leme* 9424 (RB).

Orthophytum gouveianum Leme & O. B. C. Ribeiro, Phytotaxa 430(3): 196, ills. (p. 197), 2020. Typus: *Leme & al.* 9244 (RB).

BURSERACEAE

Boswellia hesperia Thulin, Symb. Bot. Upsal. 39: 118, ills. (p. 119), 2020. *Nom. inval.* (ICN Art. 36.1a). [Published as provisional name.]

Boswellia samhaensis Thulin & Scholte, Symb. Bot. Upsal. 39: 105, ills. (pp. 106-108), 2020. Typus: *Scholte* 1151A (UPS).

Boswellia scopulorum Thulin, Symb. Bot. Upsal. 39: 102, ills. (pp. 103-104), 2020. Typus: *Miller & Alexander* 14028 (UPS, E).

CACTACEAE

Acanthocereus paradoxus González-Zamora & Dan. Sánchez, Phytotaxa 470(2): 146, ills. (pp. 147, 149-150), 2020. Typus: *González-Zamora* 07 (IBUG, MEXU).

×**Arthrocleistocactus** Mordhorst, Kakt. and. Sukk. 71(6): 180, 2020. [= *Arthrocerus* × *Cleistocactus*.]

Austrocactus bertinii ssp. **nobilis** (E. Sarnes & N. Sarnes) Guiggi, Cactology 5(Suppl. X): 1, 2020. Basionym: *Austrocactus nobilis*.

Austrocactus coxii ssp. **longicarpus** (E. Sarnes & N. Sarnes) Guiggi, Cactology 5(Suppl. VIII): 1, 2020. Basionym: *Austrocactus longicarpus*.

Austrocactus hibernus ssp. **robustior** E. Sarnes & N. Sarnes, Cact. Succ. J. (Los Angeles) 92(3): 226-227, ills. (pp. 227-228), 2020. Typus: *Sarnes & Sarnes* 18431 (MERL).

Austrocactus nobilis E. Sarnes & N. Sarnes, CactusWorld 38(3): 166-168, ills. (pp. 165-170), 2020. Typus: *Sarnes & Sarnes* 18601 (MERL 64272).

Austrocactus praecox E. Sarnes & N. Sarnes, Kakt. and. Sukk. 71(8): 228, ills. (pp. 225-229), 2020. Typus: *Sarnes & Sarnes* 18313 (MERL).

×**Austronotia** Sherrah, Cact. Explorer 26: 58, 2020. [= *Austrocylindropuntia* × *Punotia*.]

×**Austronotia batesii** Sherrah, Cact. Explorer 26: 57-60, ills., 2020. *Nom. inval.* (ICN Art. 36.1b, 40.1). [= *Austrocylindropuntia floccosa* × *Punotia lagopus*. Pulished as provisional name.]

- Browningia macracantha** (F. Ritter) Wittner, *Bradleya* 38: 57, ill. (pp. 52-57), 2020. Basionym: *Gymnanthocereus macracanthus*.
- ×**Chamaecereus** M. H. J. van der Meer, *Cact. Phantast.* 12(1): 1, 2020. [= *Chamaecereus* × *Haageocereus*.]
- Cleistocactus ritteri** Backeberg ex Guiggi, *Cactology* 5(Suppl. VII): 1, 2020. Typus: *Ritter* 325 loc. 1 (ZSS T4913). [First published invalidly by Backeberg (*Kakt. and. Sukk.* 10(11): 163, 1959), who cited the type to be a living plant in the collection of Karius, Muggensturm. Preserved material of the type collection was at the time already deposited at ZSS, but since this material was neither seen nor cited by Backeberg, the name was considered invalid by M. Lowry, *Bradleya* 34: 170, 2016. The attempt of Guiggi (*Cactology* 5(Suppl. 4): 1, 2017) to remedy the situation resulted in an invalidly (ICN Art. 40.4) published name.]
- ×**Cleistocana soniae** (Halda & al.) M. H. J. van der Meer, *Cact. Phantast.* 3(3): 27, 2019. Basionym: ×*Borkersia soniae*.
- Cochemia thomasi** García-Morales & al., *Acta Bot. Mex.* 127(e1626): 2-4, ill., 2020. Typus: *García-Morales & Linzen* 6226 (ITCV, CIDIIR, GBH, HFLA, IEB).
- Consolea testudinis-crus** (F. A. C. Weber) Mottram & Hoxey, *Cactician* 13: 73, 2020. Basionym: *Opuntia testudinis-crus*.
- Cumulopuntia dimorpha** (C. F. Förster) A. Pauca & Quipuscoa, *Darwiniana* n.s. 8(1): 345, ill. (p. 346), 2020. Basionym: *Opuntia dimorpha*.
- Cumulopuntia glomerata** (Pfeiffer) Hoxey, *Bradleya* 38: 118, ill. (pp. 117-118), 2020. Basionym: *Pereskia glomerata*.
- Cumulopuntia ignota** (Britton & Rose) F. Ritter ex A. Pauca & Quipuscoa, *Darwiniana* n.s. 8(1): 350, ill. (p. 351), 2020. Basionym: *Opuntia ignota*. [First published invalidly (ICN Art. 41.5) by F. Ritter, *Kakt. Südamer.* 4: 1250-1251, 1981, and erroneously included as valid in RPS 32.]
- Cumulopuntia unguispina** (Backeberg) F. Ritter ex A. Pauca & Quipuscoa, *Darwiniana* n.s. 8(1): 365, ill. (p. 366), 2020. Basionym: *Opuntia unguispina*. [First published invalidly (ICN Art. 41.5) by F. Ritter, *Kakt. Südamer.* 4: 1251, 1981, and erroneously included as valid in RPS 32.]
- Dendrocereus undulosus** ssp. **nudiflorus** (Engelmann ex C. Wright) Guiggi, *Cactology* 5(Suppl. IX): 2, 2020. Basionym: *Cereus nudiflorus*.
- Discocactus boliviensis** ssp. **ferricola** (Buining & Brederoo) Guiggi, *Cactology* 5(Suppl. VIII): 2, 2020. Basionym: *Discocactus ferricola*.
- Discocactus diersianus** ssp. **cephaliaciculosus** (Buining & Brederoo ex P. J. Braun & Esteves) Guiggi, *Cactology* 5(Suppl. VIII): 2, 2020. Basionym: *Discocactus cephaliaciculosus*.
- Discocactus diersianus** ssp. **nudicephalus** (P. J. Braun & Esteves) Guiggi, *Cactology* 5(Suppl. VIII): 2, 2020. Basionym: *Discocactus cephaliaciculosus* ssp. *nudicephalus*.
- Echinocactus** ×**diabolicus** (Halda & al.) Janeba, *Kaktusy (Brno)* 56(4): 134, ill. (p. 135), 2020. Basionym: *Echinocactus horizonthalonius* ssp. *diabolicus*. [= *Echinocactus horizonthalonius* × *E. platyacanthus*.]
- ×**Echinocana** Mordhorst, *Kakt. and. Sukk.* 71(10): 293, 2020. [= *Echinopsis* × *Matucana*.]
- Echinocereus acanthosetus** (S. Arias & U. Gumán) Gómez-Quintero & Dan. Sánchez, *Brittonia* 72(4): 446, fig. 5A-C (p. 444), 2020. Basionym: *Echinocereus pulchellus* var. *acanthosetus*.
- Echinocereus sharpii** (N. P. Taylor) Dan. Sánchez & Gómez-Quintero, *Brittonia* 72(4): 446, fig. 5G-I (p. 444), 2020. Basionym: *Echinocereus pulchellus* var. *sharpii*.
- Echinocereus weinbergii** ssp. **venustus** (W. Blum & W. Rischer) Gómez-Quintero & Dan. Sánchez, *Brittonia* 72(4): 449, fig. 5M-O (p. 444), 2020. Basionym: *Echinocereus pulchellus* ssp. *venustus*.
- Echinopsis* ×**multicolor** Mordhorst, *Hybriden-J.* 2020(3): 10, 2020. *Nom. inval.* (ICN Art. 36.1a, 39.2). [= *Lobivia maximiliana* × *Echinopsis subdenudata*. Published as provisional name.]
- Espostoa* subgen. *Thrixanthocereus* (Backeberg) Gorelick, *Haseltonia* 26: 58, 2020. *Nom. inval.* (ICN Art. 41.3). [Casually mentioned in abstract and text only. Dated 30. Dec. 2019 on the inside cover, but distributed only 26. Feb. 2020.]
- Espostoa* subgen. *Vatricania* (Backeberg) Gorelick, *Haseltonia* 26: 58, 2020. *Nom. inval.* (ICN Art. 41.3). [Casually mentioned in ab-

- stract and text only. Dated 30. Dec. 2019 on the inside cover, but distributed only 26. Feb. 2020.]
- Eulychnia iquiquensis** ssp. **taltalensis** (F. Ritter) Guiggi, *Cactology* 5(Suppl. VIII): 9, 2020. Basionym: *Eulychnia breviflora* var. *taltalensis*.
- Eulychnia saint-pieana** ssp. **tenuis** (F. Ritter) Guiggi, *Cactology* 5(Suppl. VIII): 9, 2020. Basionym: *Eulychnia breviflora* var. *tenuis*.
- ×**Feroleinia** M. H. J. van der Meer, *Cact. Phantast.* 12(1): 1, 2020. [= *Ferocactus* × *Kroenleinia*.]
- Frailea diersiana** Schädlich, *Kakt. and. Sukk.* 71(7): 199, ills. (pp. 197-198, 200-203), 2020. Typus: *Schädlich* 1893/2152 (WU 4040).
- Gymnanthocereus altissimus** ssp. **utubambensis** (Hutchison ex Wittner) Guiggi, *Cactology* 5(Suppl. VIII): 15, 2020. Basionym: *Browningia utubambensis*.
- Gymnocalycium castellanosi** var. **spinosior** Milt, *Cactaceae etc.* 30(2): 46-48, ills., 2020. Typus: *Milt* 868 (OLM B172329).
- Gymnocalycium ×elatum** Repka, *Gymnocalycium* 33(4): 1395-1397, ills. (pp. 1390-1398), 2020. Typus: *Repka* 804 (Herb. Fac. Ci. Forest. Univ. Santiago del Estero). [= *Gymnocalycium capillense* × *G. mostii* var. (given as ssp.) *immemoratum*; the name is incorrect under ICN H5.2 because it would have to be at the rank of nothovariety, but it is the correct name for the formula *G. capillense* × *G. mostii* (ICN Art. H5.2, Ex. 1).]
- Gymnocalycium megalothelon** ssp. **brasiliense** Prestlé, *Gymnocalycium* 33(1): 1363-1364, ill. (p. 1361), 2020. Typus: *Prestlé* 400-A (RB).
- Gymnocalycium netrelianum** ssp. **albidulum** Prestlé, *Gymnocalycium* 33(1): 1361-1362, ills. (pp. 1359-1360), 2020. Typus: *Prestlé* 705-A (MVM).
- Gymnocalycium netrelianum** ssp. **blanquilloense** Prestlé, *Gymnocalycium* 33(1): 1350, ills. (p. 1349), 2020. Typus: *Prestlé* 1047-A (MVM).
- Gymnocalycium netrelianum** ssp. **stramineum** Prestlé, *Gymnocalycium* 33(1): 1348-1350, ills. (p. 1347), 2020. Typus: *Prestlé* 1022-A (MVM).
- Gymnocalycium netrelianum** ssp. **tamborense** Prestlé, *Gymnocalycium* 33(1): 1348, ills. (p. 1346), 2020. Typus: *Amerhauser* 1536 (MVM).
- Gymnocalycium schickendantzii** ssp. **michoga** (Fric ex Y. Ito) H. Till & H. Amerhauser, *Gymnocalycium* 33(2): 1368, 2020. Basionym: *Gymnocalycium michoga*. [Based on *G. michoga* Fric 1929, which is usually regarded as invalid, but the valid publication place by Y. Ito in 1957 is also cited.]
- Gymnocalycium uruguayense** ssp. **aureiflorum** Prestlé, *Gymnocalycium* 33(1): 1357, ills. (pp. 1352, 1357), 2020. Typus: *Prestlé* 1047 (MVM). [Figures misnumbered in the original edition, corrected in replacement pages supplied with issue 3.]
- Gymnocalycium uruguayense** ssp. **bernabense** Prestlé, *Gymnocalycium* 33(1): 1354, ills. (pp. 1353-1354), 2020. Typus: *Prestlé* 1026 (MVM).
- Gymnocalycium uruguayense** ssp. **rionegronense** Prestlé, *Gymnocalycium* 33(1): 1353, 2020. Typus: *Prestlé* 1047-C (MVM).
- Gymnocalycium uruguayense** ssp. **schlosserianum** Prestlé, *Gymnocalycium* 33(1): 1355-1356, ills., 2020. Typus: *Amerhauser* 1519 (MVM).
- Gymnocalycium uruguayense** ssp. **topadorum** Prestlé, *Gymnocalycium* 33(1): 1355, ills. (pp. 1355-1356), 2020. Typus: *Prestlé* 1025 (MVM). [Figures misnumbered in the original edition, corrected in replacement pages supplied with issue 3.]
- Gymnocalycium volskyi** V. Gapon & al., *Kakt.-Klub* 4(2): 22, ills. (pp. 21-22, 25-26, 31), 2020. Typus: *Gapon* 18-1684/7859-10 (WU, WU).
- Gymnocalycium volskyi** ssp. **angulatum** (Prestlé) V. Gapon & al., *Kakt.-Klub* 4(2): 28, ills. (pp. 29, 31), 2020. Basionym: *Gymnocalycium denudatum* ssp. *angulatum*.
- ×**Haageocana** Mordhorst, *Kakt. and. Sukk.* 71(10): 293, 2020. [= *Haageocereus* × *Matucana*.]
- Harrisia fragrans** ssp. **aboriginum** (Small) Guiggi, *Cactology* 5(Suppl. VIII): 5, 2020. Basionym: *Harrisia aboriginum*.
- Islaya camanaensis** F. Cáceres, *Quad. Bot. Ambient. Appl.* 30: 34, ills. (pp. 34-36), 2020. Typus: *Cáceres & Baldárrago* 7323 (HUSA).

- Jasminocereus thouarsii** ssp. **howellii** (E. Y. Dawson) Guiggi, *Cactology* 5(Suppl. VIII): 12, 2020. Basionym: *Jasminocereus howellii*.
- Kadencarpus horripilus** var. **wrobelianus** (Nitzschke & Anaya Montes) Romulski, *Kakt. Inne* 12(1): 31, 2020. Basionym: *Turbincarpus horripilus* ssp. *wrobelianus*.
- Kadencarpus krainzianus** (Gerhart Frank) Romulski, *Kakt. Inne* 12(1): 31, ills. (pp. 30-31), 2020. Basionym: *Toumeyia krainziana*.
- Kadencarpus krainzianus** fa. **lausseri** (Diers & Gerhart Frank) Romulski, *Kakt. Inne* 12(1): 31, ills. (pp. 32-33), 2020. Basionym: *Turbincarpus pseudomacroleche* var. *lausseri*.
- Kadencarpus krainzianus** ssp. **minimus** (Gerhart Frank) Romulski, *Kakt. Inne* 12(1): 31, ills. (pp. 33-34), 2020. Basionym: *Turbincarpus krainzianus* fa. *minimus*.
- Leptocereus albellus** (Areces) D. Barrios & S. Arias, *Pl. Syst. Evol.* 306(3): 63: 12, 2020. Basionym: *Leptocereus assurgens* var. *albellus*. [Repeated by Guiggi, *Cactology* 5(Suppl. VIII): 5, 2020.]
- Leptocereus assurgens** ssp. **albellus** (Areces) Guiggi, *Cactology* 5(Suppl. IX): 2, 2020. Basionym: *Leptocereus assurgens* var. *albellus*.
- Leptocereus assurgens** ssp. **chrysotyrus** (Areces) Guiggi, *Cactology* 5(Suppl. IX): 2, 2020. Basionym: *Leptocereus chrysotyrus*.
- Leptocereus nudiflorus** (Engelmann ex C. Wright) D. Barrios & S. Arias, *Pl. Syst. Evol.* 306(3): 63: 12, 2020. Basionym: *Cereus nudiflorus*.
- Leptocereus undulosus** (De Candolle) D. Barrios & Majure, *Pl. Syst. Evol.* 306(3): 63: 12, 2020. Basionym: *Cereus undulosus*.
- ×**Liskeara** Mordhorst, *Kakt. and. Sukk.* 71(6): 180, 2020. [= *Arthrocerus* × *Cleistocactus* × *Echinopsis*.]
- Lobivia echinopsoides** (Diers & Jucker) Blaczkowski, *Swiat Kakt.* (Warsaw, 1966+) 54(1-2): 64, ills. (p. 65), 2020. *Nom. inval.* (ICN Art. 41.5), based on *Lobivia krahn-juckeri* ssp. *echinopsoides*.
- Lobivia haematantha** fa. **drijveriana** (Backeberg) M. H. J. van der Meer, *Cact. Phantast.* 11(2): 6, 2020. Basionym: *Lobivia drijveriana*.
- Loxanthocereus hoxeyi** ssp. **grandis** Hoxey, *Bradleya* 38: 18, ills. (pp. 16, 18), 2020. Typus: *Hoxey* & *Hoxey* 1271.01 (HUSA).
- Lymanbensonia choquequiranaensis** Hoxey, *Cact. Succ. J.* (Los Angeles) 92(3): 233-234, ills. (pp. 232-235), 2020. Typus: *Suelli* & *al.* 2311 (CUZ, ASU, HUT, MO, USM).
- Mammillaria brevipilumosa** García-Morales & al., *Phytotaxa* 452(3): 232, ills. (p. 233), 2020. Typus: *García-Morales* & *al.* 6344 (ITCV, CIIDIR, GBH, HFLA). [Also used as provisional name by Matuszewski, *Swiat Kakt.* 54(3): 5-8, ills., 2020.]
- Mammillaria geminata** ssp. **beiselii** (Diers) K. Rebmann, *CactusWorld* 38(4): 319, ill. (p. 320), 2020. Basionym: *Mammillaria beisei-lii*.
- Mammillaria geminata** ssp. **collinsii** (Britton & Rose) K. Rebmann, *CactusWorld* 38(4): 319, ill. (p. 320), 2020. Basionym: *Neomammillaria collinsii*.
- Mammillaria geminata** ssp. **nejapensis** (R. T. Craig & E. Y. Dawson) K. Rebmann, *CactusWorld* 38(4): 319, ill. (p. 320), 2020. Basionym: *Mammillaria nejapensis*.
- Mammillaria moelleriana** var. **cowperae** (Shurly) Romulski, *Kakt. Inne* 11(4): 135, ills. (pp. 134-135), 2020. Basionym: *Mammillaria cowperae*. [Dated 2019, publ. July 2020.]
- Mammillaria sanchez-mejoradae** ssp. **brevipilumosa** (García-Morales & al.) Guiggi, *Cactology* 5(Suppl. XI): 2, 2020. Basionym: *Mammillaria brevipilumosa*.
- Melocactus azureus** ssp. **krainzianus** (Buning & Brederoo) Guiggi, *Cactology* 5(Suppl. VIII): 2, 2020. Basionym: *Melocactus krainzianus*.
- Melocactus neoviridescens** Guiggi, *Cactology* 5(Suppl. X): 2, 2020. Typus: *Taylor* & *Zappi* s.n. in *Harley* 27400 (CEPEC, K, SPF). [*Nom. nov. pro Melocactus pachyacanthus* ssp. *viridis* N. P. Taylor 1991. First invalidly published as *Melocactus viridescens* Guiggi 2020 (*non Melocactus viridescens* (Torrey & A. Gray) Nuttall ex Teschemacher 1845).]
- Melocactus pachycephalus* N. P. Taylor, *Phytotaxa* 470(3): 256, ill. (p. 257), 2020. Based on *Taylor* & *Zappi* s.n. in *Harley* 27400. *Nom. illeg.* (ICN Art. 52.1). [Published 5. Nov. 2020. *Nom. nov. pro Melocactus pachyacanthus* ssp. *viridis* N. P. Taylor 1991.]

- First invalidly published as *Melocactus viridescens* Guiggi 2020 (*non Melocactus viridescens* (Torrey & A. Gray) Nuttall ex Teschemacher 1845), then validated as *Melocactus neoviridescens* Guiggi (published 1. Oct. 2020).]
- Melocactus viridescens* Guiggi, Cactology 5(Suppl. VIII): 3, 2020. Based on Taylor & Zappi s.n. in Harley 27400. *Nom. illeg.* (ICN Art. 53.1). [*Nom. nov. pro Melocactus pachyacanthus* ssp. *viridis* N. P. Taylor 1991. *Non Melocactus viridescens* (Torrey & A. Gray) Nuttall ex Teschemacher 1845. Subsequently validly published as *Melocactus neoviridescens* Guiggi 2020.]
- Melocactus zehntneri** ssp. **douradaensis** (Hovens & Strecker) P. J. Braun & Heimen, Kakt. and. Sukk. 71(4): 110, ills. (pp. 108-109), 2020. Basionym: *Melocactus douradaensis*.
- Mirabella estevesii** (P. J. Braun) Guiggi, Cactology 5(Suppl. VIII): 3, 2020. Basionym: *Cereus estevesii*.
- Neoabbottia quadricostata** (Bello) Guiggi, Cactology 5(Suppl. IX): 3, 2020. Basionym: *Cereus quadricostatus*.
- Neoabbottia weingartiana** (E. Hartmann) Guiggi, Cactology 5(Suppl. IX): 3, 2020. Basionym: *Cereus weingartianus*.
- Neodawsonia apiccephalum** ssp. **totolapensis** Guiggi, Cactology 5(Suppl. XD): 2-3, ill., 2020. Typus: Arias 2182 (MEXU). [First published invalidly as attempted combination for *Neodawsonia totolapensis* Bravo & T. Macdougall 1959 (*nom. inval.*, ICN Art. 40.1) in l.c. 5(Suppl. VIII): 14, 2020.]
- Notocactus acutus* var. *lourengoensis* H. Henssen, Internoto 41(2): 46-48, ills., 2020. *Nom. inval.* (ICN Art. 39.2, 40.1). [Used as provisional name.]
- Notocactus nigroleptacanthus* Prestlé ex W. R. Abraham, Internoto 41(1): 4-7, ills., 2020. *Nom. inval.* (ICN Art. 36.1b). [Used as provisional name.]
- Opuntia austrina** ssp. **abjecta** (Small ex Britton & Rose) Guiggi, Cactology 5(Suppl. VIII): 16, 2020. Basionym: *Opuntia abjecta*.
- Opuntia galapageia** ssp. **helleri** (K. Schumann) Guiggi, Cactology 5(Suppl. VIII): 11, 2020. Basionym: *Opuntia helleri*.
- Opuntia galapageia** ssp. **insularis** (A. Stewart) Guiggi, Cactology 5(Suppl. VIII): 11, 2020. Basionym: *Opuntia insularis*.
- Opuntia galapageia** ssp. **megasperma** (J. T. Howell) Guiggi, Cactology 5(Suppl. VIII): 11, 2020. Basionym: *Opuntia megasperma*.
- Opuntia galapageia** ssp. **myriacantha** (F. A. C. Weber) Guiggi, Cactology 5(Suppl. VIII): 11, 2020. Basionym: *Opuntia myriacantha*. [The typification details given l.c. are incorrect.]
- Opuntia galapageia** ssp. **zacana** (J. T. Howell) Guiggi, Cactology 5(Suppl. VIII): 12, 2020. Basionym: *Opuntia zacana*.
- Opuntia humifusa** ssp. **mesacantha** (Rafinesque) Guiggi, Cactology 5(Suppl. VIII): 16, 2020. Basionym: *Opuntia mesacantha*.
- Opuntia polyacantha** fa. **trichophora** (Engelmann & J. T. Bigelow) Guiggi, Cactology 5(Suppl. VIII): 17, 2020. Basionym: *Opuntia missouriensis* var. *trichophora*.
- Opuntia polyacantha** ssp. **arenaria** (Engelmann) Guiggi, Cactology 5(Suppl. VIII): 16, 2020. Basionym: *Opuntia arenaria*.
- Opuntia polyacantha** ssp. **hystricina** (Engelmann & J. T. Bigelow) Guiggi, Cactology 5(Suppl. VIII): 17, 2020. Basionym: *Opuntia hystricina*.
- Opuntia polyacantha** var. **rhodantha** (K. Schumann) M. van der Meer, Cact. Phantast. 11(1): 1, 2020. Basionym: *Opuntia rhodantha*.
- Parodia diersiana** Jucker, Kakt. and. Sukk. 71(9): 261, ills. (pp. 260, 262-268), 2020. Typus: Jucker 1202 (LPB, WU).
- Parodia roseolutea** (van Vliet) Hofacker & al., Kakt. and. Sukk. 71(11): 344, ills. (pp. 342-343), 2020. Basionym: *Notocactus roseoluteus*.
- Philippicereus acidus** (Philippi) Guiggi, Cactology 5(Suppl. VIII): 9, 2020. Basionym: *Eulychnia acida*.
- Philippicereus chorosensis** (P. Klaassen) Guiggi, Cactology 5(Suppl. VIII): 9, 2020. Basionym: *Eulychnia chorosensis*.
- Philippicereus elatus** (F. Ritter) Guiggi, Cactology 5(Suppl. VIII): 9, 2020. Basionym: *Eulychnia acida* var. *elata*.
- Philippicereus vallenarensis** (P. C. Guerrero & Helmut Walter) Guiggi, Cactology 5(Suppl. VIII): 10, 2020. Basionym: *Eulychnia vallenarensis*.

- Pilosocereus chrysolepis** ssp. **catimbauensis** N. P. Taylor & Albuquerque-Lima, Bradleya 38: 243, ill. (pp. 242-243), 2020. Typus: *Albuquerque de Lima* 50 (UFP).
- Pilosocereus jauensis** ssp. **cincinnotal** P. J. Braun & al., Kakt. and. Sukk. 71(3): 75, ill. (pp. 73-75), 2020. Typus: *Esteves Pereira* 7 p.p. (UFG, B, ZSS).
- Pilosocereus pachycladus** ssp. **albisummus** (P. J. Braun & Esteves) Guiggi, Cactology 5(Suppl. XI): 1, 2020. Basionym: *Pilosocereus albisummus*.
- Pilosocereus pachycladus** ssp. **viridis** N. P. Taylor & Albuquerque-Lima, Bradleya 38: 242, ill. (p. 241), 2020. Typus: *Albuquerque de Lima* 52 (UFP).
- Pilosocereus pernambucoensis** ssp. **viridis** (N. P. Taylor & Albuquerque-Lima) Guiggi, Cactology 5(Suppl. VIII): 3, 2020. Basionym: *Pilosocereus pachycladus* ssp. *viridis*.
- Pilosocereus polygonus** ssp. **curtisii** (Otto ex Pfeiffer) Guiggi, Cactology 5(Suppl. VIII): 5, 2020. Basionym: *Cereus curtisii*.
- Pilosocereus polygonus** ssp. **gaumeri** (Britton & Rose) Guiggi, Cactology 5(Suppl. VIII): 6, 2020. Basionym: *Cephalocereus gaumeri*.
- Pilosocereus polygonus** ssp. **jamaicensis** (Proctor ex A. R. Franck & al.) Guiggi, Cactology 5(Suppl. VIII): 6, 2020. Basionym: *Pilosocereus jamaicensis*.
- Pilosocereus robinii** ssp. **keyensis** (Britton & Rose) Guiggi, Cactology 5(Suppl. VIII): 6, 2020. Basionym: *Cephalocereus keyensis*.
- Pilosocereus robinii** ssp. **millspaughii** (Britton) Guiggi, Cactology 5(Suppl. VIII): 7, 2020. Basionym: *Cephalocereus millspaughii*.
- Pilosocereus royenii** ssp. **brooksianus** (Britton & Rose) Guiggi, Cactology 5(Suppl. VIII): 7, 2020. Basionym: *Cephalocereus brooksianus*.
- Pilosocereus zappiae** Lavor & Calvente, PlantNow 1(2): 64, 2020. Typus: *Taylor & Zappi* s.n. in *Harley* 25544 (SPF, CEPEC, K). [Nom. nov. pro *Pilosocereus pentaedrophorus* ssp. *robustus* Zappi 1994.]
- Rebutia gavazzii** ssp. **gertii** V. Gapon, Kakt.-Klub 4(2): 76, ill. (pp. 77, 79), 2020. Typus: *Gapon* 13-140a/5756-3 (WU).
- Rhipsalis parasitica** ssp. **cleistogama** (M. Kessler & al.) Guiggi, Cactology 5(Suppl. X): 3, 2020. Basionym: *Rhipsalis baccifera* ssp. *cleistogama*.
- Rhipsalis parasitica** ssp. **erythrocarpa** (K. Schumann) Guiggi, Cactology 5(Suppl. X): 3, 2020. Basionym: *Rhipsalis erythrocarpa*.
- Rhipsalis parasitica** ssp. **hileiabaiana** (N. P. Taylor & Barthlott) Guiggi, Cactology 5(Suppl. X): 3, 2020. Basionym: *Rhipsalis baccifera* ssp. *hileiabaiana*.
- Rhipsalis parasitica** ssp. **horrida** (Baker) Guiggi, Cactology 5(Suppl. X): 3, 2020. Basionym: *Rhipsalis horrida*.
- Rhipsalis parasitica** ssp. **mauritanica** (De Candolle) Guiggi, Cactology 5(Suppl. X): 3, 2020. Basionym: *Rhipsalis cassutha* var. *mauritanica*.
- Rhipsalis parasitica** ssp. **shaferi** (Britton & Rose) Guiggi, Cactology 5(Suppl. X): 4, 2020. Basionym: *Rhipsalis shaferi*.
- Selenicereus costaricensis** (F. A. C. Weber) S. Arias & N. Korotkova ex Hammel, Monogr. Syst. Bot. Missouri Bot. Gard. 138: 283, 2020. Basionym: *Cereus trigonus* var. *costaricensis*. [First published invalidly (ICN Art. 41.5, cf. RPS 68) by S. Arias & N. Korotkova, Phytotaxa 327(1): 25, 2017. Combination repeated by S. Arias & N. Korotkova, Willdenowia 51(2): 565, 2021.]
- Strophocactus krammii** Ostolaza & al., Quepo 34: 9-10, ill. (pp. 10-11, 13-14), 2020. Basionym: *Strophocactus wittii* ssp. *erici*. [Given as "sp. nov." complete with holotype citation and Latin diagnosis, but with "Kramm" as bracket author and a reference to the replaced synonym, and therefore interpreted as replacement name. First published invalidly (ICN Art. 38.1a) in l.c. 30: 27-33, ill., 2016 (cf. RPS 67). Cited from the digital preprint of the journal, uploaded Dec. 2020.]
- Sulcorebutia anahuaniensis** Horáček & Magelano ex Horáček, Sulcorebutia 2020, 5-6, ill. (p. 4), 2020. Typus: *Horáček* 2458 (LPB).
- Sulcorebutia canigeralii** ssp. **brevispina** (F. H. Brandt) Horáček, Sulcorebutia 2020, 10, ill. (p. 11), 2020. Basionym: *Weingartia brevispina*. [Bracket author erroneously given as "Pilbeam ex Rausch".]
- Sulcorebutia cantarhuyaconi* Horáček, Sulcorebutia 2020, 11-13, ill., 2020. Based on *Horáček* 2072. *Nom. inval.* (ICN Art. 36.1b). [Published as provisional name.]

- Sulcorebutia crispata** ssp. **rebutioides** P. Lechner, *Succulenta* (Netherlands) 99(3): 108, ill. (p. 109), 2020. Typus: *Lechner* 20.037 (LPB, WU). [First published invalidly (ICN Art. 40.7, but erroneously reported as valid in RPS 66) l.c. 93(3): 86, ill., 2015 [page footer erroneously as "93(3), 2014"].]
- Sulcorebutia crispata* ssp. *weberi* Horáček, *Sulcorebutia* 2020, 15-16, ill., 2020. Based on *Horáček* 1644. *Nom. inval.* (ICN Art. 38.1a, 40.7). [Sphalm. 'weberii'. Given as "comb. nov."]
- Sulcorebutia gigantea** (Halda & al.) Horáček, *Sulcorebutia* 2020, 17, ill. (p. 18), 2020. Basionym: *Sulcorebutia purpurea* ssp. *gigantea*.
- Sulcorebutia hillmannii** Horáček & Megarejo ex Horáček, *Sulcorebutia* 2020, 21-22, ill. (p. 20), 2020. Typus: *Horáček* 2138 (LPB). [Sphalm. 'hillmannii' but named for Ralph Hillmann.]
- Sulcorebutia huanacuniensis** (Gertel) Horáček, *Sulcorebutia* 2020, 24, ill. (p. 25), 2020. Basionym: *Sulcorebutia tiraquensis* var. *huanacuniensis*.
- Sulcorebutia intermedia* P. Lechner, *Echinopsen* 17(1): 118-119, ill. (pp. 119-121), 2020. *Nom. inval.* (ICN Art. 29.2, 36.1b). [Published as provisional name.]
- Sulcorebutia nadae* (Halda & al.) Horáček, *Sulcorebutia* 2020, 33-34, ill., 2020. *Nom. inval.* (ICN Art. 41.5), based on *Sulcorebutia purpurea* ssp. *nadae*. [Given as "stat. nov."; the basionym name and authors are given on p. 81, but the reference to the basionym is unclear and given in the form "12(9)", indicating volume and issue number (as in other references in this book), without page reference, but "9" in fact would have been the correct page reference.]
- Sulcorebutia nadae* ssp. *ahaycomaensis* Horáček & Megarejo ex Horáček, *Sulcorebutia* 2020, 35-36, ill., 2020. Based on *Horáček* 2439. *Nom. inval.* (ICN Art. 35.1).
- Sulcorebutia steinbachii* ssp. *radkae* Horáček, *Sulcorebutia* 2020, 47-48, ill., 2020. *Nom. inval.* (ICN Art. 36.1b, 39.2). [Published as provisional name.]
- Sulcorebutia tarabucoensis** ssp. **hermosana** Horáček & Megarejo ex Horáček, *Sulcorebutia* 2020, 49-50, ill., 2020. Typus: *Horáček* 2022 (LPB).
- Sulcorebutia torancaniana** Horáček & Megarejo ex Horáček, *Sulcorebutia* 2020, 56-57, ill., 2020. Typus: *Horáček* 2034 (LPB).
- Weingartia neumanniana** ssp. **amerhauseri** (K. Augustin) Slaba, *Kaktusy* (Brno) 56(Speciál 2): 21, ill. (p. 22-23), 2020. Basionym: *Weingartia fidana* ssp. *amerhauseri*.
- Weingartia neumanniana** ssp. **dagmariana** Slaba & al., *Kaktusy* (Brno) 56(Speciál 2): 25, ill. (p. 24-26), 2020. Typus: *Slaba* 140-5 (PRC 455767).
- Weingartia neumanniana** ssp. **pygmaea** (F. Ritter) Slaba, *Kaktusy* (Brno) 56(Speciál 2): 19, ill. (p. 20), 2020. Basionym: *Weingartia pygmaea*.
- Weingartia skrovanii** Horáček & Megarejo ex Horáček, *Sulcorebutia* 2020, 64-65, ill., 2020. Typus: *Horáček* 2300 (LPB).
- ×**Wessnerara** Mordhorst, *Kakt. and. Sukk.* 71(6): 180, 2020. [= *Cleistocactus* × *Matucana* × *Haageocereus*.]
- Wigginsia gladiata** V. Gapon & Ponomareva, *Kakt.-Klub* n.s. 4(1): 7, ill., 2020. Typus: *Gapon* 15-1424/6553 (WU, WU). [Given with the authorship "(Prestlé & Sida) ex V. Gapon et Ponomareva" in an attempt to publish a combination for the invalidly published name *Notocactus gladius* Prestlé & Sida, but to be treated as validly published new name. German translation published in *Internoto* 42(1): 5-6, ill., 2021.]
- ×**Xhonneuxara** M. H. J. van der Meer, *Cact. Phantast.* 12(1): 1, 2020. [= *Coryphantha* × *Ferocactus* × *Leuchtenbergia*.]
- Xiquexique** Lavor & al., *PlantNow* 1(2): 62, 2020. Typus: *Pilosocereus gounellei* F. A. C. Weber ex K. Schumann. [*Nom. nov. pro Pilosocereus* subgen. *Gounellea* Zappi 1994.]
- Xiquexique frewenii** (Zappi & N. P. Taylor) Lavor & Calvente, *PlantNow* 1(2): 64, 2020. Basionym: *Pilosocereus frewenii*. [Repeated by Zappi & N. P. Taylor, *Phytotaxa* 470(3): 256, ill. (p. 257), 2020, on the erroneous assumption that the combination by Lavor & Calvente is invalid under ICN Art. 41.5 (cf. Versieux & Calvente, *Phytotaxa* 521(2): 121-122, 2021).]
- Xiquexique gounellei** (F. A. C. Weber ex K. Schumann) Lavor & Calvente, *PlantNow* 1(2): 63, 2020. Basionym: *Pilosocereus gounellei*.

Xiquexique gounellei ssp. **zehntneri** (Britton & Rose) Lavor & Calvente, *PlantNow* 1(2): 63, 2020. Basionym: *Cephalocereus zehntneri*.

Xiquexique tuberculatus (Werdermann) Lavor & Calvente, *PlantNow* 1(2): 64, 2020. Basionym: *Pilocereus tuberculatus*.

CRASSULACEAE

Cotyledon tanquana van Jaarsveld, *Haseltonia* 26: 5, ills. (pp. 2-5), 2020. Typus: *van Jaarsveld* 13576 (NBG). [Dated 30. Dec. 2019 on the inside cover but only distributed 26. Feb. 2020.]

Crassula ‘Thrashula’ Thrasher, *CactusWorld* 38(3): 194, ill., 2020. [= *Crassula ausensis* × *C. deceptor*.]

Echeveria cojitambensis Pino & Kabir Montesinos, *Cact. Succ. J. (Los Angeles)* 92(1): 28-31, ills., 2020. Typus: *Montesinos* 001 (QCA).

Echeveria coppii Moran ex Gideon F. Smith & Bischofberger, *Bradleya* 38: 71-74, ills., 2020. Typus: *Breedlove* s.n. in *Moran* 14823 (SD).

Echeveria quitensis var. **cuencaensis** Pino & Kabir Montesinos, *Cact. Succ. J. (Los Angeles)* 92(1): 24-27, ills., 2020. Typus: *Rose* & *Pachano* 22941 (US).

Echeveria tabaconasensis Pino & Novoa, *Cact. Succ. J. (Los Angeles)* 92(1): 31-33, ills., 2020. Typus: *Novoa Sheppard* 001 (USM).

Hylotelephium notarjannii (Tenore) Bischofberger, *Newslett. Sedum Soc.* 136: 11, 2020. Basionym: *Sedum notarjannii*. [Sphalm. ‘notarjanni’.]

Kalanchoe Sect. **Stellatopilosae** (A. Berger) Gideon F. Smith, *Phytotaxa* 468(2): 234, 2020. Basionym: *Kalanchoe* [?] *Stellatopilosae*.

Kalanchoe brevicealyx (Raymond-Hamet & H. Perrier) Gideon F. Smith & Figueiredo, *Phytotaxa* 450(2): 244, 2020. Basionym: *Kalanchoe pinnata* var. *brevicalyx*. [First published invalidly (ICN Art. 41.5, cf. RPS 46) by Boiteau ex L. Allorge, *Kalanchoe Madagascar*, 133, 1995.]

Kalanchoe ×**edwardii** Gideon F. Smith & Shtein, *Phytotaxa* 475(2): 120-121, ills. (p. 118), 2020. Typus: *Smith* 1127 (PRU). [= *Kalanchoe beharensis* × *K. tomentosa*, spontaneous hybrid originating in cultivation.]

Kalanchoe ×**estrelae** Gideon F. Smith, *Phytotaxa* 441(2): 225-227, ills., 2020. Typus: *Smith* 1101 (PRU). [= *Kalanchoe luciae* × *K. sexangularis*, spontaneous hybrid originating in cultivation.]

Kalanchoe ×**gildenhuysii** Gideon F. Smith & Figueiredo, *Phytotaxa* 442(1): 43-45, ills., 2020. Typus: *Smith* 1090 (PRU). [= *Kalanchoe millotii* × *K. tomentosa*, spontaneous hybrid originating in cultivation.]

Kalanchoe ×**hankeyi** Gideon F. Smith, *Phytotaxa* 451(1): 93-95, ills., 2020. Typus: *Smith* 1099 (PRU). [= *Kalanchoe longiflora* × *K. sexangularis*, spontaneous hybrid originating in cultivation.]

Kalanchoe ×**hummeliae** Gideon F. Smith, *Bradleya* 38: 91, ills. (pp. 90-92), 2020. Typus: *Smith* 1097 (PRU). [= *Kalanchoe beharensis* × *K. millotii*, spontaneous hybrid originating in cultivation.]

Orostachys japonica var. **erubescens** Jankalski, *Newslett. Sedum Soc.* 133: 74, 2020. Typus: *Furuse* 733 (K, E). [*Nom. nov. pro Orostachys erubescens* sensu Ohwi, *Fl. Japan*, 586, 1953.]

Orostachys japonica var. **polycephala** (Makino) Jankalski, *Newslett. Sedum Soc.* 133: 74, 2020. Basionym: *Cotyledon polycephala*.

Orostachys limuloides (Praeger) Jankalski, *Newslett. Sedum Soc.* 133: 75, ill., 2020. Basionym: *Sedum limuloides*.

Orostachys malacophylla var. **genkaiensis** (Ohwi) Jankalski, *Newslett. Sedum Soc.* 133: 74, 2020. Basionym: *Orostachys genkaiensis*.

Pachyphytum huastecanum J. Reyes & al., *Cact. Succ. J. (Los Angeles)* 92(2): 142-144, ills., 2020. Typus: *Etter* & *Kristen* 4185 (MEXU).

Pachyphytum viscidum J. Reyes & L. E. Cruz-López, *Haseltonia* 26: 17, ills. (pp. 18-20), 2020. Typus: *Reyes Santiago* & *Brachet* 5043 (MEXU). [Dated 30. Dec. 2019 on the inside cover but only distributed 26. Feb. 2020.]

Phedimus middendorffianus var. **diffusus** (Praeger) L. Gallo, Forum Geobot. 9: 70, ill. (p. 71), 2020. Basionym: *Sedum middendorffianum* var. *diffusum*.

Phedimus spurius ssp. **oppositifolius** (Sims) L. Gallo, Forum Geobot. 9: 71, ill. (p. 72), 2020. Basionym: *Sedum oppositifolium*.

Phedimus yangshanicus Z. Chao, Phytotaxa 429(2): 153-154, ill. (pp. 152-153), 2020. Typus: *Zhi* 2019040601 (SMU).

Rhodiola humilis var. **jialiensis** Hao Wang & al., Acta Bot. Boreal.-Occid. Sin. 40(1): 175, 2020. Typus: *Lan* 542422140805227LY (SWNTU).

×**Sedeveria** ‘Green Bells’ T. Bolliger, Kakt. and. Sukk. 71(7): 195, ill. (pp. 193, 195), 2020. [= *Sedum incarum* × *Echeveria* sp. (*E. agavoides* or *E. xpulchella*).]

×**Sedeveria mauroi** L. Gallo & al., Bradleya 38: 190, ill. (pp. 190-192), 2020. Typus: *Merli* s.n. (ROV). [= *Echeveria agavoides* × *Sedum pachyphyllum* cf.]

Sedum formosanum ssp. **miyakojimense** Takuro Ito & al., PhytoKeys 148: 65-67, ill. (pp. 61, 66), 2020. Typus: *Takuro Ito* 2402 (TNS).

Sedum hutchisonii Kimmach & J. E. Low ex Pino & Cieza, Cact. Succ. J. (Los Angeles) 92(4): 294-296, ill. (pp. 292-297), 2020. Typus: *Hutchison & al.* 6621 (UC).

Sedum kamtschaticum fa. **diffusum** (Praeger) Groendijk-Wilders & Springate ex J.M.H.Shaw, Newslett. Sedum Soc. 135: 126, 2020. Basionym: *Sedum middendorffianum* var. *diffusum*. [First used invalidly in European Garden Flora 4: 192, 1995.]

Sedum nanlingense Yan Liu & C. Y. Zou, Phytotaxa 447(3): 183, ill. (pp. 181-182), 2020. Typus: *Anonymus* s.n. (IBK).

Sedum versadense ssp. **chontalense** (Alexander) Jankalski, Newslett. Sedum Soc. 136: 14, 2020. Basionym: *Sedum chontalense*.

Sedum versadense ssp. **villadioides** (Kimmach) Jankalski, Newslett. Sedum Soc. 136: 15, 2020. Basionym: *Sedum versadense* var. *villadioides*.

×**Semponium** D. Michael, CactusWorld 38(1): 30, 2020. [= *Sempervivum* × *Aeonium*.]

×**Semponium** ‘Sienna’ D. Michael, CactusWorld 38(1): 30, ill., 2020. [= *Aeonium* ‘Ice Warrior’ (male) × *Sempervivum* ‘Green Ice’.]

Sinocrassula papillosa Jankalski, Newslett. Sedum Soc. 133: 77, 2020. Typus: *Smith* 4803 (GB).

Sinocrassula papillosa var. **spinulosa** (H. Ohba & al.) Jankalski, Newslett. Sedum Soc. 133: 78, 2020. Basionym: *Sinocrassula paoshingensis* var. *spinulosa*.

Sinocrassula serrata (Raymond-Hamet) Jankalski, Newslett. Sedum Soc. 133: 78, 2020. Basionym: *Sedum indicum* var. *serratum*.

Umbilicus tropaeolifolius ssp. *zalamicus* Sardar & al., Ann. Oradea Univ. Biol. Fasc. 27(1): 93-94, ill., 2020. Based on *Anonymus* 7823. *Nom. inval.* (ICN Art. 40.7). [Sphalm. ‘zalamica’.]

EUPHORBIAEAE

Euphorbia andrebesoana Rebmman, Cact. Succ. 12(1): 21-22, ill. (pp. 21, 23-24), 2020. Typus: *Rebmman* 34 (TAN).

Euphorbia betrokana J. P. Castillon & J. B. Castillon, Euphorbia World 16(3): 12, ill., 2020. Typus: *Rauh* M1464 (HEID). [*Nom. nov. pro Euphorbia milii* var. *longifolia* Rauh 1967 (non *E. longifolia* Gueldenstaedt 1787 nec *E. longifolia* Lamarck 1788).]

Euphorbia buqensis Mazuch & al., Euphorbia World 16(3): 57-59, ill., 2020. Typus: *Mazuch* s.n. (HAR).

Euphorbia clivicola ssp. **calcritica** Bruyns, Phytotaxa 436(3): 207, fig. 1H (p. 204), 2020. Typus: *Bruyns* 12045 (BOL).

Euphorbia leboana L. C. Leach ex Alma Möller & R. Becker, Field Guide Succ. Euphorbias South. Afr., 289, ill., 2020. *Nom. inval.* (ICN Art. 40.1). [Used as provisional name only.]

Euphorbia milii var. **imperatae** Leandri ex J.-P. Castillon & J.-B. Castillon, Euphorbia World 16(3): 10, ill., 2020. Typus: *Decary* 3863 (P). [Explicitly described as new variety, citing the earlier nude name from 1946 etc. in synonymy.]

Euphorbia otjipembana ssp. **fluvialis** (L. C. Leach) Bruyns, Phytotaxa 436(3): 210, 2020. Basionym: *Euphorbia subsalsa* ssp. *fluvialis*.

Euphorbia pisina Bruyns, *Phytotaxa* 436(3): 210-211, ills., 2020. Typus: *Bruyns* 6607 (BOL, MO). [Sphalm. 'pisima', but correctable since the epithet is explained to refer specifically to the pea-green branches.]

Euphorbia pseudocontorta Bruyns, *Phytotaxa* 433(4): 299, ills., 2020. Typus: *Bruyns* 7795 (BOL, NBG).

Euphorbia ramiglans var. **confluens** (Nel) van Veldhuisen, *Euphorbia World* 16(1): 30, ills. (pp. 29-30), 2020. Basionym: *Euphorbia confluens*.

Euphorbia roseana (Marnier-Lapostolle ex Demoly) J.-P. & J.-B. Castillon, *Euphorbia World* 16(3): 11, ills., 2020. Basionym: *Euphorbia milii* var. *roseana*.

Euphorbia schinzii ssp. **bechuanica** (L. C. Leach) Bruyns, *Phytotaxa* 436(3): 214, ills. (p. 215), 2020. Basionym: *Euphorbia malevola* ssp. *bechuanica*.

Euphorbia schinzii ssp. **schinzioides** Bruyns, *Phytotaxa* 436(3): 215, ill., 2020. Typus: *Prosser* 1011 (NBG, BM, K, PRE).

Euphorbia splendens var. **andranovelonana** J.-P. Castillon & J.-B. Castillon, *Euphorbia World* 16(3): 14-15, ills., 2020. Typus: *Rabarijoana* 43 (TAN, MO, P).

Euphorbia splendens var. **breonii** Leandri ex J.-P. Castillon & J.-B. Castillon, *Euphorbia World* 16(3): 24, ill., 2020. Typus: *Perrier* 18577 (P). [Explicitly described as new variety, citing the earlier nude name from 1946 etc. in synonymy.]

Euphorbia splendens var. **tanamarivae** Leandri ex J.-P. Castillon & J.-B. Castillon, *Euphorbia World* 16(3): 16, ill., 2020. Typus: *Perrier* 18576 (P). [Explicitly described as new variety, citing the earlier nude name from 1946 etc. in synonymy.]

Euphorbia splendens var. **vulcanii** Leandri ex J.-P. Castillon & J.-B. Castillon, *Euphorbia World* 16(3): 17, ills., 2020. Typus: *Decary* 13797 (P). [Sphalm. 'vulcani'. Explicitly described as new variety, citing the earlier nude name from 1946 etc. in synonymy.]

Euphorbia steelpoortensis Bruyns, *Phytotaxa* 436(3): 216-217, ill., 2020. Typus: *Nel* 337 (NBG). [Name first used in manuscript by L. C. Leach, and as provisional name by Möller & Becker, *Field Guide Succ. Euphorbias* South. Africa, 288, ills., 2020 ('2019').]

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Eliokarmos richtersveldensis (van Jaarsveld) Martínez-Azorín & al., *Phytotaxa* 474(1): 91, 2020. Basionym: *Ornithogalum richtersveldense*. [Sphalm. 'richtersveldense'.]

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Massonia Sect. **Whiteheadia** (Harvey) J. C. Manning, *Bothalia* 51(1: a5): 1, 2020. Basionym: *Whiteheadia*. [First published invalidly (ICN Art. 41.6, cf. RPS 70) in *South Afr. J. Bot.* 121: 332, 2018 (e-published, print 2019).]

Merwillineae J. C. Manning, *S. African J. Bot.* 133: 99, 2020. Typus: *Merwillia* Speta.

Vera-duthiea zambesiaca (Baker) N. R. Crouch & Martínez-Azorín, *Phytotaxa* 470(3): 261, 2020. Basionym: *Urginea zambesiaca*.

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Medinilla ultramacicola Quakenbush & al., *Syst. Bot.* 45(4): 868, ills. (pp. 869-870), 2020. Typus: *Camangeg & Bustamante* 1 (PNH, FEUH, PPC).

MONTIACEAE

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- Cistanthe celedoniana** J. M. Watson & A. R. Flores, *Int. Rock Gardener* 132: [24], *ills.* (pp. [15], [23], [25], [28]-[34], [40]-[41], [48]), 2020. Typus: *Celedón* s.n. in *Flores & Watson* 12801 (CONC, CONC, SGO).
- Cistanthe neonominata** J. M. Watson, *Int. Rock Gardener* 125: [21] [21. May 2020], 2020. Typus: *Werdermann* 405 (E, F, U). [Valid publication under a new name of the invalidly published (ICN Art. 40.6) *Cistanthe subspeciosa* Hershkovitz 2019, which was subsequently validly published by Hershkovitz 2020 (publ. 15. July 2020).]
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- Cistanthe subspeciosa* Hershkovitz, *Phytoneuron* 2020-42: 1 [15. July], 2020. Based on *Werdermann* 405. *Nom. illeg.* (Art. 52.1). [Predated by the homotypic *Cistanthe neonominata* J. M. Watson 2020 [21. May]. First published invalidly (ICN Art. 40.6, holotype incorrectly given as "lectotype") l.c. 2019-27: 56, 2019.]
- Lewisia cotyledon* ssp. *heckneri* (C. V. Morton) Hochstätter, *Lewisia*, 51, 2019. *Nom. inval.* (ICN Art. 29.1), based on *Oreobroma heckneri*.
- Lewisia cotyledon* ssp. *howellii* (S. Watson) Hochstätter, *Lewisia*, 53, 2019. *Nom. inval.* (ICN Art. 29.1), based on *Calandrinia howellii*.
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- Rumicastrum balonense** (Lindley) Carolin ex Hershkovitz, *Phytologia* 102(3): 118, 2020. Basionym: *Calandrinia balonensis*.
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- Rumicastrum compositum** (Nees) Carolin ex Hershkovitz, *Phytologia* 102(3): 118, 2020. Basionym: *Calandrinia polypetala* var. *composita*.
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- Rumicastrum creethae** (Tratman ex Morrison) Carolin ex Hershkovitz, *Phytologia* 102(3): 118, 2020. Basionym: *Calandrinia creethae*.
- Rumicastrum crispisepalum** (Obbens) Hershkovitz, *Phytologia* 102(3): 118, 2020. Basionym: *Calandrinia crispisepala*.
- Rumicastrum cygnorum** (Diels) Carolin ex Hershkovitz, *Phytologia* 102(3): 118, 2020. Basionym: *Calandrinia cygnorum*.
- Rumicastrum cylindricum** (Poellnitz) Carolin ex Hershkovitz, *Phytologia* 102(3): 118, 2020. Basionym: *Calandrinia cylindrica*.
- Rumicastrum dielsii** (Poellnitz) Carolin ex Hershkovitz, *Phytologia* 102(3): 118, 2020. Basionym: *Calandrinia dielsii*.
- Rumicastrum dipetalum** (J. M. Black) Carolin ex Hershkovitz, *Phytologia* 102(3): 118, 2020. Basionym: *Calandrinia dipetala*.

- Rumicastrum dispernum** (J. M. Black) Carolin ex Hershkovitz, *Phytologia* 102(3): 119, 2020. Basionym: *Calandrinia disperma*.
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- Rumicastrum flavum** (Obbens) Hershkovitz, *Phytologia* 102(3): 119, 2020. Basionym: *Calandrinia flava*.
- Rumicastrum gracile** (Bentham) Carolin ex Hershkovitz, *Phytologia* 102(3): 119, 2020. Basionym: *Calandrinia gracilis*.
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- Rumicastrum lefroyense** (Obbens) Hershkovitz, *Phytologia* 102(3): 119, 2020. Basionym: *Calandrinia lefroyensis*.
- Rumicastrum lehmannii** (Endlicher) Carolin ex Hershkovitz, *Phytologia* 102(3): 119, 2020. Basionym: *Calandrinia lehmannii*.
- Rumicastrum liniflorum** (Fenzl) Carolin ex Hershkovitz, *Phytologia* 102(3): 119, 2020. Basionym: *Calandrinia liniflora*.
- Rumicastrum maryonii** (S. Moore) Carolin ex Hershkovitz, *Phytologia* 102(3): 119, 2020. Basionym: *Calandrinia maryonii*.
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- Rumicastrum oblongum** (Syeda & Carolin) Hershkovitz, *Phytologia* 102(3): 120, 2020. Basionym: *Calandrinia oblonga*.
- Rumicastrum opertum** (Obbens) Hershkovitz, *Phytologia* 102(3): 120, 2020. Basionym: *Calandrinia operta*.
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- Rumicastrum pickeringii** (A. Gray) Carolin ex Hershkovitz, *Phytologia* 102(3): 120, 2020. Basionym: *Calandrinia pickeringii*.
- Rumicastrum pleiopetalum** (F. Mueller) Carolin ex Hershkovitz, *Phytologia* 102(3): 120, 2020. Basionym: *Calandrinia pleiopetala*.
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- Rumicastrum primuliflorum** (Diels) Carolin ex Hershkovitz, *Phytologia* 102(3): 120, 2020. Basionym: *Calandrinia primuliflora*.
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- Rumicastrum pumilum** (Bentham) Carolin ex Hershkovitz, *Phytologia* 102(3): 121, 2020. Basionym: *Calandrinia calyptata* var. *pumila*.
- Rumicastrum quadrivalve** (F. Mueller) Carolin ex Hershkovitz, *Phytologia* 102(3): 121, 2020. Basionym: *Calandrinia quadrivalvis*.
- Rumicastrum quartziticum** (Obbens) Hershkovitz, *Phytologia* 102(3): 121, 2020. Basionym: *Calandrinia quartzitica*.
- Rumicastrum remotum** (J. M. Black) Carolin ex Hershkovitz, *Phytologia* 102(3): 121, 2020. Basionym: *Calandrinia remota*.
- Rumicastrum reticulatum** (Syeda) Carolin ex Hershkovitz, *Phytologia* 102(3): 121, 2020. Basionym: *Calandrinia reticulata*.

- Rumicastrum rubrisabulosum** (Obbens) Hershkovitz, *Phytologia* 102(3): 121, 2020. Basionym: *Calandrinia rubrisabulosa*.
- Rumicastrum schistorhizum** (Morrison) Carolin ex Hershkovitz, *Phytologia* 102(3): 121, 2020. Basionym: *Calandrinia schistorhiza*.
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- Rumicastrum stenogynum** (Domin) Carolin ex Hershkovitz, *Phytologia* 102(3): 121, 2020. Basionym: *Calandrinia stenogyna*.
- Rumicastrum strophiolatum** (F. Mueller) Carolin ex Hershkovitz, *Phytologia* 102(3): 122, 2020. Basionym: *Calandrinia strophiolata*.
- Rumicastrum tepperianum** (W. Fitzgerald) Carolin ex Hershkovitz, *Phytologia* 102(3): 122, 2020. Basionym: *Calandrinia tepperiana*.
- Rumicastrum tholiforme** (Obbens) Hershkovitz, *Phytologia* 102(3): 122, 2020. Basionym: *Calandrinia tholiformis*.
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- Rumicastrum uniflorum** (F. Mueller) Carolin ex Hershkovitz, *Phytologia* 102(3): 122, 2020. Basionym: *Calandrinia uniflora*.
- Rumicastrum vernicosum** (Obbens) Hershkovitz, *Phytologia* 102(3): 122, 2020. Basionym: *Calandrinia vernicosa*.
- Rumicastrum volubile** (Bentham) Carolin ex Hershkovitz, *Phytologia* 102(3): 122, 2020. Basionym: *Calandrinia volubilis*.
- Rumicastrum wilsonii** (Obbens) Hershkovitz, *Phytologia* 102(3): 122, 2020. Basionym: *Calandrinia wilsonii*.
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MORACEAE

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PORTULACACEAE

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TALINACEAE

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Tiganophytaceae Swanepoel & al., Phytotaxa 439(3): 177, 2020. Typus: *Tiganophyton* Swanepoel & al..

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Tiganophyton karasense Swanepoel & al., Phytotaxa 439(3): 180, ill. (pp. 178-179), 2020. Typus: *Swanepoel* 365 (WIND, PRE, PRU).

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