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Plantes Succulentes

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für Sukkulenten-Forschung

**Repertorium
Plantarum
Succulentarum
LXXII (2021)**

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. Uitewaai (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 under a Creative Commons licence, accessible over the internet (e.g. <http://succulentresearch.org/publications/>). In 2024, all issues of RPS were digitized and are now available in the Bibliothèque numérique du Cactus Francophone (<https://www.cactuspro.com/biblio/en:rpsbis>).

Repertorium Plantarum Succulentarum LXXII (2021)

*Index nominum novarum plantarum succulentarum anno MMXXI
editorum nec non bibliographia taxonomica ab U. Eggli 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 library at ZSS or received by the compiler). Also included is information supplied to the compiler 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 and replacement names, the basionym or replaced name 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, and Shenzhen Code, 2018) is used for newer names.
- The compiler would like to point out that he does 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.

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Compilers' Preface

Finally, the RPS volume covering the year 2021 has become a reality. Rather than accelerating the compilation of RPS, we have fallen even more behind schedule. As explained in the preface to the preceding RPS volume, one of the reasons for this is a new database environment we have been installing at the end of 2023. Migration of our data to the new BRAHMS database has now been successfully completed, and all daily operations are now performed with this powerful database environment.

The change in database also brought about a change in the way publications such as RPS are produced, i.e. how data is extracted from the database and formatted according to the desired layout. You will notice that as a result of the new workflow, a number of small enhancements to RPS contents have been made (such as adding information on type locality nation and major administrative unit), alongside with a number of minor typographical changes. The overall layout and structuring of the information has been conserved, however.

The production of the present volume of RPS would not have been possible without the help of Emmanuel Wyss, science assistant at the Zürich Succulent Collection, who has meticulously added most of the bibliography details into the database. Numerous colleagues from all over the world have greatly helped by supplying pdf versions of their works.

Urs Eggli

NOMINA NOVA

AGAVACEAE

- Agave cryptica** G. D. Starr & T. J. Davis, Cact. Succ. J. (US) 93(4): 275-276, ills. (pp. 274-276, 279-280), 2021. Typus: Starr 2021-006: Mexico, Nuevo León (ARIZ, MEXU).
- Agave garciamartinezii** Beutelspacher & Najarro, Lacandonia 15(1): 13-14, ills. (pp. 19-21), 2021. Typus: García Martínez 141: Mexico, Chiapas (CHIP).
- Agave guadarramae** N. C. Jiménez & García-Mendoza, Revista Mex. Biodivers. 92(3: e923726): 2-5, ills., 2021. Typus: Jiménez-Pérez & al. 4943: Mexico, Tabasco (UJAT, CICY, MEXU, XAL).
- ×**Hansara** Avent ex J. Spath & J. Moore, Agaves Species Cultivars & Hybrids, 36, 2021. *Nom. illeg.* (ICN Art. 53.1). = *Agave* × *Manfreda* × *Polianthes*. *Non* ×**Hansara** M. H. J. van der Meer 2019 (*Poaceae*).
- ×**Hansara** ‘Jumping Jacks’ J. Spath & J. Moore, Agaves Species Cultivars & Hybrids, 36, 2021. *Incorrect name* (ICN Art. 11.4). [Parentage not disclosed, stated as “crossed and back-crossed *Agave*, *Manfreda*, and *Polianthes*”.]
- Matuda-pina** Hochstätter, Cact.-Advent. Int. (Almeria) 33(1): 64, 2021. *Nom. in val.* (ICN Art. 38.5(b)). Typus: *Yucca endlichiana*. Sphalm. ‘Matuda-Pina’.
- Matuda-pina endlichiana** (Trelease) Hochstätter, Cact.-Advent. Int. (Almeria) 33(1): 64, 2021. Basionym: *Yucca endlichiana*. *Nom. inval.* (ICN Art. 35.1).
- Yucca carrii** Clary & T. P. Adams, Lundellia 24(1): 12-15, ills., 2021. Typus: Clary 427: USA, Texas (TEX, MO, US).
- Yucca quinnarjenii** Hochstätter, Cact.-Advent. Int. (Almeria) 33(1): 60, ills. (pp. 61-62), 2021. Typus: Hochstätter 1188.76.0: USA, Arizona/New Mexico (SRP). [Name first used invalidly (ICN Art. 29.1, Ex. 2) in a digital resource dated 2016 (http://www.fhirt.org/yucca/y_quinnarjenii.php, accessed Dec. 2018), cf. RPS 68).]

AIZOACEAE

- Mesembryanthemum** ×**vascosilvae** (Gideon F. Smith & al.) L. Sáez & Aymerich, Butl. Inst. Catalana Hist. Nat. Secc. Bot. 84: 71, 2020. Basionym: *Aptenia* ×*vascosilvae*. [Omitted previously.]
- Sesuvium americanum** (Gillies ex Arnott) Jocu & Minué, Hacquetia 20(1): 35, figs. 2, 3C,F,I, 4C,F,I, 2021. Basionym: *Trianthema americana*.
- Sesuvium curassavicum** Sukhorukov, Kew Bull. 76(4): 656, ills. (p. 657-658, 660-661), 2021. Typus: Sukhorukov 100: Netherlands Antilles, Curaçao (MW, G).

ANACAMPSEROTACEAE

- Anacampseros septentrionalis** Bruyns, Phytotaxa 524(1): 67-68, ills., 2021. Typus: Bruyns 8061: Namibia (WIND).

APOCYNACEAE

- Adenium crispum** (Chiovenda) Dimmitt & T. Edwards, Cact. Succ. J. (US) 93(4): 261, ills., 2021. Basionym: *Adenium somalense* var. *crispum*. *Nom. inval.* (ICN Art. 41.5).
- Brachystelma ananthagiriense** Paramesh & al., Nordic J. Bot. 39(7: e03003): 2, ills. (pp. 3-5), 2021. Typus: Paramesh & Vijaya Bhasker Reddy 0344: India, Telangana (BSI, BSID, HY).
- Brachystelma maculatum** var. **breviflorum** Nagendra & al., Rheedeia 31(1): 31-34, ills., 2021. Typus: Nagendra & Nagaraju 5170: India, Andhra Pradesh (BSID, Yogi Vemana Herb., Yogi Vemana Univ. Kadapa).
- Brachystelma tumakurense** Gundappa & al., Rheedeia 31(2): 48-51, ills., 2021. Typus: Gundappa & Bhaskar 2546: India, Karnataka (UASB, BSI).
- Ceropegia ansariana** Murugesan & A. A. Mao, Taiwania 66(2): 122-124, ills., 2021. Typus: Ansari & Murugesan 137396: India, Mizoram (ASSAM, MH).
- Ceropegia aquamontana** Peckover, Cactus-World 39(1): 62-63, ills. (pp. 61-65), 2021. Typus: Peckover 292: RSA, Limpopo (PRU).

- Ceropegia calcicola** Kidyoo, Trop. Nat. Hist. 21(1): 2-5, ill., 2021. Typus: Kidyoo 1561: Thailand, Chiang Mai (BKF, BCU).
- Ceropegia citrina** Kidyoo & A. Kidyoo, Pl. Syst. Evol. 307(2: 14): 10, ill. (pp. 7, 13-14), 2021. Typus: Kidyoo 1644: Thailand, Ubon Ratchathani (BKF, BCU).
- Ceropegia khalidbinsultanii** (Plowes & T. A. McCoy) Alharbi & Al-Qthanin, PhytoKeys 174: 62, figs. 6-7 (pp. 64-65), 2021. Basionym: *Huernia khalidbinsultanii*.
- Ceropegia lodarensis** var. **foetida** (Plowes) Alharbi & Al-Qthanin, PhytoKeys 174: 73, figs. 12-13 (pp. 74-75), 2021. Basionym: *Huernia foetida*.
- Ceropegia lodarensis** var. **rubrostricta** (Plowes) Alharbi & Al-Qthanin, PhytoKeys 174: 75, figs. 14-15 (pp. 76-77), 2021. Basionym: *Huernia rubrostricta*.
- Ceropegia longirostris** Thulin & al., Nordic J. Bot. 2021(12: e03416): 2-4, ill., 2021. Typus: Kaariye 1: Ethiopia, Harerge (ETH).
- Ceropegia munbyanasp. hispanica** (Coinc y) Serra, Flora Montiber. 71: 139, ill. (p. 146), 2021. Basionym: *Boucerosia munbyanav ar. hispanica*.
- Ceropegia thorutii** Kidyoo, Trop. Nat. Hist. 31(1): 6-9, ill., 2021. Typus: Kidyoo 1552: Thailand, Chiang Mai (BKF, BCU).
- Chthamalia decumbens** (W. D. Stevens) L. O. Alvarado & E. B. Cortez, Phytoneuron 2021-47: 11, 2021. Basionym: *Matelea decumbens*.
- Dischidia argentii** Arshed & al., Taiwania 66(4): 499-501, ill., 2021. Typus: Tandang & Callado s.n.: Philippines, Luzon (PNH, DLSUH, FEUH).
- Hoya batutikarensis** R. Ahmad & al., Phytotaxa 501(1): 81-83, ill., 2021. Typus: Ahmad 015: Indonesia, Sulawesi (CEB, BO, SING).
- Hoya bauensis** T. Green, Asklepios 127: 63-64, ill., 2021. Typus: Kastberg s.n.: Malaysia, Sarawak (BISH 780529).
- Hoya buntokensis** S. Rahayu & Rodda, Blumea 66(3): 237-239, ill., 2021. Typus: Rahayu 873: Indonesia; Borneo, Kalimantan (BO).
- Hoya pyrifolia** E. F. Huang, PhytoKeys 174: 101-104, ill., 2021. Typus: Huang 1905009: China, Yunnan (PE, PE).
- Hoya tetrantha** J. Feng Zhang & al., J. Trop. Subtrop. Bot. 29(2): 140-141, ill., 2021. Typus: Chen & Zhang SCBG-20170340: China, Yunnan (IBSC, KUN).

ASPHODELACEAE

- Aloe xselmarii** G. F. Smith & Klopfer, Phytotaxa 521(4): 295-298, ill., 2021. Typus: Smith 1124: RSA (cult.) (PRU). [= *Aloe davyana* × *A. parvibracteata*, in cultivation.]
- Aloe uigensis** Gideon F. Smith & T. Lautenschläger, Phytotaxa 521(3): 228-229, ill., 2021. Typus: Lautenschläger 2015-11-63: Angola, Uíge Prov. (DR, B).
- Aloiampelos tenuior** var. **decidua** (Reynolds) Van Jaarsveld, Flow. Pl. Afr. 67: 33, ill. (p. 36), 2021. Basionym: *Aloe tenuior* var. *decidua*.
- Aloiampelos tenuior** var. **densiflora** (Reynolds) Van Jaarsveld, Flow. Pl. Afr. 67: 34, ill. (p. 36), 2021. Basionym: *Aloe tenuior* var. *densiflora*.
- Aloiampelos tenuior** var. **rubriflora** (Reynolds) Van Jaarsveld, Flow. Pl. Afr. 67: 34, ill., 2021. Basionym: *Aloe tenuior* var. *rubriflora*.
- Aloiampelos tenuior** var. **viridifolia** (Van Jaarsveld) Van Jaarsveld, Flow. Pl. Afr. 67: 33, ill. (t. 2363, p. 37), 2021. Basionym: *Aloe tenuior* var. *viridifolia*.
- Bulbine audreyae** N. R. Crouch & Gideon F. Smith, Bradleya 39: 127-129, ill., 2021. Typus: Crouch 1295: RSA, Western Cape (BNRH).

BROMELIACEAE

- Cryptanthus brevibracteatus** D. M. C. Ferreira & Louzada, Phytotaxa 523(1): 107, ill. (pp. 105-106), 2021. Typus: Daneu 744: Brazil, Bahia (UFP, CEPEC, RB).
- Dyckia altoana** P. J. Braun & K.-H. Tank, Bromelie 2021(3): 135, ill. (pp. 134-146), 2021. Typus: Tank 1917: Brazil, Goiás (HAS).
- Dyckia avacanoeira** Forzza & Faria, Feddes Repert. 132(3): 270, 2021. Typus: Faria & al. 10276: Brazil, Goiás (HEPH, RB, SPF).
- Dyckia inconspicua** P. J. Braun & K.-H. Tank, Bromelie 2021(3): 101, ill. (pp. 100-108), 2021. Typus: Tank 1916: Brazil, Goiás (HAS, HAS).
- Dyckia josinoi-narcisae** (P. J. Braun & Esteves) Forzza, Feddes Repert. 132(3): 277, 2021. Basionym: *Encholirium josinoi-narcisae*.

- Dyckia oreadica** Forzza & Antar, Feddes Repert. 132(3): 273, 2021. Typus: Antar & al. 2783: Brazil, Goiás (SPF).
- Dyckia viridiflora** Forzza, Feddes Repert. 132(3): 276, 2021. Typus: Forzza & Forzza 4078: Brazil, Bahia (RB, B, HUEFS, K, NY, SPF, US). [Nom. nov. pro *Encholirium splendidum* Forzza 2015 (non *Dyckia splendida* (Forzza) Forzza 2019).]
- Encholirium avacanoeirum** (Forzza & Faria) P. J. Braun & K.-H. Tank, Bromelie 2021(3): 144, 2021. Basionym: *Dyckia avacanoeira*.
- Encholirium nibertii** P. J. Braun & Gastaldi ex P. J. Braun, Bromelie 2021(2): 85-87, ill. (pp. 84-88, 93-94, back cover), 2021. Typus: Nibert s.n.: Brazil, Minas Gerais (HAS 97.419).
- Encholirium oreadicum** (Forzza & Antar) P. J. Braun & K.-H. Tank, Bromelie 2021(3): 145, 2021. Basionym: *Dyckia oreadica*.
- Hechtia marthae** I. Ramírez & al., Phytotaxa 523(1): 63-65, ill., 2021. Typus: Ramírez-Morillo & Carnevali 1627: Mexico, Durango (CICY).

CACTACEAE

- Acanthocalycium rhodotrichum** ssp. **chacoanum** (K. Schumann) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Echinopsis chacoana*. [First published invalidly under ICN Art. 29.1 (no ISSN) by Lodé, Cact.-Advent. Init. 32(1): 52, 2020 (sphalm. 'chacoanus'), becoming effective but superfluous in Sept. 2022 when a pdf with ISSN was made available.]
- Acanthocalycium thionanthum** ssp. **ferrarii** (Rausch) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Acanthocalycium ferrarii*.
- Acanthocereus atropurpureus** González-Zamora & Dan. Sánchez, Phytotaxa 522(2): 132, ill. (pp. 134-136), 2021. Typus: González-Zamora 8: Mexico, Jalisco (IBUG, MEXU).
- Acharagma roseanum* ssp. **menzeliorum** Nitzschke, Kaktusy 57(Special 3): 26-28, ill., 2021. *Nom. inval.* (ICN Art. 39.2, 40.1). [Published as provisional name.]
- Acharagma roseanum* ssp. **rudolphiorum** Nitzschke, Kaktusy 57(Special 3): 29-31, ill., 2021. *Nom. inval.* (ICN Art. 39.2, 40.1). [Published as provisional name.]

- Arrojadoa leucostele** (Gürke) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 39, 2021. Basionym: *Cereus leucostele*.
- Arrojadoa olsthoorniana** Hofacker & al., Kakt. and. Sukk. 72(10): 306, ill. (pp. 305-310), 2021. Typus: Mendes & Machado 40: Brazil, Bahia (HURB).
- Arthrocereus grandiflorus** D. R. Gonzaga & Menini, Phytotaxa 510(2): 180-181, ill., 2021. Typus: Gonzaga & Campanharo 1133: Brazil, Minas Gerais (RB, HDJF).
- × **Arthronopsis** Modrakowski, Kakt. Inne 12(2): 73, ill., 2021. [Volume dated 2020, digital publication announced 4. 1. 2021.] = *Arthrocereus* × *Echinopsis*.
- × **Arthrowinterocereus** Modrakowski, Kakt. Inne 12(3): 88, ill., 2021. [Volume dated 2020, published 28. 3. 2021 according to the metadata of the pdf.] = *Arthrocereus* × *Winterocereus*.
- Cereus bradei** (Backeberg & Voll) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 41, 2021. Basionym: *Pilocereus bradei*.
- Cereus laniflorus** (N. P. Taylor & Zappi) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 41, 2021. Basionym: *Cipocereus laniflorus*.
- Chichimecactus** Bárcenas & al., Phytotaxa 512(3): 155, 2021. Typus: *Strombocactus corregidorae*.
- Chichimecactus corregidorae** (S. Arias & E. Sánchez) Bárcenas & al., Phytotaxa 512(3): 155, ill. (pp. 149, 154), 2021. Basionym: *Strombocactus corregidorae*.
- Cochemiea albicans** (Britton & Rose) P. B. Breslin & Majure, Taxon 70(2): 318, 2021. Basionym: *Neomammillaria albicans*.
- Cochemiea angelensis** (R. T. Craig) P. B. Breslin & Majure, Taxon 70(2): 318, 2021. Basionym: *Mammillaria angelensis*.
- Cochemiea armillata** (K. Brandegee) P. B. Breslin & Majure, Taxon 70(2): 318, 2021. Basionym: *Mammillaria armillata*.
- Cochemiea blossfeldiana** (Bödeker) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Mammillaria blossfeldiana*.
- Cochemiea blossfeldiana** ssp. **rectispina** (E. Y. Dawson) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Mammillaria goodridgei* var. *rectispina*.

- Cochemiea boolii** (G. E. Lindsay) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Mammillaria boolii*.
- Cochemiea bullardiana** (H. E. Gates) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Neomammillaria bullardiana*.
- Cochemiea cerralboa** (Britton & Rose) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Neomammillaria cerralboa*.
- Cochemiea conoidea** (De Candolle) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Mammillaria conoidea*.
- Cochemiea estebanensis** (G. E. Lindsay) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Mammillaria estebanensis*.
- Cochemiea fraileana** (Britton & Rose) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Neomammillaria fraileana*.
- Cochemiea goodridgei** (Scheer ex Salm-Dyck) P. B. Breslin & Majure, Taxon 72(2): 319, 2021. Basionym: *Mammillaria goodridgei*.
- Cochemiea guelzowiana** (Werdermann) P. B. Breslin & Majure, Taxon 72(2): 319, 2021. Basionym: *Mammillaria guelzowiana*.
- Cochemiea hutchisoniana** (H. E. Gates) P. B. Breslin & Majure, Taxon 72(2): 319, 2021. Basionym: *Neomammillaria hutchisoniana*.
- Cochemiea hutchisoniana** ssp. **louisae** (G. E. Lindsay) Majure, Willdenowia 51(2): 264, 2021. Basionym: *Mammillaria louisae*.
- Cochemiea insularis** (H. E. Gates) P. B. Breslin & Majure, Taxon 72(2): 319, 2021. Basionym: *Mammillaria insularis*.
- Cochemiea macdougallii** (Alexander) P. B. Breslin & Majure, Taxon 72(2): 319, 2021. Basionym: *Ortegocactus macdougallii*.
- Cochemiea mainiae** (K. Brandegees) P. B. Breslin & Majure, Taxon 70(2): 319, 2021. Basionym: *Mammillaria mainiae*.
- Cochemiea multidigitata** (Radley ex G. E. Lindsay) P. B. Breslin & Majure, Taxon 70(2): 320, 2021. Basionym: *Mammillaria multidigitata*.
- Cochemiea palmeri** (J. M. Coulter) P. B. Breslin & Majure, Taxon 70(2): 320, 2021. Basionym: *Cactus palmeri*.
- Cochemiea schumannii** (Hildmann) P. B. Breslin & Majure, Taxon 70(2): 320, 2021. Basionym: *Mammillaria schumannii*.
- Cochemiea tetrancistra** (Engelmann) P. B. Breslin & Majure, Taxon 70(2): 320, 2021. Basionym: *Mammillaria tetrancistra*.
- Cochemiea thornberi** (Orcutt) P. B. Breslin & Majure, Taxon 70(2): 320, 2021. Basionym: *Mammillaria thornberi*.
- Cochemiea thornberi** ssp. **yaquensis** (R. T. Craig) P. B. Breslin & Majure, Taxon 70(2): 320, 2021. Basionym: *Mammillaria yaquensis*.
- Cochemiea viridiflora** (Britton & Rose) P. B. Breslin & Majure, Taxon 70(2): 320, 2021. Basionym: *Neomammillaria viridiflora*.
- Consolea millsbaughii** ssp. **corallicola** (Small) Majure, Willdenowia 51(2): 264, 2021. Basionym: *Consolea corallicola*.
- Corryocactus aureus** ssp. **dillonii** (A. Pauca & Quipuscoa) Ostolaza, Todos Cact. Perú, ed. 2, 475, ills. (p. 477), 2019. Basionym: *Corryocactus dillonii*.
- Coryphantha durangensis** ssp. **cincomayensis** Matuszewski & Snicer, Mitteilungsbl. AfM 45(1): 4, ills. (pp. 2-9), 2021. Typus: Matuszewski & Hinton 29626: Mexico, Coahuila (Herb. G. B. Hinton).
- Coryphantha ibarrana** Matuszewski & Snicer, Mitteilungsbl. AfM 45(4): 211, ills. (pp. 210-215), 2021. Typus: Matuszewski & Hinton 29627: Mexico, Durango (Herb. G. B. Hinton).
- Coryphantha sneedii* var. *organensis* (D. A. Zimmerman) A. D. Zimmerman ex Gorelick, Haseltonia 27: 45, 2021. Basionym: *Coryphantha organensis*. *Incorrect name* (ICN Art. 11.4). [Inadvertent combination, full reference to the basionym given on p. 57, but invalid versus *Coryphantha vivipara* var. *sneedii*, published and accepted in the same paper. Publication date given as 28. 12. 2020 on the inside front cover, but stated as 1. 3. 2021 in the digital version on BioOne.]
- Coryphantha sneedii* var. *sandbergii* (Castetter & al.) A. D. Zimmerman ex Gorelick, Haseltonia 27: 46, 2021. Basionym: *Escobaria sandbergii*. *Incorrect name* (ICN Art. 11.4). [Inadvertent combination, full reference to the basionym given on p. 57, but invalid versus *Coryphantha vivipara* var. *sneedii*, published and accepted in the same paper. Publication date given as 28. 12. 2020 on the inside front cover, but stated as 1. 3. 2021 in the digital version on BioOne.]
- Coryphantha sneedii* var. *villardii* (Castetter & al.) A. D. Zimmerman ex Gorelick, Haseltonia 27: 47, 2021. Basionym: *Escobaria villardii*. *Incorrect name* (ICN Art. 11.4). [In-

- advertent combination, full reference to the basionym given on p. 57, but invalid versus *Coryphantha vivipara* var. *sneedii*, published and accepted in the same paper. Publication date given as 28. 12. 2020 on the inside front cover, but stated as 1. 3. 2021 in the digital version on BioOne.]
- Coryphantha vivipara** var. **sneedii** (Britton & Rose) Gorelick, Haseltonia 27: 57, 2021. Basionym: *Escobaria sneedii*. [Publication date given as 28. 12. 2020 on the inside front cover, but stated as 1. 3. 2021 in the digital version on BioOne. The name is treated as valid by IPNI (acc. Sept. 2024), but is arguably invalid under ICBN Art. 36.1a, as its provisional nature is stated at the bottom of the preceding text page ("should probably be reduced to a synonym of *C. vivipara*, albeit as a new variety".)]
- Cumulopuntia flexibilispina** Hoxey & M. Lowry, Bradleya 39: 46-49, ill., 2021. Typus: Hoxey & Lowry 5: Bolivia, La Paz (LPB).
- Cumulopuntia variiflora* (Backeberg) E. Sarnes & N. Sarnes, Cact. Succ. Rev. 30: 18, ill., 2021. Basionym: *Tephrocactus variiflorus*. *Nom. inval.* (ICN Art. 36.1). [Provisionally suggested only.]
- Cylindropuntia perrita** (Griffiths) Majure, Willdenowia 51(2): 264, 2021. Basionym: *Opuntia perrita*.
- Discocactus zehntneri** ssp. **alagoinhensis** Zachar & Halfar, Kaktusy 57(4): 118, ill. (pp. 115-118), 2021. Typus: Zachar 1790: Brazil, Piauí (UB 217306).
- Discocactus zehntneri** ssp. **mir ohalfarii** Zachar, Kaktusy 57(4): P51, 2021. Typus: Zachar 1787: Brazil, Piauí (UB 217307). [First published invalidly (ICN Art. 40.1) l.c. 57(3): 95-98, ill., 2021.]
- Echinopsis acrantha** (K. Schumann ex Vaupel) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 38, 2021. Basionym: *Cereus acranthus*.
- Echinopsis aurea** ssp. **leucomalla** (Wessner) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Lobivia leucomalla*.
- Echinopsis hennigiana** Anceschi & Magli, Cactusinhabitat South America 2013/2021, 38, 2021. Typus: Soukup 6311: Peru, Apurímac (SMF 6102). [*Nom. nov. pro Weberbauerocereus cuzcoensis* Knize 1969 (*non Echinopsis cuzcoensis* (Britton & Rose) H. Friedrich & G. D. Rowley 1974).]

- Echinopsis hystrix** (Rauh & Backeberg) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 38, 2021. Basionym: *Loxanthocereus hystrix*.
- Echinopsis laniceps** (K. Schumann) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 38, 2021. Basionym: *Cereus laniceps*.
- Echinopsis luisramirezii** (Lodé & F. Carlier) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(4): 1, 2021. Basionym: *Chamaecereus luisramirezii*.
- Echinopsis martinii** (Labouret) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 38, 2021. Basionym: *Cereus martinii*.
- Echinopsis micropetala** (F. Ritter) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 39, 2021. Basionym: *Cleistocactus micropetalus*.
- Echinopsis rondoniana** (Backeberg) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 39, 2021. Basionym: *Arthrocareus rondonianus*.
- Echinopsis smaragdiflora** (F. A. C. Weber) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 39, 2021. Basionym: *Cereus smaragdiflorus*.
- Echinopsis strausii** (Heese) Anceschi & Magli, Cactusinhabitat South America 2013/2021, 39, 2021. Basionym: *Pilocereus strausii*.
- Echinopsis tubiflora** ssp. **callochrysea** (F. Ritter) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Hymenorebutia aurea* var. *callochrysea*.
- ×**Echinostele** M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(1): 1, 2021. =*Ec hinopsis* × *Leucostele*.
- ×**Echinostele cabreræ** (R. Kiesling) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(1): 1, 2021. Basionym: *Trichocereus ×cabreræ*.
- Epiphyllum ×bauericardium** (E. Meier & Mangelsdorff) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(5): 1, 2021. Basionym: ×*Seleniphyllum bauericardium*.
- Epiphyllum phyllanthus** ssp. **plattsii** (Proctor) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(5): 2, 2021. Basionym: *Epiphyllum phyllanthus* var. *plattsii*.
- Eriosyce camanaensis** (F. Cáceres) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(4): 1, 2021. Basionym: *Islaya camanaensis*.

- Espostoa calva** ssp. **cremnophila** (Hoxey) Ostolaza, Todos Cact. Perú, ed. 2, 312, ill. (p. 314), 2019. Basionym: *Espostoa cremnophila*.
- Espostoa grandiareolata* Burghardt, Kakt. Inne 12(3): 84-87, ill., 2021. Typus: based on several syntypes (herbarium not indicated). *Nom. inval.* (ICN Art. 40.1, 40.7). [Volume dated 2020, published 28. 3. 2021 according to the metadata of the pdf.]
- Espostoa huanucoensis* ssp. **viridis** Burghardt, Kakt. Inne 12(2): 59, ill. (pp. 59, 61), 2021. Typus: Burghardt 043.01: Peru, Huánuco (herbarium not indicated). *Nom. inval.* (ICN Art. 40.7). [Volume dated 2020, digital publication announced 4. 1. 2021.]
- Ferocactus grusonii** (Hildmann) Guiggi, Cactology 5(Suppl. 12): [1], 2021. Basionym: *Echinocactus grusonii*. [Repeated invalidly (ICN Art. 41.5) by Afferni, Piante Grasse 42(1): 44, 2022.]
- Gymnocalycium acentracanthum** (F. Berger) Nycz, *Gymnocalycium* New Classif., 19, 2021. Basionym: *Gymnocalycium ritterianum* var. *acentracanthum*. [Basionym rank erroneously given as ssp.]
- Gymnocalycium aeneum** (Mere galli & Guglielmone) Nycz, *Gymnocalycium* New Classif., 31, 2021. Basionym: *Gymnocalycium strigilium* ssp. *aeneum*.
- Gymnocalycium anisitsii** ssp. **tucavocense** (Backeberg ex H. Till & Amerhauser) Schädlich, Schütziana 12(2): 25, ill. (pp. 23-25), 12(3): 5 [erratum], 2021. Basionym: *Gymnocalycium anisitsii* var. *tucavocense*. [The reference to the publication place of the basionym was incorrect l.c. 12(2): 25 and was corrected subsequently, but ICN Art. 41.6 is thought to apply.]
- Gymnocalycium argentinense** (H. Till & W. Till) Nycz, *Gymnocalycium* New Classif., 11, 2021. Basionym: *Gymnocalycium pflanzii* ssp. *argentinense*.
- Gymnocalycium armillatum** (Piltz) Nycz, *Gymnocalycium* New Classif., 19, 2021. Basionym: *Gymnocalycium castellanosi* var. *armillatum*.
- Gymnocalycium bicolor** (Repka) V. Gapon, Kakt.-Klub 5(1): 63, ill., 2021. Basionym: *Gymnocalycium mostii* ssp. *bicolor*.
- Gymnocalycium bicolor** ssp. **simplex** (Repka) V. Gapon, Kakt.-Klub 5(1): 63, ill. (pp. 60-61), 2021. Basionym: *Gymnocalycium prochazkianum* ssp. *simplex*.
- Gymnocalycium boessii* (R. Kiesling & al.) Nycz, *Gymnocalycium* New Classif., 31, 2021. Basionym: *Gymnocalycium schroederianum* ssp. *boessii*. *Nom. illeg.* (ICN Art. 52.1). [Illegitimate vs. the prioritable *G. erolesii* Neuhuber & C. A. L. Bercht 2002, which is explicitly cited being the same taxon l.c. p. 33.]
- Gymnocalycium cardenasianum** ssp. **armatum** (F. Ritter) V. Gapon & Vikulov, Kakt.-Klub 5(1): 50, ill. (pp. 39-42, 49, 51-52), 2021. Basionym: *Gymnocalycium armatum*.
- Gymnocalycium cardenasianum** ssp. **pseudarmatum** V. Gapon & Vikulov, Kakt.-Klub 5(1): 50, ill. (pp. 48, 51-52), 2021. Typus: Gapon 935a: Bolivia, Tarija (WU, WU).
- Gymnocalycium ferocius** (Backeberg ex H. Till & Amerhauser) Nycz, *Gymnocalycium* New Classif., 19, ill. (p. 21), 2021. Basionym: *Gymnocalycium mostii* ssp. *ferocius*.
- Gymnocalycium hossei** ssp. **ferrarii** (Rausch) Lodé, Cact.-Advent. Int. (Almeria) 33(1): 52, ill. (p. 53), 2021. Basionym: *Gymnocalycium ferrarii*.
- Gymnocalycium huettneri** (F. Berger) Nycz, *Gymnocalycium* New Classif., 31, 2021. Basionym: *Gymnocalycium parvulum* ssp. *huettneri*.
- Gymnocalycium hyptiacanthum** ssp. **leanum** (Hooker) Lodé, Cact.-Advent. Int. (Almeria) 33(1): 52, 2021. Basionym: *Echinocactus leeanum*.
- Gymnocalycium marekiorum** ssp. **sansoseanum** Schädlich, Schütziana 12(3): 29, ill. (pp. 27-29), 2021. Typus: Schädlich 03-40: Bolivia, Santa Cruz (WU 4141).
- Gymnocalycium marekiorum** var. **guaraniorum** Schädlich, Schütziana 12(3): 25, ill. (pp. 22-25), 2021. Typus: Schädlich 11-946/1543: Bolivia, Santa Cruz. (WU 4038).
- Gymnocalycium marekiorum** var. **roboreanum** Schädlich, Schütziana 12(3): 19, ill. (pp. 15-18), 2021. Typus: Schädlich 03-45: Bolivia, Santa Cruz. (WU 4140).
- Gymnocalycium megatae** ssp. **holdii** (Amerhauser) Schädlich, Schütziana 12(1): 14, ill. (pp. 9-13), 2021. Basionym: *Gymnocalycium anisitsii* ssp. *holdii*.

- Gymnocalycium oenanthemum** ssp. **ambatoense** (Piltz) Lodé, Cact.-Advent. Int. (Almeria) 33(1): 52, ill. (p. 53), 2021. Basionym: *Gymnocalycium ambatoense*.
- Gymnocalycium paucicostatum** (R. Kiesling) Nycz, *Gymnocalycium* New Classif., 31, 2021. Basionym: *Gymnocalycium schroederianum* ssp. *paucicostatum*.
- Gymnocalycium suyuquense** (F. Berger) Nycz, *Gymnocalycium* New Classif., 31, 2021. Basionym: *Gymnocalycium fischeri* ssp. *suyuquense*.
- Gymnocalycium victorii** Neuhuber, Kakt.-Klub 5(3): 5-6, ill. (pp. 7-9), 2021. Typus: Neuhuber 11-1597: Argentina, San Luis (WU, WU).
- Jasminocereus thouarsii** ssp. **delicatus** Lodé, Cact.-Advent. Int. (Almeria) 33(1): 54, 2021. Basionym: *Jasminocereus howellii* [Nom. nov. pro *Jasminocereus howellii* E. Y. Dawson 1962. Although the name appears to have been intended as combination for *J. howellii* var. *delicatus*, only the name of the species is given, and the page reference, the cited figures and esp. the cited type all refer to *J. howellii*, which is therefore the replaced synonym (U. Eggli, June 2024).]
- Jasminocereus thouarsii** ssp. **sclerocarpus** (K. Schumann) Lodé, Cact.-Advent. Int. (Almeria) 33(1): 54, 2021. Basionym: *Cereus sclerocarpus*.
- Kadenicarpus heliae** (García-Morales & al.) D. Aquino, Willdenowia 51(2): 264, 2021. Basionym: *Turbinicarpus heliae*.
- Leptocereus velozianus** Clase & al., PhytoKeys 172: 23-24, ill. (pp. 25-26), 2021. Typus: Majure 7843: Dominican Republic, Prov. Independencia (JBSD, FLAS).
- × **Leucomozoa** M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(3): 1, 2021. = *Leucostele* × *Denmoza*.
- × **Leucomozoa roseiflora** (F. Font & Picca) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(3): 1, 2021. Basionym: × *Trichomoza roseiflora*.
- Leucostele atacamensis** ssp. **pasacana** (F. A. C. Weber ex Rümpler) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Pilocereus pasacana*.
- Leucostele chiloensis** ssp. **australis** (F. Ritter) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Trichocereus chiloensis* var. *australis*.
- Leucostele chiloensis** ssp. **eb urneus** (Philippi ex K. Schumann) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Eulychnia eburnea*.
- Leucostele chiloensis** ssp. **panhoplites** (K. Schumann) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Cereus chiloensis* var. *panhoplites*.
- Leucostele faundezii** (Albesiano) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Trichocereus faundezii*.
- Leucostele pectinifera** (Albesiano) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Trichocereus pectinifer*.
- Leucostele undulosa** (Albesiano) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Trichocereus undulosus*.
- Lobivia bridgesi** ssp. **v allegrandensis** (Cárdenas) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Echinopsis vallegrandensis*.
- Lobivia bridgesi** ssp. **yungasensis** (F. Ritter) Schlumpberger, Willdenowia 51(2): 264, 2021. Basionym: *Echinopsis yungasensis*.
- Lobivia hertrichiana** var. **acchaensis** (Eb. Scholz & al.) Eb. Scholz, Echinopseen 18(1): 98, 100, 2021. Basionym: *Lobivia acchaensis*. [The reference to the basionym is given on p. 100.]
- Lobivia perezensis** (Cárdenas) Lodé, Cact.-Advent. Int. (Almeria) 33(1): 56, 2021. Basionym: *Echinopsis perezensis*.
- Lobivia sucrensis** (Cárdenas) Lodé, Cact.-Advent. Int. (Almeria) 33(1): 56, 2021. Basionym: *Echinopsis sucrensis*.
- Mammillaria blossfeldiana** ssp. **rectispina** (E. Y. Dawson) Lodé, Cact.-Advent. Int. (Almeria) 33(1): 58, 2021. Basionym: *Mammillaria goodridgei* var. *rectispina*.
- Mammillaria columbiana** ssp. **hennisii** (Bödeker) Lodé, Cact.-Advent. Int. (Almeria) 33(1): 58, 2021. Basionym: *Mammillaria hennisii*.
- Mammillaria thomasii** (García-Morales & al.) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(4): 1, 2021. Basionym: *Cochemia thomasii*.
- Melocactus caloxanthus** Hoxey & al., Cactus-World 39(2): 98, ill. (pp. 93-97), 2021. Typus: Hoxey & Gdaniec s.n.: Haiti, Dept. Sud-Est (GIB 2021001).
- Melocactus onychacanthus* ssp. *mayor* Burghardt, Kakt. Inne 12(4): 131-132, ill., 2021. Typus: Burghardt 026.05: Peru, Caja-

- marca (herbarium not indicated). *Nom. in val.* (ICN Art. 40.7).
- Melocactus oreas** ssp. **alex-bragae** (P. J. Braun & Esteves) Guiggi, Phytotaxa 496(1): 97, 2021. Basionym: *Melocactus alex-bragae*.
- Neoabbottia demissa** (Areces) Guiggi, Cactology 5(Suppl. 12): 2, 2021. Basionym: *Leptocereus demissus*.
- Neoabbottia veloziana** (Clase & al.) Guiggi, Cactology 5(Suppl. 12): 2, 2021. Basionym: *Leptocereus velozianus*.
- Opuntia caboensis** F. Mercado & León de la Luz, Phytotaxa 508(3): 271-274, ills., 2021. Typus: León de la Luz 08-087: Mexico, Baja California Sur (HCIB, MEXU).
- Opuntia ×cristalensis** Oakley & al., Syst. Biodivers. 19(8): 1035-1036, ills. (pp. 1029, 1032), 2021. Typus: Köhler 491: Argentina, Santa Fe (ICN). [= *Opuntia ficus-indica* × *O. rioplatensis*.]
- Opuntia leoglossa** Font & M. Köhler, Phytotaxa 510(3): 282-284, ills., 2021. Typus: Stajsic 1006: Australia, Victoria (MEL. [2 sheets + 1 spirit collection], CANB, NSW). [A cultigen of unknown origin recorded from Australia and Spain.]
- Opuntia sierralagunensis** León de la Luz & F. Mercado, Phytotaxa 508(3): 269-272, ills., 2021. Typus: León de la Luz 10-014: Mexico, Baja California Sur (HCIB, MEXU).
- ×*Oreolobivia celox* Skro van, Cactaceae etc. 31(4): 159-160, ills., 2021. *Nom. inval.* (ICN Art. 39.2, 40.1). [= *Or. eocereus celsianus* × *Lobivia ferox*.]
- Papyrocactus** Doweld, Phytotaxa 524(2): 95, 2021. Basionym: *Toumeya* *Nom. nov. pro Toumeya* Britton & Rose 1922 (*non Toumeya* W. H. Harvey 1858; *Algae*).
- Papyrocactus papyracanthus** (Engelmann) Doweld, Phytotaxa 524(2): 95, 2021. Basionym: *Mammillaria papyracantha*.
- Parodia gladiata** (V. Gapon & Ponomareva) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(4): 1, 2021. Basionym: *Wigginsia gladiata*.
- ×**Patrocereus** M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(2): 1, 2021. = *P. achyereus* × *Mitrocereus*.
- ×**Patrocereus apicicostatus** (S. Arias & Terrazas) M. H. J. van der Meer, Cact. Phantast. [n.s.] 1(2): 1, 2021. Basionym: ×*Pacheberia apicicostata*.
- Pereskia bahiensis** ssp. **minensis** N. P. Taylor & Albuquerque-Lima, Phytotaxa 494(3): 294-295, ills. (pp. 291-293), 2021. Typus: Zappi & al. 5106: Brazil, Minas Gerais (UB, RB, UFP).
- Pilosocereus armatus** (Otto ex Pfeiffer) A. R. Franck, Willdenowia 51(2): 264, 2021. Basionym: *Cereus armatus*.
- Pilosocereus brevispinus** Hoxey & Gdaniec, Cact. Succ. J. (US) 93(2): 102-104, ills., 2021. Typus: Hoxey & Gdaniec s.n.: Haiti, Dept. Centre (GIB).
- Pilosocereus excelsus** Hoxey & Gdaniec, Cact. Succ. J. (US) 93(2): 104-106, ills., 2021. Typus: Salazar & al. 318: Dominican Republic, Prov. La Altagracia (NY, JBSD).
- Pilosocereus samanensis** Hoxey & Gdaniec, Cact. Succ. J. (US) 93(2): 107-108, ills., 2021. Typus: Abbott 1190: Dominican Republic, Prov. Samaná (US, NY).
- Punotia lagopus** ssp. **malyana** (D. R. Hunt) Ostolaza, Todos Cact. Perú, ed. 2, 228, ill. (p. 229), 2019. Basionym: *Tephrocactus malyanus*.
- Rebutia nataliarum** V. Gapon, Kakt.-Klub 5(3): 11-12, ills. (pp. 10, 14-16, 18), 2021. Typus: Gapon 09-952: Bolivia, Tarija (WU, WU).
- Rhipsalis trigonoides** (Doweld) N. Korotkova, Willdenowia 51(2): 265, 2021. Basionym: *Hylorhipsalis trigonoides*.
- Salmonopuntia schickendantzii** (F. A. C. Weber) Font & M. Köhler, Phytotaxa 505(3): 267, ills. (p. 263), 2021. Basionym: *Opuntia schickendantzii*.
- Selenicereus plumieri** (Roland-Gosselin) Hoxey & Gdaniec, Phytotaxa 483(1): 58, 2021. Basionym: *Cereus plumieri*.
- Soehrensia formosa** ssp. **kieslingii** (Rausch) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Lobivia kieslingii*.
- Soehrensia formosa** ssp. **korethroides** (Werdemann) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Echinopsis korethroides*.
- Soehrensia formosa** ssp. **randallii** (Cárdenas) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Trichocereus randallii*.
- Soehrensia formosa** ssp. **rosarioana** (Rausch) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Lobivia rosarioana*.

- Soehrensia huascha** ssp. **robusta** (Rausch) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Lobivia huascha* var. *robusta*.
- Soehrensia ×mendocina** (Méndez) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Trichocereus ×mendocinus*.
- Soehrensia sandiensis** (Hox ey) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Echinopsis sandiensis*.
- Soehrensia serpentina** (M. Lowry & M. Mendoza) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Echinopsis serpentina*.
- Soehrensia shaferi** (Britton & Rose) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Trichocereus shaferi*.
- Soehrensia tarijensis** ssp. **bertramiana** (Backeberg) Schlumberger, Willdenowia 51(2): 265, 2021. Basionym: *Trichocereus bertramianus*.
- Tacinga armata** J. G. Freitas & E. M. Almeida, Phytotaxa 490(3): 241, ill., (pp. 242, 245), 2021. Typus: Araújo s.n.: Brazil, Paraíba (EAN).
- Tacinga ×flammea** J. G. Freitas & E. M. Almeida, Phytotaxa 490(3): 247, 249, ill., (pp. 244-245), 2021. Typus: Almeida 1980: Brazil, Minas Gerais (EAN). [= *Tacinga inamoena* × *T. wernerii*, naturally occurring.]
- Tacinga gladispina** J. G. Freitas & E. M. Almeida, Phytotaxa 490(3): 246-247, ill., (pp. 243, 245), 2021. Typus: Almeida 1829: Brazil, Bahia (EAN).
- Wigginsia langsdorffii** ssp. **eddiewarasii** (N. Gerloff) V. Gapon, Kakt.-Klub 5(3): 84, ill., (pp. 85-89), 2021. Basionym: *Notocactus langsdorffii* fa. *eddiewarasii*.
- Wigginsia sessiliflora* fa. *debilacantha* W. R. Abraham, Internoto 42(4): 99, ill., 2021. *Nom. inval.* (ICN Art. 36.1b, 39.2). [Published as provisional name.]
- Wigginsia sessiliflora** fa. **martinii** (Labouret ex Rümpler) W. R. Abraham, Internoto 42(4): 100, ill., (pp. 101-103), 2021. Basionym: *Malacocarpus martinii*.
- Wigginsia sessiliflora** fa. **stegmannii** (Backeberg) W. R. Abraham, Internoto 42(4): 99, 2021. Basionym: *Malacocarpus stegmannii*.
- Wigginsia vorwerkiana* fa. *hennisii* W. R. Abraham, Internoto 42(4): 101-102, 2021. *Nom. inval.* (ICN Art. 36.1b, 38.1a). [Published as provisional name.]

CRASSULACEAE

- Aeonium ×acebesii** O. Arango, Vieraee 47: 81-82, ill., (pp. 82-84, 86-87), 2021. Typus: Arango s.n.: Spain, Islas Canarias (TFC 52.549, LPA). [= *Aeonium cuneatum* × *A. urbicum* ssp. *urbicum*, naturally occurring.]
- Aeonium ×bornmuelleri** nssp. **subglabrum** O. Arango, Vieraee 47: 105, ill., (pp. 106-107, 109), 2021. Typus: Arango s.n.: Spain, Islas Canarias (TFC 53.343). [= *Aeonium canariense* ssp. *canariense* × *A. urbicum* ssp. *boreale*, naturally occurring.]
- Aeonium ×contortiflorum** O. Arango, Vieraee 47: 99, ill., (pp. 100-101, 103), 2021. Typus: Arango s.n.: Spain, Islas Canarias (TFC 53.396, LPA). [= *Aeonium lindleyi* ssp. *lindleyi* × *A. volkeri*, naturally occurring.]
- Aeonium ×experimentale** O. Arango, Bot. Macaronés. 31: 35-39, ill., 2021. Typus: Arango s.n.: cult. (LPA 38599, TFC). [= *Aeonium haworthii* × *A. sedifolium*, obtained in cultivation from controlled crossing.]
- Aeonium ×grandipetalum** Bañares, Vieraee 47: 142-144, ill., 2021. Typus: Bañares s.n.: Spain, Islas Canarias (TFC 48718). [= *Aeonium canarienses* ssp. *c. hristii* × *A. escobarii*, naturally occurring.]
- Aeonium ×tagananense** O. Arango, Vieraee 47: 89, ill., (pp. 90-91, 93), 2021. Typus: Arango s.n.: Spain, Islas Canarias (TFC 53.341). [= *Aeonium tab uliforme* × *A. ciliatum*, naturally occurring.]
- Aichryson ×cumbrense** Bañares, Vieraee 47: 152-154, ill., 2021. Typus: Bañares s.n.: Spain, Islas Canarias (TFC 48717). [= *Aichryson bollei* × *A. laxum* ssp. *laxum*, naturally occurring.]
- Cotyledon nielsii** N. R. Crouch & al., Bradleya 39: 133, ill., (pp. 132, 134), 2021. Typus: Jacobsen 3344: RSA, KwaZulu-Natal (PRE, NU).
- Crassula floribunda** (Friedrich ex Toelken) N. R. Crouch & al., Bradleya 39: 157, ill., (pp. 154, 160-162), 2021. Basionym: *Crassula multicava* ssp. *floribunda*.
- Crassula moniliformis** N. H. G. Jacobsen, CactusWorld 39(3): 197-200, ill., 2021. Typus: Jacobsen 7429: RSA, Western Cape (SCHG, COMPT, GRA).
- Crassula ×mortii** Gideon F. Smith & N. R. Crouch, Phytotaxa 487(1): 97-100, ill., 2021. Typus: Crouch 1298: RSA, Western Cape (PRU). [= *Crassula perforata* × *C.*

- rubricaulis*, naturally occurring.]
- Crassula sandrae** N. H. G. Jacobsen, Bradle ya 39: 236-238, ills., 2021. Typus: Jacobsen 7334: RSA, Western Cape (SCHG, GRA, PRE).
- Crassula sarcocaulis** var. **lignosa** (Burt Davy) J. M. H. Shaw, Bradleya 39: 249, ills. (pp. 247-248, 250), 2021. Basionym: *Crassula lignosa*.
- Crassula sarcocaulis** var. **parvisepala** (Schönl-land) J. M. H. Shaw, Bradleya 39: 248, ills. (pp. 250-251), 2021. Basionym: *Crassula parvisepala*.
- Crassula sarcocaulis* var. *rupicola* (Toelken) J. M. H. Shaw, Bradleya 39: 251, 2021. Basionym: *Crassula sarcocaulis* ssp. *rupicola*. *Nom. inval.* (ICN Art. 41.5). [Combination not formally published in the belief that it is an autonym for ssp. *rupicola*, b ut the autonym rule only applies to trinomials.]
- Crassula stylesii** Gideon F. Smith & N. R. Crouch, Phytotaxa 518(3): 227-228, ills. (pp. 224-225), 2021. Typus: Styles & al. 5898: RSA, KwaZulu-Natal (BNRH, NU).
- Echeveria incaica** Pino & al., Cact. Succ. J. (US) 93(4): 286-290, ills., 2021. Typus: Pino & al. 3276: Peru, Huancavelica (USM 324183).
- Echeveria intiwayta** Pino & Payano, Cact. Succ. J. (US) 93(4): 290-292, ills., 2021. Typus: Pino & Payano 3297: Peru, Junín (USM 324185).
- Echeveria islasiae** J. Reyes & L. E. Cruz-López, Brittonia 73(4): 365-367, ills., 2021. Typus: Reyes 8823: Mexico, Guerrero. (MEXU, MEXU).
- Echeveria kristenii** L. E. Cruz-López & J. Reyes, Brittonia 73(4): 375, ills. (pp. 376-377, 379), 2021. Typus: Etter & Kristen 3569: Mexico, Durango (MEXU, MEXU).
- Echeveria ostolazae** Pino & al., Cact. Succ. J. (US) 93(4): 293-296, ills., 2021. Typus: Pino & al. 3269: Peru, Huancavelica (USM 324182).
- Graptopetalum rosanevadoense** A. Vázquez & Acevedo-Rosas, Phytotaxa 596(2): 162-166, ills., 2021. Typus: Vázquez-García & al. 7990: Mexico, Jalisco. (IBUG, MO, NY). [Sphalm. 'rosanevadoensis'.]
- × **Greenonium garafiense** O. Arango, Viera ea 47: 94-95, ills. (pp. 95-96, 98), 2021. Typus: Arango s.n.: Spain, Islas Canarias (TFC 53.395). [= *Aeonium canariense* ssp. *christii* × *Greenovia diplocycla*, naturally occurring.]
- × **Greenonium gordonii** (T avormina & S. Tavormina ex O. Arango) O. Arango, Bot. Macaronés. 31: 28, 2021. Basionym: *Aeonium* × *gordonii*. [= *Gr eenovia millennium* × *Aeonium haworthii*. Given as *nom. no v.* with 3 homotypic names, of which *Aeonium* × *gordonii* O. Arango 2016 is the only valid name (with the parentage published as *Aeonium* (*Greenovia*) *dodrantale* × *A. haworthii*, but the *Greenovia* parent is now described as new species), and therefore interpreted as combination for this name.]
- × **Greenonium rochae** O. Arango, Bot. Macaronés. 31: 34-35, ills. (pp. 26-27), 2021. Typus: Arango s.n.: Spain, Islas Canarias (TFC 53.344). [= *Gr eenovia millennium* × *Aeonium urbicum*, naturally occurring.]
- Greenovia millennium** O. Arango, Bot. Macaronés. 31: 14-18, ills., 2021. Typus: del Arco & al. s.n.: Spain, Canary Islands (TFC 13.633).
- Kalanchoe** sect. **Invasores** Shtein & Gideon F. Smith, Phytotaxa 482(2): 105, 2021. [Typus: *Kalanchoe tubiflora* (Harvey) Raymond-Hamet.]
- Kalanchoe** ser. **Vilana** Shtein & Gideon F. Smith, Phytotaxa 482(2): 107, 2021. [Typus: *Kalanchoe beauverdii* Raymond-Hamet.]
- Kalanchoe** subgen. **Fernandesiae** Gideon F. Smith, Haseltonia 27: 5, 2021. [Typus: *Kalanchoe thyrsiflora* Harvey. *Nom. nov. pro Kalanchoe* [unranked] *Transvaalenses* A. Berger 1930. Publication date given as 28. 12. 2020 on the inside front cover, but stated to be 1. 3. 2021 in the digital version at BioOne.]
- Kalanchoe beauverdii** var. **pertinax** Shtein & Gideon F. Smith, Phytotaxa 482(2): 109, figs. 1D, 2E (pp. 94-95), 2021. Typus: Smith 1126: RSA (cult.) (PRU).
- Kalanchoe benbothae** Gideon F. Smith & N. R. Crouch, Phytotaxa 521(2): 109, ills. (p. 107), 2021. Typus: Botha 1: RSA, KwaZulu-Natal (PRU).
- Kalanchoe costantinii** var. **unguifera** Shtein & Gideon F. Smith, Phytotaxa 482(2): 111, figs. 1A, 2A, 4A, 6C (pp. 94-95, 97, 101), 2021. Typus: Dumetz 1302: Madagascar, To-liara (P).
- Kalanchoe darainensis** D.-P. Klein & Callman-der, Candollea 76(1): 119-122, ills., 2021. Typus: Ranirison 749: Madagascar, Antsir-anana (G, P, TEF).

Kalanchoe ×descoingsii Shtein & al., Phytotaxa 524(4): 249-250, ills. (pp. 239-240), 2021. Typus: Ikeda s.n. in Shtein 501: Madagascar, Toliara (TELA). [= *Kalanchoe laetivirens* × *K. tubiflora*, spontaneous garden hybrid from Madagascar.]

Kalanchoe ×forbesiae Gideon F. Smith & Hankey, Phytotaxa 528(5): 295-297, ills., 2021. Typus: Smith 1162: RSA (cult.) (PRU). [= *Kalanchoe lubangensis* × *K. sexangularis*, spontaneous garden hybrid from Pretoria BG.]

Kalanchoe guignardii var. **schistosepala** Shtein & Gideon F. Smith, Phytotaxa 482(2): 112, figs. 1G, 2G, 4F, 6B (p. 94-95, 97, 101), 2021. Typus: Richaud s.n. in Shtein 212: Madagascar, Toliara (TELA).

Kalanchoe ×leistneri Gideon F. Smith, Phytotaxa 509(2): 250-252, ills., 2021. Typus: Smith 1146: RSA (cult.) (PRU). [= *Kalanchoe sexangularis* var. *sexangularis* × *K. winteri*, obtained in cultivation.]

Kalanchoe perrieri Shtein & al., Phytotaxa 502(3): 270-271, ills. (figs. 1, 4D, 5F, pp. 261, 265-266), 2021. Typus: Richaud s.n. in Shtein 909: Madagascar, Toliara? (TELA, TELA).

Kalanchoe porphyrocalyx (Baker) Baillon ‘Sunny Balloon’ Gideon F. Smith & Shtein, Phytotaxa 478(2): 233, ills. (pp. 229, 233), 2021. [A horticultural selection, also found in the trade as *K. manginii* ‘Wendy Sunny Balloon’.]

Kalanchoe pubescens var. **tsinjoarivensis** (H. Perrier) Gideon F. Shtein & Shtein, Phytotaxa 514(2): 126, 2021. Basionym: *Kalanchoe miniata* var. *tsinjoarivensis*.

Kalanchoe torrejaccii Shtein & Gideon F. Smith, Phytotaxa 498(3): 206-207, ills., 2021. Typus: Torrebruno & Jacq s.n. in Shtein 580: Madagascar, Fianarantsoa (TELA, TELA).

Kalanchoe variifolia (Guillaumin & Humbert) Shtein & al., Phytotaxa 496(3): 233, ills. (pp. 229, 231), 2021. Basionym: *Kalanchoe rosei* ssp. *variifolia*.

Kalanchoe variifolia var. **seyrigii** (Boiteau & Mannoni) Shtein & al., Phytotaxa 496(3): 236, ills., 2021. Basionym: *Kalanchoe rosei* var. *seyrigii*. [Validity of the name depends on the interpretation of the validity of the basionym.]

Sedum xerophilum Pino & al., Cact. Succ. J. (US) 93(4): 298-300, ills., 2021. Typus: Pino & al. 3251: Peru, Huancavelica (USM 324174).

Tylecodon ectypus F. Grenier & van Jaarsveld, Haseltonia 27: 11-12, ills. (pp. 9-12), 2021. Typus: Van Jaarsveld 27904: RSA, Northern Cape (NBG). [Dated 18. 12. 2020 on the inside front cover, but publication date given as 1. 3. 2021 by BioOne for the digital version.]

EUPHORBIACEAE

Euphorbia agatheae Hae vermans & Hetterscheid, Phytotaxa 492(1): 4-6, ills., 2021. Typus: Haevermans & al. 331: Madagascar, Toliara (TAN, P).

Euphorbia antsingiensis (Cremers) Haevermans & Hetterscheid, Phytotaxa 492(1): 52, ills. (pp. 53-54), 2021. Basionym: *Euphorbia moratii* var. *antsingiensis*.

Euphorbia begardii (Cremers) Hae vermans & Hetterscheid, Phytotaxa 488(1): 24, fig. 22B-C (p. 32), 2021. Basionym: *Euphorbia primulifolia* var. *begardii*.

Euphorbia crassa (Cremers) Haevermans & Hetterscheid, Phytotaxa 492(1): 55, ills. (p. 56), 2021. Basionym: *Euphorbia enterophora* ssp. *crassa*.

Euphorbia crassicaulis (Rauh) Hae vermans & Hetterscheid, Phytotaxa 488(1): 27, fig. 23 (p. 33), 2021. Basionym: *Euphorbia francoisii* var. *crassicaulis*.

Euphorbia cylindroclada Haevermans & Hetterscheid, Phytotaxa 488(1): 57, fig. 43A, C-D (p. 58), 2021. Typus: Hetterscheid H.EU.056-T: Madagascar (cult.) (P).

Euphorbia durispina Hae vermans & Hetterscheid, Euphorbia World 17(2): 14-15, ills., 2021. Typus: Rakotomalaza 596: Madagascar, Toliara (P [given as MNHN]).

Euphorbia elburensis Baldesi & S. Carter, Nordic J. Bot. 39(10: e03360): 2-3, ills., 2021. Typus: Bavazzano 1207: Somalia, Galguduud Region (FT, FT).

Euphorbia fanjahiraensis Hae vermans & Hetterscheid, Phytotaxa 488(1): 32, figs. 25-26 (pp. 35-36), 2021. Typus: Humbert 2761: Madagascar, Fianarantsoa (P, P).

Euphorbia fuscoclada Haevermans & Hetterscheid, Phytotaxa 492(1): 9-12, ills., 2021. Typus: Bosser 16715: Madagascar, Mahajanga (P).

- Euphorbia graciliramulosa** Haevermans & Hettterscheid, Phytotaxa 492(1): 32-34, ill., 2021. Typus: Haevermans 626: Madagascar, Toliara (TAN, P).
- Euphorbia hardyi** (Rauh) Haevermans & Hettterscheid, Phytotaxa 488(1): 60, fig. 44 (p. 59), 2021. Basionym: *Euphorbia platyclada* var. *hardyi*.
- Euphorbia imperatae** (Leandri ex J.-P. Castillon & J.-B. Castillon) Haevermans & Hettterscheid, Phytotaxa 488(1): 16, figs. 15-16 (pp. 26-27), 2021. Basionym: *Euphorbia milii* var. *imperatae*.
- Euphorbia itampolensis** (Rauh) Haevermans & Hettterscheid, Phytotaxa 492(1): 36, ill. (p. 38), 2021. Basionym: *Euphorbia neobosseri* var. *itampolensis*.
- Euphorbia kalambatitrensis** Haevermans & al., Phytotaxa 492(1): 12-14, ill., 2021. Typus: Humbert 11796: Madagascar, Toliara (P).
- Euphorbia lakshminarasimhanii** Malpure & al., Nordic J. Bot. 39(7): e03142: 2-5, ill., 2021. Typus: Malpure 0035: India, Maharashtra (CAL, BSI, MH, SUK).
- Euphorbia linguifolia** Hettterscheid & al., Phytotaxa 497(2): 172, 2021. Typus: Humbert 3026: Madagascar, Fianarantsoa (P, P). [Nom. nov. pro *Euphorbia linguiformis* Hettterscheid & al. 2021 (nom. illeg., ICN Art. 53.1, non *E. linguiformis* McVaugh 1961).]
- Euphorbia linguiformis* Hettterscheid & al., Phytotaxa 492(1): 16, ill. (pp. 14-15), 2021. Typus: Humbert 3026: Madagascar, Fianarantsoa (P, P). Nom. illeg. (ICN Art. 53.1). [Non *Euphorbia linguiformis* McVaugh 1961. Renamed *E. linguifolia* Hettterscheid & al. 2021.]
- Euphorbia makayensis** Haevermans & Hettterscheid, Phytotaxa 492(1): 18-21, ill., 2021. Typus: Perrier de la Bâthie 9681: Madagascar, Toliara (P).
- Euphorbia mbuinzaensis** N. Wei & al., PhytoKeys 183: 27-30, ill., 2021. Typus: Sino-Africa Joint Investigation Team 007200: Kenya, Makueni County (HIB, EA, HIB, K).
- Euphorbia multibrachiata** Hettterscheid & al., Phytotaxa 492(1): 26-27, ill. (pp. 25-26), 2021. Typus: Spannring 2020-01: Madagascar, Mahajanga (TAN).
- Euphorbia neocastillonii** Houyelle, CactusWorld 39(4): 288-289, ill., 2021. Typus: Castillon 70: Madagascar, Mahajanga (TAN).
- Euphorbia pachyspina** Haevermans & Hettterscheid, Phytotaxa 488(1): 42, fig. 31 (p. 44), 2021. Typus: Decary 5652: Madagascar, Fianarantsoa (P).
- Euphorbia parvimedusae** Haevermans & Hettterscheid, Phytotaxa 492(1): 21-23, ill., 2021. Typus: Humbert 30239: Madagascar, Fianarantsoa (P).
- Euphorbia perrierioides** Hettterscheid & al., Phytotaxa 492(1): 27-30, ill., 2021. Typus: Perrier de la Bâthie 13229: Madagascar, Mahajanga (P, P).
- Euphorbia psammiticola* Haevermans & Hettterscheid, Phytotaxa 488(1): 51, figs. 39A, 40B-C (pp. 53-54), 2021. Typus: Humbert 11346: Madagascar, Toliara (P). Nom. illeg. (ICN Art. 52.1?). [The validity of the name depends on the correct typification of *E. leandriana*; the type given for *E. psammiticola* was designated as lectotype for *E. leandriana* in 2020.]
- Euphorbia pseudoaprica** J.-P. Castillon, CactusWorld 39(4): 290-292, ill., 2021. Typus: Humbert 11208: Madagascar, Toliara (P 220649).
- Euphorbia radfanensis** Al-Fatimi & N. Kilian, Euphorbia World 17(1): 9-10, ill. (pp. 5-11), 2021. Typus: Al-Fatimi MF-LH 002: Yemen, Lahij Governorate (Herb. M. Al-Fatimi, to be distributed).
- Euphorbia rigidispina** Haevermans & Hettterscheid, Phytotaxa 492(1): 43, ill. (p. 42), 2021. Typus: Aubriot & al. 63: Madagascar, Toliara (TAN, MICH, MO, P).
- Euphorbia sahyadrica** Sardesai & Malpure, Phytotaxa 500(4): 286-290, ill., 2021. Typus: Malpure 0030: India, Maharashtra (CAL, BSI, SUK).
- Euphorbia sobolifera** O. L. M. Silva & P. J. Braun, Eur. J. Taxon. 733: 78-80, ill., 2021. Typus: Brito 11: Brazil, Bahia (SP, HUEFS, RB, SPF).
- Euphorbia spannringii** Haevermans & Hettterscheid, Phytotaxa 492(1): 23-24, ill., 2021. Typus: Spannring 2020-15: Madagascar, Antananarivo (TAN).
- Euphorbia spirosticha** (Rauh & Buchloh) Haevermans & Hettterscheid, Euphorbia World 17(2): 10, ill. (pp. 6-9), 2021. Basionym: *Euphorbia decaryi* var. *spirosticha*.
- Euphorbia tananarivae** (Leandri ex J.-P. Castillon & J. B. Castillon) Haevermans & Hettterscheid, Phytotaxa 488(1): 21, fig. 19 (p. 30), 2021. Basionym: *Euphorbia splen-*

dens var. *tananarivae*.

Euphorbia tsihombensis Haevermans & Hettterscheid, Phytotaxa 492(1): 43-45, ills., 2021. Typus: Haevermans & Randrianjohany 60: Madagascar, Toliara (P, MO, TAN).

Euphorbia wernerii Haevermans & Hettterscheid, Phytotaxa 488(1): 53, figs. 41, 42 (pp. 55-56), 2021. Typus: Humbert 13732: Madagascar, Toliara (P).

GERANIACEAE

Pelargonium hammansbergense E. M. Marais & A. Le Roux, Phytotaxa 516(1): 94-95, ills., 2021. Typus: Le Roux & De Wet 1305: RSA, Western Cape (NBG, K, PRE).

Pelargonium roseopetalum E. M. Marais, Phytotaxa 516(1): 96-97, ills., 2021. Typus: Marais 456: RSA, Northern Cape (NBG, K, PRE).

HYACINTHACEAE

Eliokarmos rossouwii (U. Müller-Doblies & D. Müller-Doblies) Martínez-Azorín & al., Phytotaxa 524(1): 60, ills., 2021. Basionym: *Ornithogalum rossouwii*.

Ledebouria kikiae J. M. H. Shaw, CactusWorld 39(2): 164, ill., 2021. Typus: Lebatha 045: RSA, KwaZulu-Natal (PUC, PRE). *Nom. inval.* (ICN Art. 36.3). [Simultaneously published with *Drimiopsis kikiae*, which was subsequently validated l.c. 40(1): 69, 2022.]

MELASTOMATACEAE

Sonerila epedunculata J. Mathew, Species 20: 73-74, ills., 2019. Typus: Mathew 5113: India, Kerala (KUBH). [Omitted previously.]

MENISPERMACEAE

Stephania kaweesakii Jenjittikul & Ruchisan-sakun, Phytotaxa 464(3): 257-259, ills., 2020. Typus: Keeratikiat 307: Thailand, Kanchanaburi (QBG, BK, BKF).

MONTIACEAE

Rumicastrum nanum Carolin e x Hershkovitz, EcoEvoRxiv g6s3a: 5, 2021. Basionym: *Talinum nanum*. *Nom. inval.* (ICN Art. 29.1, 30.2?). [E-published as preprint, but without ISSN or ISBN.]

OXALIDACEAE

Oxalis mollendoensis J. M. H. Shaw, Cactus-World 39(1): 71, 2021. Typus: Johnston 6291: Peru, Arequipa (GH). [*Nom. nov. pro Oxalis carnosus* var. *hirta* R. Knuth 1930.]

PIPERACEAE

Peperomia ostolazae Pino & Samain, Quepo 35: 25-28, ills. (pp. 21-39), 2021. Typus: Ostolaza 991372: Peru: Apurimac (USM 325360).

Peperomia renzopalmae Pino & Ric. Fernández, Haseltonia 27: 123-125, ills., 2021. Typus: Palma s.n. in Fernández & Pino 252: Peru, Piura (USM). [Dated 28. 12. 2020 on the inside front cover, but publication date given as 1. 3. 2021 in the digital version on BioOne.]

Peperomia ricardofernandezii Pino & Samain, Haseltonia 27: 126-128, ills., 2021. Typus: Pino & Fernández 3153: Peru, Piura (USM). [Dated 28. 12. 2020 on the inside front cover, but publication date given as 1. 3. 2021 in the digital version on BioOne.]

PORTULACACEAE

Portulaca avinoamii García-Beltrán, Brittonia 73: 300, 2021. Typus: Klug 1214: Peru, Loreto (US). *Nom. illeg.* (ICN Art. 52.1). [*Nom. nov. illeg. pro Portulaca tuberculata* (Danin & H. G. Baker) Danin 2006 (*non P. tuberculata* León 1950); *P. daninii* Galasso & al. 2011 has priority.]

Portulaca oleracea var. **trituberculata** (Danin & al.) J.-M. Tison, Evaxiana 8: 224, 2021. Basionym: *Portulaca trituberculata*.

Portulaca waterbergensis Peckover, Cactus-World 39(4): 328, ills. (pp. 327-328, 330), 2021. Typus: Peckover 305: RSA, Limpopo (PRU).

RUSCACEAE

Dracaena ascendens var. **bhwirei** (R. H. Webb & L. E. Newton) Takawira-Nyenyanya & Thiede, Phytotaxa 524(4): 294, 2021. Basionym: *Sansevieria ascendens* var. *bhwirei*.

Dracaena brevifolia (L. E. Newton) Takawira-Nyenyanya & Thiede, Phytotaxa 524(4): 294, 2021. Basionym: *Sansevieria brevifolia*.

- Dracaena coleana** (T. G. Forrest) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 294, 2021. Basionym: *Sansevieria coleana*.
- Dracaena conduplicata** (T. C. Cole & T. G. Forrest) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 294, 2021. Basionym: *Sansevieria conduplicata*.
- Dracaena enchiridiofolia** (R. H. Webb & L. E. Newton) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 294, 2021. Basionym: *Sansevieria enchiridiofolia*.
- Dracaena forestii** (L. E. Newton & R. H. Webb) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 294, 2021. Basionym: *Sansevieria forestii*.
- Dracaena marachiensis** (T. G. Forrest) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 295, 2021. Basionym: *Sansevieria marachiensis*.
- Dracaena pfennigii** (Mbugua) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 295, 2021. Basionym: *Sansevieria pfennigii*.
- Dracaena pinguicula** fa. **disticha** (Pfennig ex A. Butler) Takawira-Nyenya & Thiede, Phytotaxa 254(4): 296, 2021. Basionym: *Sansevieria pinguicula* ssp. *disticha*. [Repeated by L. E. Newton, *Sansevieria* 47: 12, 2022.]
- Dracaena rugosifolia** (R. H. Webb & L. E. Newton) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 295, 2021. Basionym: *Sansevieria rugosifolia*.
- Dracaena spathulata** ssp. **sudwallensis** (R. H. Webb) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 295, 2021. Basionym: *Sansevieria concinna* ssp. *sudwallensis*.
- Dracaena suffruticosasp. longituba** (Pfennig) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 296, 2021. Basionym: *Sansevieria suffruticosa* var. *longituba*.
- Dracaena trifasciata** ssp. **sikawae** (R. H. Webb & Singer) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 295, 2021. Basionym: *Sansevieria trifasciata* ssp. *sikawae*.
- Dracaena vanillosa** (M. Burkart & Scharf) Takawira-Nyenya & Thiede, Phytotaxa 524(4): 296, 2021. Basionym: *Sansevieria vanillosa*.
- Sansevieria marachiensis** T. G. Forrest, Cact. Succ. J. (US) 92(3): 208, ill. (pp. 207, 209), 2021. Typus: Forrest 1515: Uganda, Maracha Distr. (MHU).
- Sansevieria vanillosa** M. Burkart & Scharf, *Sansevieria* Online 9(1: Article 4): 5, ill. (pp. 2-4), 2021. Typus: Pfennig 1192: Tanzania: Lindi Region (B 10 0482576).

BIBLIOGRAPHIA

Abbeele, D. van den & Wehner, C. (2021) Auf der Suche nach / In search of *Haworthiopsis limifolia* (Marloth) G. D. Rowley – Teil 1 / 2. Part 1 / 2. Avonia 39(1): 28-53, (3): 224-247, ills., map. [An expanded version of a paper first published 2019-2020 in instalments in the journal Haworthiad, vols. 33-34.]

Abraham, W.-R. (2021) *Notocactus uebelmanianus* Buining et Brederoo und Verwandte – Eine Bereicherung für jede Sammlung. Internoto 42(2): 31-37, ills. [Included for the illustrations.]

Abraham, W.-R. (2021) *Wigginsia sessiliflora* (Hooker) D. M. Porter und Verwandte I. *Wigginsia sessiliflora* und ihre Formen. Internoto 42(4): 91-103, ills., map. [Continued in l.c. 43(1), 2022.]

Acevedo-Rosas, R. & Cházaro-Basáñez, M. (2021) *Graptopetalum superbum* (Crassulaceae). CactusWorld 39(2): 99-102, ills.

Afferni, M. (2021) Aktualisierungen des "Schlüssel der *Sedum*-T axa der Alba-Serie" (Crassulaceae). Updates to the 'Key to the *Sedum* taxa of the Alba Series' (Crassulaceae). Avonia 39(4): 288-293, ills., key, map.

Afferni, M. (2021) Quelques "aspects polymorphiques" particuliers chez *Sedum dasyphyllum* en Italie. Cact. Succ. 13(2): 45-48, ills.

Afferni, M. (2021) Per antichi borghi medievali e *Sedum* nell'entroterra della provincia di Imperia. Pianta Grasse 41(1): 42-46, ills. [Included for the photographs and data for *Sedum fragrans*.]

Alharbi, S. A. & Al-Qthanin, R. N. (2021) Taxonomic revision of *Ceropegia* sect. *Huernia* (Asclepiadoideae, Apocynaceae) in Saudi Arabia with three new combinations. PhytoKeys 174: 47-80, ills., keys, maps. [Abridged Russian version in Kakt. Tolko 2021(3): 15-27, ills., 2021.] DOI

Almeida, E. M. de, Sader, M. A., Rodriguez, P. E., Loeuille, B., Felix, L. P. & Pedrosa-Harand, A. (2021) Assembling the puzzle: Complete chloroplast genome sequences of *Disocactus bahiensis* Britton & Rose and *Melocactus ernestii* Vaupel (Cactaceae) and their evolu-

tionary significance. Brazil. J. Bot. 44: 877-888, ills. DOI

Alves dos Santos, T. V., Batista Leite, K. R., Dórea, M., Ocampo, G., Melo-de-Pinna, G. F. & Oliveira, R. P. de (2021) Taxonomic differentiation among *Portulaca minensis* (Portulacaceae) and its allies occurring within the Espinhaço Range, Brazil, based on macro [sic!] and microcharacters. Pl. Syst. Evol. 307: 42, 17 pp., ills., map. DOI

Amaral, D. T., Minhós-Yano, I., Oliveira, J. V. M., Romeiro-Brito, M., Bonatelli, I. A. S., Taylor, N. P., Zappi, D. C., Marsola Moraes, E., Eaton, D. A. R. & Faria Franco, F. (2021) Tracking the xeric biomes of South America: The spatiotemporal diversification of Mandacaru cactus. J. Biogeogr. 48(12): 3085-3103, maps. DOI

Aneschi, G. & Magli, A. (2021) Cactusinhabitat booklet South America 2013/2021. Bologna (IT): Modo Infoshop. 134 pp. [Also published in digital form.] URL

Ancona, J. J., Pinzón, J. P., Ortiz Díaz, J. J., Ramírez Morillo, I., Tun-Garrido, J., Palma-Silva, C. & Till, W. (2021) Botanical history and typification in the *Illandsia ionantha* complex. Taxon 70(6): 1317-1326, ills. DOI

Anest, A., Charles-Dominique, T., Maurin, O., Millan, M., Edelin, C. & Tomlinson, K. W. (2021) Evolving the structure: Climatic and developmental constraints on the evolution of plant architecture. A case study in *Euphorbia*. New Phytol. 231(3): 1278-1295, ills. DOI

Appenzeller, O. (2021) Lose-Blatt-Sammlung des AfM. Lieferung 2021. [Mammillaria] *Nomina nuda*. Homburg (DE): O. Appenzeller. 51 loose sheets.

Appenzeller, O. (2021) Gedanken zu *M. [ammillaria] wildii* Dietrich und *M. wildiana* Otto. Mitteilungsbl. AfM 45(1): 10-14, ills.

Aquino, D., Moreno-Letelier, A., González-Botello, M. A. & Arias, S. (2021) The importance of environmental conditions in maintaining lineage identity in *Epithelantha* (Cactaceae). Ecol. & Evol. 11(9): 4520-4531, maps. DOI

- Arakaki, M., Speranza, P., Soltis, P. S. & Soltis, D. E. (2021)** (stated publication year: 2020) (e-published 2021) Examination of reticulate evolution involving *Haageocereus* and *Espostoa*. *Haseltonia* 27: 102-112, ill. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] DOI
- Arango Toro, O. (2021)** Confirmación experimental del rango de especie de *Aeonium mascaense* (*Crassulaceae*) (Addenda). *Bot. Macaronés.* 31: 33-40, ill. [Addenda to l.c. 29: 25-34, 2016.]
- Arango Toro, O. (2021)** Nuevas aportaciones al género *Aeonium* (*Crassulaceae*): Descripción de cinco notoespecies nuevas y ampliación corológica. *Islas Canarias. Vieraea* 47: 79-114, ill. DOI
- Arigela, R. K., Kabeer, A. A. K. & Sadasiviah, B. (2021)** Taxonomic notes on *Acrachne borii*, *Acrachne sundararajii*, *Brachystelma telangense* and *Striga scottiana*. *Species* 22(70): 330-337, ill.
- Arshed, M. J., Callado, J. R., Tandang, D., Naiki, A., Agoo, E. A. & Rodda, M. (2021)** The taxonomy of *Dischidia ruscifolia* (*Apocynaceae*, *Asclepiadoideae*) and the description of a new species, *Dischidia argentii*. *Taiwania* 66(4): 496-503, ill., map. DOI
- Aviekin, Y., Nuzhyna, N. & Gaidarzhly, M. (2021)** Peculiarities of the formation of the caudiciform part of *P. etopentia natalensis* (Schltr.) Bullock (*Apocynaceae*). *Adansonia*, sér. 3, 43(3): 19-30, ill. DOI
- Bacigalupo, A. A. A. (2021)** Nueva localidad de *Haageocereus tenuis* F. Ritter en el distrito de Ancón (Lima, Perú). *Quepo* 35: 6-18, ill., map.
- Bañares Baudet, A. (2021)** Híbridos de la familia *Crassulaceae* en las islas Canarias. VI. *Vieraea* 47: 141-154, ill. DOI
- Bauer, R. & Korotkova, N. (2021)** (stated publication year: 2020) (e-published 2021) Neotypification of *Rhipsalis rhombea* (*Rhipsalideae*, *Cactaceae*) and its taxonomic history. *Haseltonia* 27: 95-101, ill. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] DOI
- Bayer, B. (2021)** *Haworthia nortieri* from another angle. *Haworthiad* 35(3): 60-61, ill.
- Beck, D. (2021)** *Mammillaria gracilis* Pfeiffer am Standort beobachtet. *Mitteilungsbl. AfM* 45(3): 170-173, ill.
- Becker, R. W., Swanepoel, W., Jaarsveld, E. van, Gomes, A., Lages, F. & Cauwer, V. de (2021)** Euphorbias of three high mountaintops in the Kaokoveld Centre of Endemism in northern Namibia and southern Angola. *Euphorbia World* 17(3): 15-27, ill., maps.
- Beckert, K. (2021)** Eigenartiges Blühv erhalten bei einer *Weingartia frey-juckeri*, HJ 441. *Echinopseen* 18(1): 16-18, ill.
- Beckstrom, M., Fan, B. & Roberts, E. (2021)** *Arthrocereus rondonianus* hybrids. *Cact. Succ. J. (US)* 93(1): 49-52, ill. DOI
- Benadom, D. (2021)** *Operculicarya* monoecy. *Cact. Succ. J. (US)* 93(1): 41-43, ill. DOI
- Bercht, L. (2021)** Het geslacht *Weingartia*: Populaties met een LB-nummer (7). *Succulenta* 100(2): 72-76, ill. [Continued from l.c. 99(6), 2020.]
- Berka, L. (2021)** [Czech:] Do you know *Cleistocactus pungens* Ritter? *Kaktusy* 57(3): 84-86, ill. [Hungarian translation in *Kakt.-Világ* 47(3): 155-157, ill., 2023.]
- Berresford, P. (2021)** *Schlumbergera* – a long journey to the windowsill. *CactusWorld* 39(3): 225-236, ill., map.
- Bint, P. (2021)** The genus *Gibbaeum* – sorely in need of a revision. *CactusWorld* 39(4): 271-282, ill., maps.
- Bitencourt, C., Nürk, N. M., Rapini, A., Fishbein, M., Simões, A. O., Middleton, D. J., Meve, U., Endress, M. E. & Liede-Schumann, S. (2021)** Evolution of dispersal, habit, and pollination in Africa pushed *Apocynaceae* diversification after the Eocene-Oligocene climate transition. *Frontiers Ecol. Evol.* 9: 719741, 19 pp., ill. DOI
- Blaczkowski, T. (2021)** Auf der Suche nach *Loebivia arachnacantha*. *Echinopseen* 18(1): 77-94, ill. [First published in *Swiat Kakt.* 55(2): 77, 2021.]
- Blum, W. (2021)** Ein neuer Neotypus für *Echinocereus weinbergii* Weingart. *Echinoce-renfreund* 34(4): 127-129, ill.

Bockemühl, J. (2021) *Nopalxochia horichii* (Kimmnach), eine vermutliche Hybride vom Naturstandort in Costa Rica. EPIG 84: 22-24, ill.

Böcker, A. (2021) *Mammillaria pennispinosa* Krainz. Mitteilungsbl. AfM 45(1): 52-57, ills.

Borghi, P. (2021) *Adromischus*. Introduzione al genere e due reportage di viaggio. Piante Grasse 40(3: Speciale): 1-103, ills., map. [Dated 2020 on the cover, received at ZSS 1. 3. 2021. Includes an illustrated synopsis of the species.]

Bosma, W. (2021) Die Kleinen aus Indien. The small ones from India. Stapeliad J. 2021(1): 15-21, ills. [Included for the illustrations of Indian succulent *Apocynaceae*.]

Brand, T. (2021) *Pelargonium echinatum*. Kakt. and. Sukk. 72(7): 205-208, ills. [Included for the illustrations.]

Braun, P. J. (2021) Neues und Wissenswertes zu Kakteen Brasiliens: *Discocactus zehntneri* subsp. *buenekei* in der Boqueirão da Onça, Bahia. Kakt. and. Sukk. 72(5): 129-138, ills.

Braun, P. J., Esteves Pereira, E. & Esteves Pereira, R. (2021) *Cereus adelmarii* – wiederentdeckt in den südamazonischen Campos de Murundus am Rio Araguaia (Mato Grosso, Brasilien). Kakt. and. Sukk. 72(7): 209-214, ills.

Breckwoldt, K. & Breckwoldt, S. (2021) Am Fundort von *Echinocereus llanurensis* [sic!] bei San Carlos (Sonora). Echinocereenfreund 34(3): 120-122, ills. [Volume erroneously given as 33. Included for the illustrations.]

Breckwoldt, S. & Breckwoldt, K. (2021) *Echinocereus llanurensis* [sic!]. Kakt. and. Sukk. 72(1): 7-10, ills. [Included for the illustrations.]

Bregman, R. (2021) Het *Thelocactus conocheolus*-complex. Succulenta 100(3): 114-120, ills.

Breman, F. C., Chen, G., Snijder, R. C., Schranz, M. E. & Baller, F. T. (2021) Repeatome-based phylogenetics in *Pelargonium* section *Ciconium* (Sweet) Harvey. Genome Biol. Evol. 13(12): eva269, 18 pp. DOI

Brenskelle, L., Barve, V., Majure, L. C., Guralnick, R. P. & Li, D. (2021) Analyzing a phenological anomaly in *Yucca* of the southwestern United States. Sci. Rep. (Nature) 11: 20819, 10 pp., maps. DOI

Breslin, P. B. (2021) [Polish:] Why mess with *Mammillaria*? Kakt. Inne 12(4): 124-129, ills. [Summary of results published by Breslin et al., Taxon 70(2): 308-323, 2021.]

Breslin, P. B., Wojciechowski, M. F. & Majure, L. C. (2021) Molecular phylogeny of the Mammilloid clade (*Cactaceae*) resolved the monophyly of *Mammillaria*. Taxon 70(2): 308-323, ills. DOI

Brilhante, M., Roxo, G., Catarino, S., Santos, P. dos, Reyes-Betancort, J. A., Caujapé-Castells, J., Menezes Sequeira, M., Talhinhãs, P. & Romeiras, M. M. (2021) Diversification of *Aeonium* species across Macaronesian Archipelagos: Correlations between genome-size variation and their conservation status. Frontiers Ecol. Evol. 9: 607338, 14 pp., ills., maps. DOI

Brzezicka, E. & Kozieradzka-Kiszkurno, M. (2021) (e-published 2020) Developmental, ultrastructural and cytochemical investigations of the female gametophyte in *Sedum rupestre* L. (*Crassulaceae*). Protoplasma 258: 529-546, ills. [Digitally published Nov. 2020, print version 2021.] DOI

Budweg, H.-G. (2021) Aus historischen Neubeschreibungen (8). Schweinfurt ex Baker (1875): *Sansevieria ehrenbergii*. Sansevieria Online 9(2): 24-37, ills., map.

Budweg, H.-G. & Mansfeld, P. A. (2021) Aus historischen Neubeschreibungen (7). Otto Warburg (1901): *Sansevieria perrottii*. Sansevieria Online 9(1): 22-29, ills., map.

Buffel, A. (2021) *Myrmecodia beccarii* Hook.f. 1886. Cact. Succ. Rev. 28: 7-14, ills., map. [Included for the illustrations.]

Burger, S. (2021) *Eriosyce occulta* – a field report. CactusWorld 39(2): 119-121, ills.

Burkart, M. & Scharf, U. (2021) *Sansevieria vanillosa*, ein Name für eine schon länger bekannte Art aus Tansania, und ein kurzer Überblick über die subcapitaten Arten. Sansevieria Online 9(1): 30-39, ills., key, map [Paper first published separately on 23. 3. 2021 as Vol. 9 (1: Article 4) in the journal's digital English edition.]

Busch, L. (2021) Lesermeinungen: Die *Aylostera malochii* in Kultur. Echinopseen 18(1): 65-68, ills.

- Butler, A. (2021)** The Specks *Sansevieria* localities. *Sansevieria* 46: 2-11, ill. [Continued l.c. 47, 2022.]
- Byalt, V. V., Ryff, L. E. & Svirin, S. A. (2021)** *Crassulaceae. Sedum sediforme*. In: Raab-Straube, E. von & Raus, T. (eds.): Euro+Med-Checklist Notulae, 14. Willdenowia 51(3): 359-360, ill. DOI
- Campus, G. (2021)** Sezioni *Hoya* o classificazione intragenica. *Stemma Notiz. Assoc. Ital. Hoya* 3(11): 5-23, ill., (12): 33, 2022 ('2021') [erratum].
- Cardoso, W. C., Negrão, R., Dutra, V. F. & Sakuragui, C. M. (2021)** Rediscovering *Rhipsalis hoelleri* (*Cactaceae*), a critically endangered species from Brazilian Atlantic Forest. *Phytotaxa* 498(1): 63-68, ill., map. DOI
- Castillon, J.-P. (2021)** Correction of errors concerning *Euphorbia leandriana* Boiteau (*Euphorbiaceae*) and related species. *Euphorbia World* 17(2): 28-36, ill., map.
- Castillon, J.-P. (2021)** The spiny euphorbias of southern Madagascar: The informal group of *Euphorbia rubrostriata* Drake. *Euphorbia World* 17(3): 28-33, ill., map.
- Castro, J. P., Moraes, A. P., Chase, M. W., Santos, A. M. S., Batista, F. R. C. & Felix, L. P. (2020)** Karyotype characterization and evolution of chromosome number in *Cactaceae* with special emphasis on subfamily *Cactoideae*. *Acta Bot. Brasil.* 34(1): 135-148, ill. [Omitted previously.] DOI
- Cech, R. (2021)** *Gymnocalycium cabrerense* Schädlich, Bercht, Melojer. *Kaktusy* 57(2): 54-58, ill.
- Cervantes, C. R., Hinojosa-Alvarez, S., Wegier, A., Rosas, U. & Arias, S. (2021)** Evaluating the monophyly of *Mammillaria* series *Supertextae* (*Cactaceae*). *PhytoKeys* 177: 25-42, maps. DOI
- Chang, H., Zhang, L., Xie, H., Liu, J., Xi, Z. & Xu, X. (2021)** The conservation of chloroplast genome structure and improved resolution of infrafamilial relationships of *Crassulaceae*. *Frontiers Pl. Sci.* 12: 631884, 13 pp. DOI
- Cházaro-Basáñez, M., Acevedo-Rosas, R. & Badia i Pascual, A. (2021)** *Sedum mor gani-anum* E. Walther (*Crassulaceae*): Further observations. *Cact. Succ. J. (US)* 93(3): 196-200, ill., map. [First author misspelled "Chazaro-Basáñez".] DOI
- Chikin, S. (2021)** [Russian]: *Cleistocacti* of Bolivia. *Kakt.-Klub* 5(2): 31-41, ill.
- Chinnock, B. & Arthur, C. (2021)** Notes on *Circandra serrata*. *Mesemb Study Group Bull.* 36(3): 54-56, ill.
- Choi, K. S., Weng, M.-L., Ruhlman, T. A. & Jansen, R. K. (2021)** Extensive variation in nucleotide substitution rate and gene/intron loss in mitochondrial genomes of *P. elargonium*. *Molec. Phylogen. Evol.* 155: 106986, 10 pp. DOI
- Cieza Padilla, N. (2021)** (stated publication year: 2020) *Corryocactus erici-mar ae* Cieza, una nueva especie de *Corryocactus* de Cajamarca. *Quepo* 34: 37-42, ill. [Dated 2020 but only distributed mid-January 2021.]
- Cieza Padilla, N. (2021)** (stated publication year: 2020) *Matucana tuber culata* (Donald) Bregman ... nuevos aportes. *Quepo* 34: 68-70, ill. [Dated 2020 but only distributed mid-January 2021.]
- Clary, K. H. & Adams, T. P. (2021)** *Yucca carrii* (*Asparagaceae*), a new species from the northern Gulf Coast Prairie of Texas. *Lundellia* 24(1): 11-23, ill. [Includes data on *Yucca tenuistyla*.] DOI
- Collins, P. (2021)** *Frerea indica* or Shindal Makadi, a strange stapeliad. *Asklepios* 127: 49-62, ill., map.
- Corona, S. (2021)** *Hoya elliptica*. *Stemma Notiz. Assoc. Ital. Hoya* 3(11): 29-31, ill. [Included for the illustrations.]
- Costanzo, M. (2020)** Note di aggiornamento a: *Sempervivum* & *Jovibarba*. Guida illustrata ai taxa del territorio italiano. sine loco (IT): *Cactus & Co. Libri in rete*. 22 pp., ill. [Supplement to the digital book published 2017 ('2016').] URL
- Costanzo, M. (2021)** *Sempervivum* & *Jovibarba*. Italienische Bergarten / Italian mountain species. 1. Die grossblumige Hauswurz / The large-flowered houseleek. *Avonia* 39(3): 204-209, ill.
- Cristini, M. (2021)** *Rhodiola rosea* Linné. *Cact. Succ.* 13(1): 2-5, ill. [Included for the illustrations.]

Cristini, M. (2021) *Sedum sedoides* (Decaisne) Pau ex Vidal y Lopez. *Piante Grasse* 41(1): 24-40, ills., map.

Cristini, M. (2021) The distribution of *Aeonium spathulatum* on Gran Canaria. *Sedum Soc. Newslett.* 138: 58-62, ills., maps.

Crouch, N. R. & Styles, D. G. A. (2021) (stated publication year: 2020) (e-published 2021) The dioecious *Adenia natalensis* W. J. de Wilde (*Passifloraceae*): Discovery and description of the female. *Haseltonia* 27: 77-80, ills. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] DOI

Crouch, N. R., Smith, G. F. & Styles, D. G. A. (2021) *Crassula floribunda* (Friedrich ex Toelken) N. R. Crouch, Gideon F. Sm. & D. Styles (*Crassulaceae*), a new status for a species endemic to central KwaZulu-Natal province, South Africa. *Bradleya* 39: 153-162, ills., map. DOI

Deubelbeiss, R. (2021) Die "alten" Arten der Gattung *Notocactus*. *Internoto* 42(1): 24-28, (2): 38-42, (3): 73-79, (4): 109-113, ills.

Diagre-Vanderpelen, D. (2021) Quelques mots sur les *Echinomastus* des États-Unis. *Cact. Succ.* 13(1): 6-13, ills.

Dimmitt, M. & Edwards, T. (2021) *Adenium* taxonomy and nomenclature: Progress creates more questions. *Cact. Succ. J. (US)* 93(4): 252-266, ills., map. DOI

Dogan, M., Pouch, M., Mandáková, T., Hlousková, P., Guo, X., Winter, P., Chumová, Z., Niekerk, A. van, Mummenhoff, K., Al-Shehbaz, I. A., Mucina, L. & Lysak, M. (2021) Evolution of tandem repeats is mirroring post-polyploid cladogenesis in *Heliophila* (*Brassicaceae*). *Frontiers Pl. Sci.* 11: 607893, 18 pp., ills. DOI

Dráb, I. (2021) [Czech:] *Idria columnaris* - Martian beings between the Pacific and the Sea of Cortez. *Adenium* 34: 4-9, ills. [Included for the illustrations of seeds and seedling plants.]

Dráb, I. (2021) [Czech:] *Escobaria hesteri* (Y. Wright) F. Buxbaum - a miniature by the big road. *Cactaceae etc.* 31(2): 57-59, ills. [Included for the illustrations.]

Dráb, I. (2021) [Czech:] *Thelocactus leucacanthus* (Zucc. ex Pfeiff.) Britton et Rose var. *leucacanthus* at Puente Tasquillo - La Cruz, Hidalgo (Mexico). *Cactaceae etc.* 31(3): 116-120, ills. [Included for the illustrations.]

Duffy, K. J., Mdalose, Z. M. & Johnson, S. D. (2021) Sexual conflict in hermaphroditic flowers of an African *Aloe*. *Int. J. Pl. Sci.* 182(3): 238-243, ills. DOI

Earlé, R. (2021) *Lithops aucampiae* subsp. *euniceae* in habitat. *Mesemb Study Group Bull.* 36(1): 15-16, ills.

Earlé, R. (2021) *Lithops lesliei* subsp. *lesliei* var. *minor* in habitat. *Mesemb Study Group Bull.* 36(1): 17-18, ills.

Earlé, R. & Round, J. E. (2021) *Lithops* in habitat and cultivation. Lavenham (GB): The Lavenham Press / published by the authors. 405 pp., ills., maps.

Efremova, N. (2021) [Russian:] On viviparous cactus fruits. *Kakt. Tolko* 2021(3): 28-36, iii, ills.

Efremova, N. (2021) [Russian:] The genus *Turbinicarpus*: Our ideas and molecular-genetic research. *Kakt. Tolko* 2021(4): 6-32, ills.

Efremova, N. (2021) [Russian:] The genus *Epithelantha* according to modern perception. *Kakt. Tolko* 2021(4'): 1-35, ills., map.

Ellmouni, F. Y., Albach, D. C., Fouad, M. S. & Fakhr, M. A. (2021) Genetic diversity analysis reveals weak population structure in invasive *Trianthema portulacastrum* L. at Fayoum depression, Egypt. *Turk. J. Bot.* 45(6): 541-552, ills., map. DOI

El-Raouf, H. S. A. (2021) Taxonomic significance of leaves in family *Aizoaceae*. *Saudi J. Biol. Sci.* 28(1): 512-522, ills. DOI

Engel, T. & Blum, W. (2021) Noch wenig bekannt: *Echinocereus bakeri*. *Kakt. and. Sukk.* 72(6): 181-185, ills. [Abridged Russian version in *Kakt. Tolko* 2021(2): 11-15, ills., 2021.]

Eslamieh, J. (2017) The genus *Boswellia*. Preservation through horticulture. Fort Collins (US): A Book's Mind. [6] + iv + 176 pp., ills., maps. [Considered to represent the second edition of the book published 2011 under a slightly different title. Omitted previously.]

- Espejo-Serna, A., López-Ferrari, A. R., Mendoza-Ruiz, A., García-Cruz, J., Ceja-Romero, J. & Pérez-García, B. (2021)** Mexican vascular epiphytes: Richness and distribution. *Phytotaxa* 503(1): 124 pp., ill., map. DOI
- Esterhuizen, E. (2021)** Field observations: Albertinia the transition area of *Haworthia retusa* to *Haworthia pygmaea* or evidence of a continuum? *Haworthiad* 35(3): 70-74, ill., map.
- Ettelt, J. & Sönnermo, H. (2021)** *Euphorbia weberbaueri* Mansf. *Avonia* 39(2): 148-151, ill.
- Fabritzek, A. G., Griebeler, E. M. & Kade-reit, J. W. (2021)** Hybridization, ecogeographical displacement and the emergence of new lineages – a genotyping-by-sequencing and ecological niche and species distribution modelling study of *Sempervivum tectorum* L. (Houseleek). *J. Evol. Biol.* 34(5): 830-844, maps. DOI
- Fachardo, A. L. S. & Sigrist, M. R. (2020)** (e-published 2019) Pre-zygotic reproductive isolation between two synchronopatric *Opuntia* (Cactaceae) species in the Brazilian Chaco. *Pl. Biol. (Stuttgart)* 22(3): 487-493. [Omitted previously.] DOI
- Fantinati, M. R., Soffiatti, P. & Calvente, M. (2021)** A new phylogenetic hypothesis for *Cereinae* (Cactaceae) points to a monophyletic subtribe. *Syst. Bot.* 46(3): 689-699. DOI
- Fickenscher, K. (2021)** *Aylostera* & *Rebutia*. Blütenwunder aus den Anden. Adelsdorf (DE): Deutsche Kakteen-Gesellschaft e.V. 176 pp., ill., maps. [= Sonderausgabe der Deutschen Kakteen-Gesellschaft e.V. A separate erratum sheet for p. 33 (corrected caption to map 4) was distributed by the DKG.]
- Fickenscher, K. (2021)** Vergleich von *Aylostera malochii*, *Aylostera leucanthema* und *Aylostera mamillosa*. *Echinopsean* 18(1): 69-76, ill.
- Figueiredo, E. & Smith, G. F. (2020)** Yet two more firsts for Mary E. Barber (1818–1899), and a new synonym for the largest aloe, *Aloidendron barberae* (Asphodelaceae subfam. Aloodeae). *Phytotaxa* 468(1): 155-158, ill. [Omitted previously.] DOI
- Flanagan, K. (2021)** *Coryphantha* overview no. 14. *J. Mammillaria Soc.* 61(1): 27-34, ill. [On the variability of *Coryphantha werdermannii* and *C. echinus*.]
- Fleischer, G. (2021)** Eine Reise zur Heimat des Lavakaktus – *Brachycereus nesioticus* auf den Galapagosinseln. *Kakt. and. Sukk.* 72(8): 235-240, ill., map. [Included for the illustrations including flower and fruit. Abridged Russian version in *Kakt. Tolko* 2021(3): 7-11, ill., 2021.]
- Fleischmann, A. (2021)** On the infrageneric classification of *Pinguicula*. *Carni v. Pl. Newslett.* 50(4): 174-188, ill. DOI
- Fraga, D. A., Carvalho, A. F. de, Barbosa Ribeiro, C. J., Santana, R. S., Machado, M. C. & Lacorte, G. A. (2020)** Establishing population boundaries and conservation proposals for *Coleocephalocereus purpureus*, a critically endangered cactus species microendemic from Caatinga biome. *J. Nat. Conservation (Jena)* 55: 125823, 8 pp., map [Omitted previously.] DOI
- Franco-Estrada, D., Sánchez, D., Terrazas, T. & Arias, S. (2021)** Phylogenetic analysis of *Peniocereus* (Cactaceae, Echinocereae) based on five chloroplast DNA markers. *Brazil. J. Bot.* 44(4): 903-916.. DOI
- Freitas, J., Ferreira Alves, L. I., Zappi, D. C., Mendonça de Almeida, E., Peraza-Flores, L. N., Oliveira Jordão do Amaral, D., Pereira Araújo, D. B. & Rabelo da Costa Batista, F. (2021)** Novelities in Cactaceae from Eastern Brazil: Adding two new species and one new nothospecies to *Tacinga* (Opuntioideae). *Phytotaxa* 490(3): 239-252, ill., maps, key. [Includes a key to all species of the genus.] DOI
- Gallo, L. (2021)** The true identity of *Sedum meehanii* (Crassulaceae). *Phytotaxa* 482(2): 213-214. DOI
- Gapon, V. (2021)** [Russian]: Once more on ... *Gymnocalycium prochazkianum*? *Kakt.-Klub* 5(1): 59-65, ill., map.
- Gapon, V. & Vikulov, V. (2021)** [Russian:] *Gymnocalycium armatum* F. Ritter. *Kakt.-Klub* 5(1): 37-52, ill., maps.
- García-Beltrán, J. A., Barrios, D. & Bécquer, E. R. (2021)** Revisión taxonómica de *Portulacaceae* en Cuba. *Brittonia* 73(3): 274-303, ill., key. DOI
- García-Beltrán, J. A., Barrios, D., Bécquer, E. R. & Arias, S. (2021)** Seed morphology of *Portulaca* (Portulacaceae) in Cuba and taxonomic implications. *Phytotaxa* 513(2): 99-117, ill.,

key. [DOI](#)

Gardner, E. M., Garner, M., Cowan, R., Dodsworth, S., Epitawalage, N., Arifiani, D., Sahromi, S., Baker, W. J., Forest, F., Maurin, O., Zerega, N. J. C., Monro, A. K. & Hipp, A. L. (2021) Repeated parallel losses of inflexed stamens in *Moraceae*: Phylogenomics and generic revision of the tribe *Moreae* and the reinstatement of the tribe *Olmedieae* (*Moraceae*). *Taxon* 70(5): 946-988, ill., key. [DOI](#)

Gertel, W. (2021) A life devoted to *Sulcorebutia*. Collection of pictures – Volume 1 / Volume 2 / Volume 3. sine loco (FR): Au Cactus Franco-phone Bibliothèque numérique. 287 + 291 + 283 + 289 pp., ill. [All volumes published as e-books.] [URL](#)

Gertel, W. & Jucker, H. (2021) *W eingartia* oder doch vielleicht *Sulcorebutia* ? Teil 2. *Echinopsean* 18(1): 19-34, ill. [Part 1 published 2013 on the web page of the first author.]

Ghaffari, S. M., Zare, A. G., Asadi Corom, F. & Sedaghati, M. (2021) Chromosome studies on some species of Angiosperms from Iran. *Rostaniha* 22(2): 223-229, ill. [On the cytology of *Umbilicus tropaeolifolius*.] [DOI](#)

Gomes, V. G. N., Koroiva, R., Cassimiro, C. A. L. & Rabelo da Costa Batista, F. (2021) Endangered globose cactus *Melocactus lanssensianus* P. J. Braun depends on lizards for effective seed dispersal in the Brazilian Caatinga. *Pl. Ecol.* 222(12): 1375-1387, ill., map. [DOI](#)

González, V. V., Gorostiaque, P., Ortega-Baes, P., Galati, B. G. & Ferrucci, M. S. (2021) Nectary structure is not related to pollination system in *Trichocereae* cactus from northwest Argentina. *Anais Acad. Brasil. Ci.* 93(Suppl. 4): e20201401, 20 pp., ill. [DOI](#)

González-Sánchez, J., Santiago-Sandoval, I., Lara-González, J. A., Colchado-López, J., Cervantes, C. R., Vélez, P., Reyes-Santiago, J., Arias, S. & Rosas, U. (2021) Growth patterns in seedling roots of the Pincushion Cactus *Mammillaria* reveal trends of intra- and inter-specific variation. *Frontiers Pl. Sci.* 12: 750623, 11 pp., ill., map. [DOI](#)

Gorelick, R. (2021) *Ec hinomastus intertextus*. *Cact. Succ. J. (US)* 93(3): 189-195, ill. [DOI](#)

Gorelick, R. (2021) *Glandulicactus uncinatus* var. *wrightii* at Anthony Gap. *CactusWorld* 39(4): 261-270, ill.

Gorelick, R. (2021) (stated publication year: 2020) (e-published 2021) The *Coryphantha sneedii* complex is indeed complex and continuously intergrades with *Coryphantha vivipara*. *Haseltonia* 27: 40-59, ill. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] [DOI](#)

Gorelick, R. (2021) *Mammillaria lasiacantha* and similar looking species at the Anthony Gap, New Mexico. *J. Mammillaria Soc.* 61(4): 129-132, ill. [Included for the illustrations.]

Gouda, E. J. (2021) Cultivating *Tillandsia kausii* [sic!, for *klausii*], how large can it be? *J. Bromeliad Soc.* 71(4): 245-249, ill. [Included for the illustrations.]

Granados-Aguilar, X., Granados Mendoza, C., Cervantes, C. R., Montes, J. R. & Arias, S. (2021) Unraveling reticulate evolution in *Opuntia* (*Cactaceae*) from Southern Mexico. *Frontiers Pl. Sci.* 11: 606809, 13 pp., ill., map. [DOI](#)

Greulich, M. (2021) Ein Besuch des Typstandorts von *Agave utahensis* subsp. *kaibabensis* (McKelvey) Gentry. *Berliner Kakt.-Blätt.* 21: 34-44, ill.

Greulich, M. (2021) *Agave parryi* oder *Agave havardiana* ? *Kakt. and. Sukk.* 72(4): 101-102, ill.

Gunarto, F. (2021) *Sansevieria hallii*. Inflorescence photo essay. *Sansevieria* 45: 23-24, ill. [Included for the illustrations.]

Gutiérrez, A. V., Filippi, C. V., Aguirre, N. C., Puebla, A. F., Acuña, C. V., Taboada, G. M. & Ortega-Baes, F. P. (2021) Development of novel SSR molecular markers using a Next-Generation Sequencing approach (ddRADseq) in *Stetsonia coryne* (*Cactaceae*). *Anais Acad. Brasil. Ci.* 93(Suppl. 3): e20201778, 15 pp. [DOI](#)

Hadrava, J. (2021) [Czech:] *Echinocereus palmeri* – dwarf of the genus. *Kaktusy* 57(1): 20-25, ill., map.

Hadrava, J. (2021) [Czech:] Hairy Echinocerei from section *Capillarispinii*. *Kaktusy* 57(2): 47-53, ill., map.

Hadrava, J. (2021) [Czech:] *Echinocereus coccineus* subsp. *rosei*, or a popular mistake. *Kaktusy* 57(3): 87-90, ill., map.

Hadrava, J. (2021) [Czech:] Lace or tufted cactus? *Kaktusy* 57(4): 122-128, ill., map. [On *Echinocereus reichenbachii* ssp. *caespitosus*.]

Hadrava, J. (2021) [Czech:] The Echinocerei of Arizona. *Kaktusy* 57(special 1): 1-35, ill., maps. [Also published in a concurrent German edition.]

Haevermans, T. & Hetterscheid, W. (2021) Taxonomic decisions and novelties in the informal *Euphorbia decaryi* group from Madagascar. *Euphorbia World* 17(2): 6-19, ill., map, key.

Haevermans, T. & Hetterscheid, W. L. A. (2021) Novelties in Malagasy *Euphorbia* (Euphorbiaceae). *Phytotaxa* 488(1): 1-63, ill., maps. DOI

Haevermans, T. & Hetterscheid, W. L. A. (2021) Taxonomic changes and new species in Malagasy *Euphorbia* (Euphorbiaceae). *Phytotaxa* 492(1): 1-61, ill., maps, keys. DOI

Hanáček, P. & Hadamovský, J. (2021) [Czech:] A revised concept of the genus *Ceropegia* based on molecular phylogenetic analysis. Part 2. The original genera of the Stapeliads. *Adenium* 34(Speciál 2): 3-60, ill.

Hanáček, P., Hadamovský, J. & Matulová, R. (2021) [Czech:] A revised concept of the genus *Ceropegia* based on molecular phylogenetic analysis. Part 1. The original genera *Ceropegia* and *Brachystelma*. *Adenium* 34(Speciál [1]): 5-40, ill.

Hassan, M. H. A., Elwekeel, A., Moawad, A., Afifi, N., Amin, E. & El Amir, D. (2021) Phytochemical constituents and biological activity of selected genera of family *Crassulaceae*: A review. *South Afr. J. Bot.* 141: 383-404. DOI

Heiduk, A., Styles, D. G. A. & Meve, U. (2021) Long-lost *Ceropegia rudatisii* (Apocynaceae – Asclepiadoideae) – rediscovered and redescribed after 100 years. *Phytotaxa* 498(2): 123-130, ill. DOI

Heijnsdijk, T. (2021) *Pleiospilos bolusii*: Het bonkig-stippelsteenslag. *Succulenta* 100(1): 3-13, ill.

Heijnsdijk, T. (2021) *Faucaria tigrina*: Het tijgerbekje. *Succulenta* 100(2): 51-59, ill., map.

Heijnsdijk, T. (2021) *Ariocarpus retusus*: De puntige rozetcactus. *Succulenta* 100(3): 99-111, ill.

Heijnsdijk, T. (2021) *Larryleachia marlothii*: Het geruit vetzuiltje. *Succulenta* 100(4): 147-163, ill.

Heijnsdijk, T. (2021) *Ariocarpus kotschoubeyanus*: De kleine rozetcactus. *Succulenta* 100(5): 195-207, ill.

Heijnsdijk, T. (2021) *Fenestraria rhopalophylla*: Het knotbladig-vensterkruid en de subspecies *aurantiaca*: Het oranjebloemig-vensterkruid. *Succulenta* 100(6): 243-253, ill., map.

Henderson, F. (2021) *Crassulaceae* of Kyrghyzstan. *Sedum Soc. Newslett.* 139: 85-93, ill. (incl. front cover).

Henssen, H.-H. (2021) *Notocactus* RP 1199. *Internoto* 42(2): 45-47, ill. [On *Parodia nothominuscula* ssp. *gravior* (as "*Notocactus minusculus* var. *gravior*").]

Henssen, H.-H. (2021) *Notocactus securituberculatus* var. *miniatispinus* RP 179. *Internoto* 42(4): 118-119, ill.

Herbert-Dorset, L. A., Dzib, G., Hammel, B. E., Chi-Manzanero, B. H., Canto-Canché, B. B., García-Sosa, K., Richomme, P., Derbré, S. & Peña-Rodríguez, L. M. (2021) *Clusia suborbicularis* is not a synonym of *Clusia flava*: Molecular and metabolomic evidence. *Taxon* 70(6): 1229-1238, maps. DOI

Hershkovitz, M. A. (2021) Is the outcome of perianth fate evolution predictable? *Portulacineae* perianth fate as a model system for analysis of accessibility, evolvability, integration, modularity, strategy, natural selection, and evolutionary trajectory. sine loco: ResearchGate, digitally published by the author. 59 pp. [Identified as "Uncompleted Version" in the citation paragraph on p. 2.] URL

Hoeve, W. ten (2021) *Mammillaria deherdtiana*. *Succulenta* 100(2): 62-67, ill. [Included for the illustrations.]

Hofer, A. (2021) Proposal to conserve the name *Echinocactus williamsii* Lem. ex Salm-Dyck (*Lophophora williamsii*) against *E. williamsii*.

sianus Lem. (*Cactaceae*). *Taxon* 70(3): 676. DOI

Hovland, M. & Ericsson-Hedlöf, J. (eds.) (2021) *Hoya nummularioides* Costantin. *Hoya surisana* Rodda & S. Rahayu. *Hoyatelegrafen* 28(1): 6-17, ills.

Hovland, M. & Ericsson-Hedlöf, J. (eds.) (2021) *Hoya erythrina* Rintz. *Hoya megalaster* Warb. *Hoya sulawesiana* Rodda & S. Rahayu. *Hoyatelegrafen* 28(2): 6-17, ills.

Hovland, M. & Nyhuus, T. (eds.) (2021) *Hoya pallilimba* Kleijn & van Donkelaar. *Hoya peninsularis* Rodda & Zakaria. *Hoya tsangii* C. M. Burton. *Hoyatelegrafen* 28(3): 5-17, ills.

Hovland, M. (ed.) (2021) *Hoya corymbosa* Rodda & Simonsson. *Hoya curtisii* King & Gamble. *Hoya sumatrana* S. Rahayu & M. Rodda. *Hoyatelegrafen* 28(4): 6-14, 16-19, ills.

Hoxey, P. (2021) Notes on the identity of *Echinocactus conglomeratus* – a name of uncertain application from northern Chile. *Bradleya* 39: 54-68, ills. DOI

Hoxey, P. (2021) *Mammillaria mammillaris* in the Lesser Antilles. *J. Mammillaria Soc.* 61(2): 45-52, ills., map.

Hoxey, P. & Gdaniec, A. (2021) An evaluation of the *Cactaceae* of Barbados, Grenada, Saint Vincent, and The Grenadines. *Phytotaxa* 483(1): 25-74, ills., maps. DOI

Hoxey, P., Gdaniec, A. & Cinea, W. (2021) Notes on *Pilosocereus* (*Cactaceae*) from the island of Hispaniola and the description of three new species. *Cact. Succ. J. (US)* 93(2): 98-111, ills., map, key. DOI

Hoxey, P., Gdaniec, A. & Cinea, W. (2021) Two interesting cactus discoveries in southern Haiti and the description of a new species of *Melocactus*. *CactusWorld* 39(2): 89-98, ills. [Includes information on the identity of *Consolea moniliformis*.]

Hübener, H. (2021) Erste Erfahrungen mit der Kultur und Vermehrung von *Myrmecodia beccarii*. *Kakt. and. Sukk.* 72(3): 81-86, ills. [Included for the illustrations. Abridged Russian version in *Kakt. Tolko* 2021(2): 22-26, ills., 2021.]

Humaña, A. M., Valdivia, C. E., Jiménez, A. & Barahona-Segovia, R. M. (2021) *Brownlingia candelaris* (Meyen) Britton & Rose, un

cactus autoincompatible polinizado por colibríes e insectos en el Desierto de Atacama. *Gayana, Bot.* 78(2): 131-140, ills. DOI

Hurbath, F., Stubbs, R. L., Cordeiro, I. & Cellinese, N. (2021)(e-published 2020) Biogeography of succulent spurge from Brazilian Seasonally Dry Tropical Forest (SDTF). *Taxon* 70(1): 153-169, ills., map. [Digitally published 31. 12. 2020, print version 2021.] DOI

Ibrahim, H. M., Radman Alshaibani, A. & Al-Gifri, A. N. A. (2021) Epidermal properties of *Aloe vacillans* Forsskål leaf and its taxonomical significance in classifying its two forms. *Biol. Res.* 6(3): 76-83, ills.

Jaarsveld, E. J. van & Roux, A. Le (2021) *Portulacaria afra* (L.) Jacq.: Variability and distribution. *Bradleya* 39: 138-152, ills., map. DOI

Jaarsveld, E. J. van & Visagie, M. (2021) *Aloiampelos tenuior* var. *viridifolia*. *Flow. Pl. Afr.* 67: 32-40, ills., map, key, t. 2363. [Includes a key to the varieties of the species.]

Jaarsveld, E. J. van, Venter, S. & Visagie, M. (2021) *Adenia repanda*. *Flow. Pl. Afr.* 67: 132-140, ills., map, t. 2373.

Jabar, L., Siebert, S. J., Pfab, M. F. & Cilliers, D. P. (2021) Population biology and ecology of the endangered *Euphorbia susannae* Marloth, an endemic to the Little Karoo, South Africa. *Biodiversitas* 22(10): 4583-4596, ills., maps. DOI

Jacobsen, N. H. G. (2021) Is *Crassula fragilis* Schönl. a valid taxon or synonymous with *C. pubescens* Thunb. subsp. *pubescens*? *Cact. Succ. J. (US)* 93(2): 123-127, ills. DOI

Jainta, H. & Haumann, T. (2021) Notes on Horn's *Lithops*. *Mesemb Study Group Bull.* 36(2): 48-50, ills.

Jainta, H. & Jainta, A. (2021) Dabner's *Lithops* – flowering stones from Kimberley's pans. *Mesemb Study Group Bull.* 36(1): 19-23, ills.

Jandovi, I. & Jandovi, J. (2021) [Czech:] *Sedum caducum* R. T. Clausen. *Kaktusy* 57(3): 99-102, ills. [Included for the illustrations.]

Janeba, Z. (2021) *Pediocactus simpsonii* in the field and in cultivation. *CactusWorld* 39(3): 187-196, ills. [Included for the illustrations]

showing variability.]

Janeba, Z. (2021) Zlatko's favourites (7). *CactusWorld* 39(4): 324, ill. [Included for the illustrations of *Rebutia fischeriana*.]

Janeba, Z. (2021) [Czech:] *Sclerocactus nyensis* Hochstätter – an interesting endemic from Nevada. *Kaktusy* 57(1): 4-9, ill. [Included for the illustrations.]

Jezek, J. (2021) [Czech:] Housleeks from the Kaçkar Dagları mountains. *Adenium* 34: 22-27, ill. [Included for the illustrations.]

Jezek, J. (2021) *Sempervivum montanum* in Slovakia. *CactusWorld* 39(3): 211-214, ill.

Jezek, J. (2021) Introduzione a *Sempervivum matricum*. *Piante Grasse* 41(2): 87-92, ill.

Jonkers, B. (2021) Extrafloral nectaries in *Aloe* – the sequel. *CactusWorld* 39(1): 75.

Jovanovic, M., Lakusic, D., Lakusic, B. & Zlatkovic, B. (2021) Diversification of yellow-flowered *Sempervivum* (*Crassulaceae*) species from the Balkan Peninsula: Evidence from the morphometric study of the epidermal structures of rosette leaves. *Bot. Serb.* 45(2): 163-176, ill., map. DOI

Juárez-Miranda, A. I., Cornejo-Romero, A. & Vargas-Mendoza, C. F. (2021) Population expansion and genetic structure in *Cephalocereus nizardensis* (*Cactaceae*), a microendemic cactus of rocky outcrops of the Tehuantepec basin, Mexico. *Pl. Ecol. Evol.* 154(2): 217-230, maps. DOI

Kasongo Yakusu, E., Monthe, F. S., Bourland, N., Hardy, O. J., Louppe, D., Mbele Lokanda, F. B., Hubau, W., Kahindo Muhongya, J.-M., Bulcke, J. van den, Acker, J. van & Beeckman, H. (2021) *Entandrapragma*: Taxonomy and ecology of a genus of African tree species with economic importance. A review. *Biotechnol. Agron. Soc. Environnem.* 25(3): 140-153, maps, key. DOI

Kattermann, F. (2021) Molecular study of the genus *Copiapoa* (*Cactaceae*). Part VII. *Cact. Succ. J. (US)* 93(1): 53-63, ill., maps. [Continued from l.c. 92, 2020.] DOI

Kattermann, F. (2021) Molecular study of the genus *Copiapoa* (*Cactaceae*). Part VIII. *Cact. Succ. J. (US)* 93(2): 128-140, ill., map. [Final part of an eight-part synopsis.] DOI

Kemble, B. (2021) Moring as of Madagascar. *Cact. Succ. J. (US)* 93(2): 90-97, ill. DOI

Kemble, B. (2021) *Gasteria polita*. *Haworthiad* 35(1): 14-19, ill. [Included for the illustrations.]

Kidyoo, A., Kidyoo, M., Blatrix, R., Deconinck, G., McKey, D., Ekkaphan, P. & Proffitt, M. (2021) Molecular phylogenetic analysis and taxonomic reconsideration of *Cer opegia hirsuta* (*Apocynaceae*, *Asclepiadoideae*) reveal a novelty in Thailand, *Cer opegia citrina* sp. nov., with notes on its pollination ecology. *Pl. Syst. Evol.* 307(14): 14 pp., ill., map. DOI

Kiesling, R., Catix, J.-R., Tessier, F. & Schweich, D. (2021) Typification of *Opuntia australis* (*Cactaceae*) with an original plate from 1882 and history of the plants's finding. *Bol. Soc. Argent. Bot.* 56(1): 1-9, ill. DOI

Kiesling, R., Pérez de Molas, L., Oakley, L., Schweich, D., Las Peñas, M. L., Barmon, A. de & Metzinger, D. (2021) (stated publication year: 2020) (e-published 2021) *Mediocactus hahnianus*: A resolved enigma and a new chapter of its history. *Haseltonia* 27: 29-39, ill. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] DOI

Kiss, L. (2021) [Hungarian:] *Mammillaria paulii* – the new cactus from the Mexican plateau. *Debreceni Pozsgás-Tár* 24(2): 20-25, ill.

Klein, D.-P., Shtein, R., Nusbaumer, L. & Callmander, M. W. (2021) *Kalanchoe darainensis* (*Crassulaceae*), a new species from northeastern Madagascar. *Candollea* 76: 117-123, ill., map, key. [Includes a key to allied Madagascan species. Abridged Russian version in *Kakt. Tolko* 2021(4"): 12-15, 2021.] DOI

Kleszewski, K.-P. (2021) *Astrophyten im Bolsón de Cuatro Ciénegas*. *Kakt. and. Sukk.* 72(10): 313-317, ill., map. [Included for the illustrations.]

Köhler, M., Font, F., Puente-Martínez, R. & Majure, L. C. (2021) That's *Opuntia*, that was!, again: A new combination for an old and enigmatic *Opuntia* s.l. (*Cactaceae*). *Phytotaxa* 505(3): 262-274, ill. DOI

Köhler, M., Oakley, L. J., Font, F., Las Peñas, M. L. & Majure, L. C. (2021) On the continuum of evolution: A putative new hybrid species

tion event in *Opuntia* (Cactaceae) between a native and an introduced species in southern South America. Syst. Biodivers. 19(8): 1026-1039, ill., map DOI

Köhler, M., Reginato, M., Souza-Chies, T. T. & Majure, L. C. (2020) Insights into chloroplast genome evolution across *Opuntioideae* (Cactaceae) reveals robust yet sometimes conflicting phylogenetic topologies. Frontiers Pl. Sci. 11: 729, 20 pp.. [Omitted previously.] DOI

Korotkova, N., Aquino, D., Arias, S., Egli, U., Franck, A., Gómez-Hinostrosa, C., Guerrero, P. C., Hernández, H. M., Kohlbecker, A., Köhler, M., Luther, K., Majure, L. C., Müller, A., Metzing, D., Nyffeler, R., Sánchez, D., Schlumpberger, B. & Berendsohn, W. G. (2021) Cactaceae at Caryophyllales.org – a dynamic online species-level taxonomic backbone for the family. Willdenowia 51(2): 251-270, S1-S732. DOI

Krämer, P. (2021) *Notocactus notabilis*? Inter- noto 42(3): 79-84, ill.

Kubentayev, S. A., Zhumagul, M. Z., Kurmanbayeva, M. S., Alibekov, D. T., Kotukhov, J. A., Sitpayeva, G. T., Mukhtubayeva, S. K. & Izbastina, K. S. (2021) Current state of populations of *Rhodiola rosea* L. (Crassulaceae) in East Kazakhstan. Bot. Stud. (Nangang) 62: 19, 20 pp., ill., map. DOI

Kunte, L. (2021) [Czech:] *Monsonia peniculina* (Moffett) F. Albers – botanical jewel. Kaktusy 57(1): 31-35, ill. [Included for the illustrations.]

Kunte, L. (2021) [Czech:] A dream come true, or at the site of *Discocactus horstii* Buining & Brederoo. Kaktusy 57(2): 39-46, ill. [Included for the illustrations.]

Kunte, L. & Vlk, V. (2021) [Czech:] *Adenium dhofarense* Rzepecky – gem of southern Oman. Kaktusy 57(4): 111-114, ill.

Laius, A. (2021) A few *Euphorbiaceae* in Socotra. Euphorbia World 17(1): 13-17, ill.

Laius, A. (2021) *Sansevieria sambiranensis* blooms at last. Sansevieria 46: 20-23, ill.

Lange, M. (2021) Die Echinocereen von Alfred B. Lau. Echinocereenfreund 34(1/2): 4-91, ill.

Las Peñas, M. L. & Bernardello, G. (2021) Divergence time estimation and mapping of morphological and cytogenetical data in the southern South American geophyte genus *Pterocactus* (Cactaceae). Taxon 70(3): 552-569, ill., map. DOI

Lehmann, U. (2021) Wieder einmal etwas über *Mammillaria muehlenpfordtii* Förster. Mitteilungsbl. AfM 45(3): 130-138, ill., map.

Lemus-Barrios, H., Barrios, D., García-Beltrán, J. A., Arias, S. & Majure, L. C. (2021) Taxonomic implications of seed morphology in *Melocactus* (Cactaceae) from Cuba. Willdenowia 51(1): 91-113, ill., map. DOI

Linzen, T. & Appenzeller, O. (eds.) (2021) Lose-Blatt-Sammlung des AfM. Lieferung 2020. Radeburg (DE): Arbeitskreis für Mammillarienfreunde e.V. 69 loose sheets, ill. [Continued from "Ergänzungslieferung zum Werk Die Mammillarien (LBS-Lieferung 2017)", published 2018.]

Lodé, J. (2021) The *Aloe dumetorum* / *ellenbeckii* puzzle finally solved? Le Puzzle *Aloe dumetorum* / *ellenbeckii* finalement résolu? Cact.-Advent. Int. (Almeria) 33(1): 32-51, ill., map.

Lopes, S., Mota, L., Castro, M., Nobre, G., Novoa, A., Richardson, D. M., Loureiro, J. & Castro, S. (2021) Genome size variation in Cactaceae and its relationship with invasiveness and seed traits. Biol. Invas. 23: 3047-3062. DOI

Lu, M., Fradera-Soler, M., Forest, F., Barraclough, T. G. & Grace, O. M. (2021) Evidence linking life-form to a major shift in diversification rate in *Crassula*. Amer. J. Bot. 109(2): 272-290, ill. DOI

Ma, Z.-Y., Nie, Z.-L., Ren, C., Liu, X.-Q., Zimmer, E. A. & Wen, J. (2021) Phylogenomic relationships and character evolution of the Grape Family (Vitaceae). Molec. Phylogen. Evol. 154: 106948, 9 pp., ill. DOI

Magoswana, S. L., Boatwright, S. J., Magee, A. R. & Manning, J. C. (2021) *Othonna koosbekkeri* Van Jaarsv. is a synonym of *Othonna cerarioides* Magoswana & J. C. Manning (Asteraceae: Othonninae). Bothalia 51(2): a12, 2 pp. DOI

- Majure, L. C., Barrios, D., Díaz, E., Zumwalde, B. A., Testo, W. & Negrón-Ortíz, V. (2021)** Pleistocene aridification underlies the evolutionary history of the Caribbean endemic, insular, giant *Consolea* (*Opuntioideae*). *Amer. J. Bot.* 108(2): 200-215, ill. [DOI](#)
- Majure, L. C., Encarnación, Y., Clase, T., Peguero, B., Ho, K. & Barrios, D. (2021)** Phylogenetics of *Leptocercus* (*Cactaceae*) on Hispaniola: Clarifying species limits in the *L. weingartianus* complex and a new species from the Sierra de Bahoruco. *PhytoKeys* 172: 17-37, ill., maps, key. [DOI](#)
- Mansfeld, P. A. (2021)** *Opuntia galapageia* Henslow. *Kakt. and. Sukk.* 72(4): center-page pullout 2021/07, ill. [Included for the illustrations of a flowering plant.]
- Mansfeld, P. A. (2021)** Die Identität von *Sansevieria metallica* Gérome & Labroy. *Sansevieria Online* 9(1): 4-13, ill.
- Mansfeld, P. A. (2021)** *Sansevieria hargeisana* Chahinian in meiner Sammlung. *Sansevieria Online* 9(2): 38-43, ill.
- Mansfeld, P. A. (2021)** Robust mit zarter Blüte, *Sansevieria canaliculata* Carrière. *Sansevieria Online* 9(2): 4-11, ill. [Included for the illustrations.]
- Mansfeld, P. A. (2022)** T rendpflanze *Sansevieria* – (m)eine Auswahl. Adelsdorf (DE): Deutsche Kakteen-Gesellschaft e.V. 148 pp., ill., map. [= Sonderausgabe der Deutschen Kakteen-Gesellschaft e.V.]
- Marais, E. M. & Le Roux, A. (2021)** Two new species of *Pelargonium* (*Geraniaceae*) from the Western and Northern Cape Provinces (South Africa) and their position within *P.* section *Hoarea*. *Phytotaxa* 516(1): 92-100, ill., map, key. [Includes a key to the *Pelargonium aridicola* flower group.] [DOI](#)
- Marques, O., Hurbath, F. & Riina, R. (2021)** Recent discoveries of striking *Euphorbia* species for the Brazilian flora. *Euphorbia World* 17(3): 6-11, ill.
- Martínez-González, C. R. & Morales-Sandoval, J. (2021)** Taxonomic status of two controversial species of *Opuntia* (*Cactaceae*) from Mexico based on morphological and molecular data. *Bradleya* 39: 23-35, ill. [DOI](#)
- Martínez-González, C. R., Morales-Sandoval, J., González-Martínez, C. A., Jiménez-Ramírez, J. & Gallegos-Vázquez, C. (2021)** *Opuntia tehuacana* and *O. olmeca* (*Cactaceae*, *Opuntioideae*) are to be considered as ascribed to a single species: Morphological and molecular evidences. *Phytotaxa* 479(2): 160-172, ill. [DOI](#)
- Martín-Gómez, J. J., Gutiérrez del Pozo, D., Tocino, Á. & Cervantes, E. (2021)** Geometric models for seed shape description and quantification in the *Cactaceae*. *Plants* 10(11): 2546, 18 pp., ill. [DOI](#)
- Matuszewski, G. F. (2021)** Leksykon rodzaju *Turbinicarpus*. *Lexikon der Gattung Turbinicarpus*. *Swiat Kakt.* 55(1): 5-137, ill., maps.
- Maurer, M. M. & Baker, M. A. (2021)** Volatile profiling of cacti: A preliminary assessment of the taxonomic and evolutionary significance of volatile compounds in *Cylindropuntia*, *Grusonia*, *Consolea*, *Opuntia*, *Quiabentia*, and *Tacina*. *J. Pl. Res.* 134(5): 1095-1103. [DOI](#)
- Melichar, O. (2021)** [Czech:] Memories of *Euphorbia enopla* (part 1) / (part 2). *Cactaceae* etc. 31(3): 106-113, (4): 137-144, ill., map. [On *Euphorbia heptagona*.]
- Mercado Muñoz, F., León de la Luz, J. L., Rebman, J. P., Medel Narváez, A. & Campos Ramos, R. (2021)** Two new species of nopal (*Opuntia*, *Cactaceae*) from the Baja California Peninsula (Mexico). *Phytotaxa* 508(3): 266-278, ill., key, map. [Includes a key to *Opuntia* in the S part of the Baja California peninsula.] [DOI](#)
- Merklinger, F. M., Böhnert, T., Arakaki, M., Weigend, M., Quandt, D. & Luebert, F. (2021)** Quaternary diversification of a columnar cactus in the driest place on earth. *Amer. J. Bot.* 108(2): 184-199, ill., map. [On *Eulychnia* phylogeny.] [DOI](#)
- Mészáros, Z. (2021)** [Hungarian:] Collecting in Central Cuba. *Kakt. Világ* 45(2): 81-88, ill. [On *Melocactus gutartii*.]
- Meutter, L. van de (2021)** *Ceropegia meleagris* H. Huber. *Succulenta* 100(4): 182-183, ill. [Included for the illustrations.]
- Meutter, L. van de (2021)** *Edithcolea grandis*. *Succulenta* 100(6): 268-275, ill. [Included for the illustrations showing variability.]

Milt, I. (2021)[Czech:] *Gymnocalycium megalae* and several other related taxa. *Cactaceae etc.* 31(2): 52-56, ill.

Milt, I. (2021)*Gymnocalycium car denasianum* subsp. *pseudoarmatum* V. Gapon et Vikulov subsp. n. *Cactaceae etc.* 31(3): 104-105, ill.

Minué, C. R. & Jocou, A. I. (2021) The genus *Sesuvium* (*Aizoaceae*, *Sesuvioideae*) in the Southern Cone. *Hacquetia* 20(1): 33-48, ill., maps, key. DOI

Molteno, S. (2021) *Haworthia blackburniae* in Langeberg: A range extension southward. *Haworthiad* 35(2): 42-47, ill., map.

Moschetti, G. (2021) Dhofar *Apocynaceae*. *Asklepios* 127: 3-9, ill., map.

Moschetti, G. (2021)Apoc ynaceen und Kaudexpflanzen in Kenia. *Apocynaceae* and caudiciforms in Kenya. *Avonia* 39(2): 126-147, ill. [Included for the illustrations.]

Mottram, R. (2021) The misunderstood *Crassula pubescens* Thunb. (*Crassulaceae*) and its typification. *Cactician* 14: ii, 1-29, ill., map URL

Mottram, R. (2021)Commentary on the taxonomic value of the Ehret, Van Huysum, and Wm. Sartorius illustrations in the archive of the Royal Society of succulent plants grown by Philip Miller at the Chelsea Physic Garden in the eighteenth century. *Cactician* 15: 1-17, ill. URL

Mottram, R. (2021)*Mammillaria* series *Super-textae* paper review. *J. Mammillaria Soc.* 61(3): 106-108, ill.

Mynár, J. & Nitzschke, S. (2021) [Czech:] The genus *Acharagma* (N. P. Taylor) Ch. Glass. *Kaktusy* 57(Special 3): 1-35, ill., map. [Also published in a concurrent German version.]

Nascimento, J. P. B. & Meiado, M. V. (2021) Population structure and phenology of *Disocactus zehntneri* Britton & Rose subsp. *petr-halfarii* (Zachar) M. R. Santos & M. C. Machado (*Cactaceae*), a critically endangered Brazilian cactus subspecies. *Bradleya* 39: 116-124, ill. DOI

Neitzert, A. (2021) *Crassula nemorosa* – ein interessanter Winterwaxser aus Südafrika. *Kakt. and. Sukk.* 72(11): 321-323, ill. [Included for the illustrations.]

Ness, H.-J. (2021) Und er blüht und fruchtet doch! Eine Ergänzung zum Synonym *Echinocereus matthesianus*. *Echinocereenfreund* 34(4): 130-134, ill.

Ness, H.-J. (2021) *Disocactus macranthus* – ein Blütenfeuerwerk für die Sinne. *Kakt. and. Sukk.* 72(10): 295-298, ill. [Included for the illustrations of flowers and fruit.]

Neuhuber, G. (2021) Seed morphology using the example of the genus *Gymnocalycium* Pfeiff. ex Mittler. *Kakt.-Klub* 5(1): 5-32, ill. [Published in parallel English, German and Russian versions.]

Newton, L. E. (2021) *Euphorbia brevitorta* survives – but not so "torta". *Euphorbia World* 17(3): 12-14, ill.

Nóbrega Gomes, V. G., Braun, P. J. & Costa Batista, F. R. (2021) Neues und Wissenswertes zu Kakteen Brasiliens: *Melocactus lanssen-sianus* in Paraíba – Verbreitung, Ökologie, Gefährdung und Arterhaltung. *Kakt. and. Sukk.* 72(12): 353-358, ill.

Noller, H.-G. (2021) *Pfeiffera paranganiensis* × *Pfeiffera miyagawae*. *EPIG* 84: 18-21, ill.

Nycz, T. (2021)*Gymnocalycium* ne w classifica-tion. sine loco (PL): published by the author. 39 pp., ill. [The numerous section names published invalidly without descriptions are not separately indexed in this RPS.]

Nyhuus, T. (2021) *Hoya sigillatis*. *Stemma Notiz. Assoc. Ital. Hoya* 3(11): 2-4, ill. [Included for the illustrations.]

Ogutcen, E., Christe, C., Nishii, K., Salamin, N., Möller, M. & Perret, M. (2021) Phylogenomics of *Gesneriaceae* using targeted capture of nuclear genes. *Molec. Phylogen. Evol.* 157(12): 107068, 12 pp., ill. DOI

Ondrovic, S. (2021)V on Hyurca zur *Yucca* – die ersten 525 Jahre einer Gattung – Teil 1. From Hyurca to *Yucca* – the first 525 years of a genus – Part 1. *Avonia* 39(4): 294-319, ill., map.

Orlando, G. (2021)Je wels of Yemen. *Asklepios* 127: 10-36, ill., maps.

Ostolaza, C. (2019) Todos los cactus del Perú. Segunda edición corregida y actualizada. Lima (PE): Sociedad Peruana de Cactáceas y Suculentas. 570 pp., ill., maps [Erroneously omitted

so far. First edition published 2014.]

Ostolaza, C. (2021) Los cactus de Ancash. Quepo 34: 49-63, ill. [Dated 2020 but only distributed mid-January 2021.]

Palomino, G., Martínez-Ramón, J., Cepeda-Cornejo, V., Ladd-Otero, M., Romero, P. & Reyes-Santiago, J. (2021) Chromosome number, ploidy level, and nuclear DNA content in 23 species of *Echeveria* (Crassulaceae). Genes 12(12): 1950, 25 pp., ill. DOI

Palomino, G., Soto-Trejo, F., Correa, H., Méndez, I. & Villaseñor, J. L. (2018) Nuclear genome size and chromosome number in the Mexican genus *Pittocaulon* (Asteraceae). Caryologia 71(2): 113-119. [Omitted previously.] DOI

Papsch, W. (2021) Leopold Quehl and his *Gymnocalycium quehlianum*. Schütziana 12(1): 15-32, ill., map. [Published concurrently in several language editions.]

Pauca-Tanco, G. A., Balvin, M., Hoxey, P., Quipuscoa, V. & Quispe-Turpo, J. (2021) Geographic distribution and conservation status of *Eulychnia ritteri* Cullmann (Cactaceae), an endemic cactus from southern Peru. Revista Peruana Biol. 28(4): e21623, 10 pp., ill., maps. DOI

Phillipp, S. (2021) Blüten, die nicht bis fünf zählen können. Flowers that cannot count to five. Stapeliad J. 2021(2): 20-31, ill.

Pino, G., Fernández, R. & Samain, M.-S. (2021) (stated publication year: 2020) (e-published 2021) Succulent Peruvian species of *Peperomia* subgenus *Panicularia*. Haseltonia 27: 116-129, ill. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] DOI

Pino Infante, G. (2021) *Corryocactus squarrosus*, un cactus poco documentado del centro del Perú. Quepo 34: 64-67, ill. [Dated 2020 but only distributed mid-January 2021.]

Ponomareva, N. (2021) *Notocactus herteri*. Kakt.-Klub 5(3): 80-83, ill., map.

Pospíšil, J. (2021) [Czech:] Interesting forms of *Echinocactus horizonthalonius* Lem. (III.). Kaktusy 57(2): 65-67, ill. [Included for the illustrations depicting variability. Continued from part 2 authored by Z. Janeba, l.c. 46(4), 2020.]

Prauser, W. (2021) *Notocactus multicostatus* und *Notocactus blaauianus* – Ähnlichkeiten und Unterschiede. Internoto 42(3): 63-72, ill.

Prauser, W. (2021) Vergleichende Knospenbeobachtungen I: Einführung. Internoto 42(4): 114-118, ill.

Qin, X., Yang, X., Huang, X., Jin, G., Yang, X., Wu, M., Chen, T. & Yi, K. (2021) The complete chloroplast genome of *Agave angustifolia*. Mitochondrial DNA Part B 6(11): 3236-3237. DOI

Ramírez-Morillo, I., Carrillo-Reyes, P., Tampia-Muñoz, J. L. & Ramírez-Díaz, C. J. (2021) In disentangling two species limits of *Hechtia* (Bromeliaceae: Hechtioideae) from Sierra Madre Occidental, a new species is discovered from Durango, Mexico. Phytotaxa 523(1): 55-72, ill., map DOI

Rebmann, K. (2021) Rund um *Mammillaria mystax*. Kakt. and. Sukk. 72(2): 51-57, ill.

Rebmann, K. (2021) Ein Erklärungsmodell für die disjunkte Verbreitung von Kakteen, am Beispiel von *Mammillaria geminata* Scheidweiler in Oaxaca und Puebla. Mitteilungsbl. AfM 45(1): 16-35, ill., maps.

Rebmann, K. (2021) Eine bisher wenig bekannte *Mammillaria*-Abbildung von Georg Dionysius Ehret: Die erste Darstellung von *Mammillaria nivosa*? Mitteilungsbl. AfM 45(2): 74-101, ill.

Rebmann, K. (2021) Frühe, teilweise wenig bekannte Abbildungen von *Mammillaria mammillaris* und ihre Künstler. Mitteilungsbl. AfM 45(3): 140-167, ill.

Rebmann, K. (2021) Wo hat Henri Guillaume Galeotti *Mammillaria obconella* gesammelt? Mitteilungsbl. AfM 45(3): 184-187, ill., map.

Rebmann, K. (2021) Eine erste Mammillarienbeschreibung in deutscher Sprache 1739. Frühe Spuren von *Mammillaria mammillaris* in Deutschland. Mitteilungsbl. AfM 45(4): 219-237, ill.

Riina, R., Villaverde, T., Rincón-Barrado, M., Molero, J. & Sanmartín, I. (2021) (e-published 2020) More than one sweet tabaiba: Disentangling the systematics of the succulent dendroid shrub *Euphorbia balsamifera*. J. Syst. Evol. 59(1): 490-503, ill., map, key. [Digitally published July 2020, print version 2021.] DOI

Roberts, E. (2021) The *Coryphantha* which is not *elephantidens*: *Coryphantha garessii*. Le *Coryphantha* qui n'est pas *elephantidens*: *Coryphantha garessii*. Cact.-Advent. Int. (Almeria) 33(1): 6-21, ill.

Roberts, E. (2021) (stated publication year: 2020) Moje Pterocactus. Czesc 3. *Pterocactus fischeri*. My Pterocacti. Part 3. *Pterocactus fischeri*. Kakt. Inne 12(3): 110-111, ill. [Volume dated 2020, published 28. 3. 2021 according to the metadata of the digital version. Included for the illustrations.]

Rollason, A. (2021) *Haworthia gr oenewaldii*. Cact. Succ. Rev. 29: 33-37, ill. [Included for the illustrations.]

Romulski, T. (2021) (stated publication year: 2020) *Echinocereus triglochidiatus* var. *coccineus*. Kilka myśli hobbysty... *Ec hinocereus triglochidiatus* var. *coccineus*. A few hobbyist's thoughts... Kakt. Inne 12(3): 115-119, ill. [Volume dated 2020, published 28. 3. 2021 according to the metadata of the digital version.]

Rosas-Reinhold, I., Piñeyro-Nelson, A., Rosas, U. & Arias, S. (2021) Blurring the boundaries between a branch and a flower: Potential developmental venues in *Cactaceae*. Plants 10(6): 1134, 22 pp., ill. DOI

Rudzinski, H. (2021) Die Reihe *Leucocephalae* der Gattung *Mammillaria* (*Cactaceae*) Teil 1. *Mammillaria geminispina* und verwandte Taxa. Radeberg (DE): Arbeitskreis für Mammillarienfreunde e.V. 537 pp., ill., maps. [= Sonderheft AfM 2021.]

Saint Esteven, A., Benedictto, M., Garolla, F. A., Padró, J. & Soto, I. M. (2021) A survey of cacti richness in a biodiversity hotspot of Western Argentina. Bradleya 39: 5-15, ill. DOI

Samek, R. (2021) *Huernia* from Tigray, Ethiopia. CactusWorld 39(2): 162-163, ill. [On *Huernia macrocarpa* ssp. *macrocarpa* flower variability.]

Sarnes, E. & Sarnes, N. (2021) *Pterocactus*. Jewels of the Cono Sur. Eschweiler (DE): Published by the authors. 84 pp., maps, ill., + 1 p. supplement. [Simultaneously also published in a German edition, and both editions also available in digital form.] URL

Sarnes, E. & Sarnes, N. (2021) Visiting punas. Cact. Succ. Rev. 30: 13-19, ill. [Included for the illustrations.]

Sarnes, E. & Sarnes, N. (2021) *Lobivia ferox* in Chile. Kakt.-Klub 5(3): 69-74, ill.

Scharf, U. & Burkart, M. (2021) *Sansevieria pfennigii* (*Ruscaceae*, *Asparagales*): Confirmation of existence, emendation of description, and tentative threat assessment. Phytotaxa 483(1): 1-8, ill., map. [Republished in a German translation in *Sansevieria Online* 9(2): 12-23, ill., 2021.] DOI

Schmidt, P. (2021) [Czech:] Pumpkins, pumpkins and more pumpkins – *Cyclanthera opsis parviflora* Harms 1896. Adenium 34: 36-37, ill. [Included for the illustrations.]

Schmied, R. (2021) *P elargonium alternans*. Kakt. and Sukk. 72(9): 282-284, ill. [Included for the illustrations.]

Scholz, E. (2021) Feldnummernliste Eberhard Scholz mit Fotos vom Standort und in Kultur. sine loco (FR): Au Cactus Francophone Bibliothèque numérique. 116 pp., ill., map. [French and English translations published simultaneously as text files.] URL

Scholz, E. (2021) Das Verbreitungsgebiet von *Lobivia hertrichiana*. Neue Erkenntnisse. Echinopseer 18(1): 95-100, ill., maps.

Schrempf, E. (2021) *Mammillaria melanocentra* Poselger und Konsorten. Teil 4: Vergleich: *M. melanocentra* – *M. rubrograndis* – *M. linaresensis* – Reihe *Mammillaria* (*Macrothelae*). Mitteilungsbl. AfM 45(1): 36-41, ill. [Continued from l.c. 44(4), 2020.]

Schrempf, E. (2021) *Mammillaria melaleuca* Karwinski ex Salm-Dyck. Mitteilungsbl. AfM 45(3): 174-177, ill. [Additional information to a paper by E. Roberts in l.c. 42(1), 2018.]

Seidelt, R. (2021) Some remarks on *Euphorbia poissonii* Pax. Euphorbia World 17(1): 46-52, ill.

Shaw, J. M. H. (2021) The identity of *Cacalia cuneifolia* L. Bradleya 39: 242-245, ill. DOI

Shaw, J. M. H. (2021) *Crassula sarcocaulis* Eckl. & Zeyh. – variation and clones in cultivation. Bradleya 39: 246-252, ill., key. DOI

Shaw, J. M. H. (2021) The identity of *Oxalis megalorrhiza* – a 300-year puzzle. *CactusWorld* 39(1): 67-72, ills.

Shaw, J. M. H. (2021) A recently identified *Oxalis* in cultivation. *CactusWorld* 39(4): 333-335, ills.

Shtein, R. & Smith, G. F. (2021) A revision of the climbing Kalanchoes (*Crassulaceae* subfam. *Kalanchooideae*) of Madagascar including the description of *Kalanchoe* sect. *Invasores* and *K. ser. Vilana*. *Phytotaxa* 482(2): 93-120, ills., maps, key. DOI

Shtein, R. & Smith, G. F. (2021) Taxonomy and nomenclature of the southern Malagasy *Kalanchoe peltigera*, with reference to *K. rosei* var. *seyrigii* (*Crassulaceae* subfam. *Kalanchooideae*). *Phytotaxa* 490(1): 47-59, ills., map. DOI

Shtein, R., Klein, D.-P. & Smith, G. F. (2021) A new status for two varieties previously included in the southern Malagasy *Kalanchoe rosei*, now included in *K. variifolia* (*Crassulaceae* subfam. *Kalanchooideae*). *Phytotaxa* 496(3): 228-244, ills., key. DOI

Shtein, R., Smith, G. F. & Ikeda, J. (2021) Aspects of the taxonomy of the *Kalanchoe daigremontiana* species complex (*Crassulaceae* subfam. *Kalanchooideae*) and associated interspecific hybrids in southern Madagascar, with the description of a new nothospecies, *K. ×descodingsii* (= *K. laetivirens* × *K. tubiflora*). *Phytotaxa* 524(4): 235-260, ills., map. DOI

Shtein, R., Smith, G. F. & Klein, D.-P. (2021) The real identity of the Malagasy *Kalanchoe rosei* (*Crassulaceae* subfam. *Kalanchooideae*) finally resolved, and the description of a new species, *K. perrieri*. *Phytotaxa* 502(3): 259-276, ills., map. DOI

Silva, G. A. R., Khan, G., Ribeiro-Silva, S., Aona, L. Y. S., Machado, M. C., Bonatelli, I. A. S. & Moraes, E. M. (2020) Extreme genetic structure in a relict cactus genus from campo rupestre landscapes: Implications for conservation. *Biodivers. & Conservation* 29: 1263-1281, map. [Omitted previously. On *Uebelmannia*.] DOI

Skillin, R. (2021) The Gypsum Cactus. *Pediocactus sileri*. *Cact. Succ. J. (US)* 93(1): 4-20, ills., map. DOI

Skillin, R. & Moe, M. L. (2021) An annotated history of the taxonomy of *Ariocarpus*. *Cact. Succ. J. (US)* 93(2): 112-122, ills. DOI

Skrovan, A. (2021) [Czech:] *Oreocereus cel-sianus* × *Lobivia ferox* = *Oreolobivia celox* (according to Ralf). *Cactaceae etc.* 31(4): 159-160, ills.

Skrovan, A. (2021) *Sulcorebutia pirhuaniensis* Gertel & Jucker. Eine *Sulcorebutia* mit vielen Fragen. *Echinopsephen* 18(1): 35-43, ills.

Slaba, R. (2021) [Czech:] *Sulcorebutia pulchra* var. *albiareolata* Slaba et Sorma – one of the top ten members of the genus. *Kaktusy* 57(1): 26-30, ills. [Included for the illustrations.]

Slaba, R. (2021) [Czech:] *Copiapoa cinerea* (Phil.) Br. et R. – icon of the Chilean cactus flora. *Kaktusy* 57(3): 75-83, ills. [Included for the photographs depicting variability. Hungarian translation in *Kakt.-Világ* 47(2): 68-77, ills., 2023.]

Smith, G. F. (2021) Reinstatement of *Kalanchoe decumbens* Compton (*Crassulaceae* subfam. *Kalanchooideae*), an endemic species from eastern southern Africa. *Bradleya* 39: 163-171, ills. DOI

Smith, G. F. (2021) Reinstatement of *Kalanchoe* [subg. *Bryophyllum*] sect. *Alatae* (*Crassulaceae* subfam. *Kalanchooideae*) for *K. porphyrocalyx* and *K. uniflora*, two Malagasy endemics. *Bradleya* 39: 177-181, ills. DOI

Smith, G. F. (2021) (stated publication year: 2020) (e-published 2021) *Kalanc hoe* Adans. subg. *Fernandesiae* Gideon F. Sm. (*Crassulaceae* subfam. *Kalanchooideae*), a new subgenus from southern and south-tropical Africa. *Haseltonia* 27: 2-7, ills. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] DOI

Smith, G. F. (2021) Nomenclatural novelties published in *Kalanc hoe* (*Crassulaceae* subfam. *Kalanchooideae*) by Boiteau and Allorge-Boiteau in 1995. *Phytotaxa* 496(2): 201-207. DOI

Smith, G. F. (2021) How *Kalanchoe marmorata* (*Crassulaceae* subfam. *Kalanchooideae*), a distinctive central and east African species, received its name, and the later, valid publication of *K. macrantha* by Maire. *Phytotaxa* 502(1):

93-100, ills. [DOI](#)

Smith, G. F. (2022) The taxonomy of *Kalanchoe marmorata* Baker (*Crassulaceae* subfam. *Kalanchooideae*), a distinctive African species, revisited. *Phytotaxa* 538(2): 100-112, ills., key [DOI](#)

Smith, G. F. & Crouch, N. R. (2021) Typification of the name *Cotyledon clavifolia* Haw., basionym of *Adromischus cristatus* (Haw.) Lem. var. *clavifolius* (Haw.) Toelken (*Crassulaceae* subfam. *Kalanchooideae*), with a range extension. *Bradleya* 39: 202-206, ills. [DOI](#)

Smith, G. F. & Figueiredo, E. (2021) Taxonomic and nomenclatural notes on *Kalanchoe hauseri* Werderm. (*Crassulaceae* subfam. *Kalanchooideae*) from Angola, with notes on Friedrich Welwitsch's collecting activities in the country. *Bradleya* 39: 182-187, ill. [DOI](#)

Smith, G. F. & Figueiredo, E. (2021) The taxonomy and nomenclature of *Kalanchoe streptantha* Baker (*Crassulaceae* subfam. *Kalanchooideae*). *Bradleya* 39: 195-201, ills. [DOI](#)

Smith, G. F. & Figueiredo, E. (2021) The floristics and phytogeography of *Kalanchoe* Adans. (*Crassulaceae* subfam. *Kalanchooideae*) in the Waterberg Biosphere Reserve, northern South Africa. *Bradleya* 39: 207-220, ills., map, key. [DOI](#)

Smith, G. F. & Figueiredo, E. (2021) (2852) Proposal to reject the name *Kalanchoe aleurodes* (*Crassulaceae: Kalanchooideae*). *Taxon* 70(6): 1371-1372. [DOI](#)

Smith, G. F. & Klopfer, R. R. (2021) Reinstatement of *Aloe labiaflava* (*Asphodelaceae* subfam. *Aloioideae*), a distinctive species of maculate *Aloe* endemic to the western Mpumalanga province of South Africa. *Phytotaxa* 512(3): 179-189, ills., map. [DOI](#)

Smith, G. F. & Shtein, R. (2021) Taxonomic notes on *Kalanchoe porphyrocalyx* (*Crassulaceae* subfam. *Kalanchooideae*) and its horticultural derivatives. *Phytotaxa* 478(2): 225-238, ills. [DOI](#)

Smith, G. F. & Shtein, R. (2021) The identity of *Kalanchoe stearnii* (*Crassulaceae* subfam. *Kalanchooideae*). *Phytotaxa* 478(2): 295-300, ills. [DOI](#)

Smith, G. F. & Shtein, R. (2021) Typification of the name *Kalanchoe daigremontiana* (*Crassulaceae* subfam. *Kalanchooideae*). *Phytotaxa* 494(2): 244-249, ills. [DOI](#)

Smith, G. F. & Shtein, R. (2021) Clarifying the typification of the names *Kalanchoe fedtschenkoi* and *K. waldheimii* (*Crassulaceae* subfam. *Kalanchooideae*), two leaf-succulent shrubs indigenous to Madagascar. *Phytotaxa* 509(1): 131-134, ills. [DOI](#)

Smith, G. F. & Shtein, R. (2021) Nomenclature and taxonomic placement of the infraspecific taxa recognised in the Malagasy *Kalanchoe miniata* (*Crassulaceae* subfam. *Kalanchooideae*) by Perrier de la Bâthie and Boiteau and Mannoni in the 20th century. *Phytotaxa* 514(2): 118-128, ills. [DOI](#)

Smith, G. F. & Shtein, R. (2021) Typification and homotypic synonymy of the names published in *Kalanchoe* (*Crassulaceae* subfam. *Kalanchooideae*) by Raymond-Hamet and Henri Perrier de la Bâthie in the 1910s and in 1948. *Phytotaxa* 520(1): 40-56. [DOI](#)

Smith, G. F., Bernhard, S., Thiede, J. & Nickol, M. (2021) (stated publication year: 2020) (e-published 2021) Notes on the natural geographical distribution range of the Madagascan *Kalanchoe dinklagei* Rauh (*Crassulaceae* subfam. *Kalanchooideae*). *Haseltonia* 27: 21-28, maps, ills. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] [DOI](#)

Smith, G. F., Crouch, N. R., Figueiredo, E. & Beaumont, A. (2021) *Kalanchoe crouchii*. *Flow. Pl. Afr.* 67: 60-68, ills., map, t. 2366.

Smith, G. F., Figueiredo, E. & Crouch, N. R. (2021) Expanding the known geographical distribution range of *Kalanchoe waterbergensis* (*Crassulaceae* subfam. *Kalanchooideae*) in northern South Africa. *Bradleya* 39: 172-176, ills. [DOI](#)

Smith, G. F., Figueiredo, E. & Deysel, L. (2021) *Kalanchoe serrata*. *Flow. Pl. Afr.* 67: 104-113, ills., map, t. 2370.

Smith, G. F., Figueiredo, E. & Deysel, L. (2021) *Kalanchoe pumila*. *Flow. Pl. Afr.* 67: 92-102, ills., map, t. 2369.

- Smith, G. F., Figueiredo, E. & Hankey, A. (2021)** The identity of *Kalanchoe lubangensis* R. Fern. (*Crassulaceae* subfam. *Kalanchooideae*), a little-known species endemic to southwestern Angola, with an extension of its distribution range. *Bradleya* 39: 188-194, ill., map. DOI
- Smith, G. F., Figueiredo, E., Crouch, N. R. & Deyssel, L. (2021)** *Kalanchoe millottii*. *Flow. Pl. Afr.* 67: 80-90, ill., map, t. 2368.
- Smith, G. F., Figueiredo, E., Klopper, R. R., Crouch, N. R., Walker, C. C. & Condy, G. (2021)** *Aloiampelos ciliaris* var. *ciliaris*. *Flow. Pl. Afr.* 67: 18-30, ill., map, t. 2362.
- Smith, G. F., Figueiredo, E., Shtein, R. & Deyssel, L. (2021)** *Kalanchoe manginii*. *Flow. Pl. Afr.* 67: 70-79, ill., map, t. 2367.
- Smith, G. F., Figueiredo, E., Walker, C. C. & Condy, G. (2021)** *Kalanchoe beharensis*. *Flow. Pl. Afr.* 67: 50-59, ill., map, t. 2365.
- Smith, G. F., Klein, D.-P. & Shtein, R. (2021)** A revision of the Malagasy *Kalanchoe* subg. *Kitchingia* (*Crassulaceae* subfam. *Kalanchooideae*: History, taxonomy, and nomenclature. *Phytotaxa* 507(1): 67-80, ill., map, key. DOI
- Smith, G. F., Klopper, R. R., Crouch, N. R. & Figueiredo, E. (2020)** Reinstatement of *Aloe davyana* (*Asphodelaceae* subfam. *Aloioideae*), a winter-flowering species endemic to central-northeastern South Africa. *Phytotaxa* 475(3): 201-208, ill., map, key [Omitted previously.] DOI
- Smith, G. F., Klopper, R. R., Crouch, N. R. & Figueiredo, E. (2021)** Reinstatement of *Aloe davyana* var. *subulifera* (*Asphodelaceae* subfam. *Aloioideae*), a distinctive variety of an endemic South African Aloe. *Phytotaxa* 482(2): 208-212, ill., map DOI
- Smith, G. F., Shtein, R. & Klein, D.-P. (2021)** *Kalanchoe* subg. *Alatae* (*Crassulaceae* subfam. *Kalanchooideae*), a new rank for *K.* sect. *Alatae*. *Phytotaxa* 509(2): 255-258, ill. DOI
- Spath, J. & Moore, J. (2021)** Agaves. Species, cultivars & hybrids. sine loco (US): Published by the authors. [9] + 356 pp., ill.
- Staník, R. (2021)** [Czech:] The genus *Uebelmannia* Buining in habitat (continuation). *Cactaceae* etc. 31(1): 33-39, ill. [Continued from l.c. 30(4), 2020.]
- Staník, R. (2021)** [Czech:] *Discocactus horstii* Buining et Brederoo in nature. *Cactaceae* etc. 31(2): 43-45, ill. [Included for the illustrations.]
- Staník, R. (2021)** [Czech:] *Neowerdermannia chilensis* Backeberg, a curiosity from the North of Chile. *Cactaceae* etc. 31(3): 114-115, ill. [Included for the illustrations.]
- Staník, R. (2021)** [Czech:] *Horridocactus paucicostatus* F. Ritter in the nature of Chile. *Cactaceae* etc. 31(3): 97-99, ill. [Included for the illustrations.]
- Starha, R. (2021)** [Czech:] Degeh Bur and its flora. *Cactaceae* etc. 31(1): 4-7, ill. [On succulents from the Ogaden, Ethiopia.]
- Starha, R. (2021)** [Czech:] *Aloe pembana* on the site. *Cactaceae* etc. 31(2): 50-51, ill.
- Starr, G. D. (2021)** Agaves of Oaxaca: Part one. Two recently described species: *Agave megalodonta* and *Agave quiotepēcensis*. *Cact. Succ. J. (US)* 93(3): 226-237, ill., maps. DOI
- Starr, G. D. (2021)** (stated publication year: 2020) (e-published 2021) A reevaluation of the *Agave kerchovei* complex (*Asparagaceae* / *Agavoideae*) including expanded descriptions of three species. *Haseltonia* 27: 60-72, ill., map. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] DOI
- Starr, G. D., Davis, T. J. & Villareal Quintanilla, J. A. (2021)** A cryptic new species of *Agave* (*Asparagaceae* / *Agavoideae*) and an amplified description of *Agave tenuifolia*. *Cact. Succ. J. (US)* 93(4): 273-285, ill., maps, key. DOI
- Stephenson, R. (2021)** *Rhodiola* plants changing sex 2020. *Sedum Soc. Newslett.* 137: 34-37, ill.
- Stephenson, R. (2021)** *Crassula dependens* Bolus. *Sedum Soc. Newslett.* 137: 45-46, ill. [Included for the illustrations.]
- Stephenson, R. (2021)** *Petrosedum sediforme* extremes (questioning var *dianium*). *Sedum Soc. Newslett.* 137: 48-51, ill.
- Stephenson, R. (2021)** Some seed-growing success 2020. *Sedum Soc. Newslett.* 138: 75, ill. [Included for the illustrations of *Sedum maireanum*.]

Stephenson, R. (2021) Every collection should have at least 1 pot full #1: *Sedum batallae*. Sedum Soc. Newslett. 139: 80-82, ill. [Included for the illustrations.]

Stephenson, R. (2021) Dif ferentiating the common *Petrosedum* in cultivation. Sedum Soc. Newslett. 140: 13-17, ill.

Stephenson, R. (2021) Every collection should have at least 1 pot full #2: *Sedum caducum*. Sedum Soc. Newslett. 140: 4-5, ill. [Included for the illustrations.]

Stuchlík, S. (2021) [Czech:] *Frailea horstii* F. Ritter – a cactus from Rio Grande do Sul (Brazil). Cactaceae etc. 31(1): 8-11, ill.

Stuchlík, S. (2021) Visits to *Gymnocalycium volskyi*. Kakt.-Klub 5(1): 34-36, ill. [Published in parallel English, Czech and Russian versions.]

Stuchlík, S. (2021) [Czech:] Question marks around *Notocactus rutilans* f. *robustior* N. Gerloff. Minimus 52(1): 3-11, ill.

Sukhorukov, A. P., Sennikov, A. N., Nilova, M. V., Kushunina, M., Belyaeva, I. V., Zaika, M. A. & Hanáček, P. (2021) A new endemic species of *Sesuvium* (Aizoaceae: *Sesuvioideae*) from the Caribbean Basin, with further notes on the genus composition in the West Indies. Kew Bull. 76(4): 651-674, ill., maps, key. DOI

Swanepoel, W. (2021) *Euphorbia otjingandu* Swanepoel, the shortstem candelabra tree of the Kaokoveld, northwestern Namibia. Euphorbia World 17(1): 18-29, ill., map.

Taylor, N. P. (2021) Notes on cultivated *Pereskia quisqueyana* and related species (Cactaceae). Bradleya 39: 69-110, ill., key. DOI

Taylor, N. P., Hoxey, P. & Gdaniec, A. (2021) *Dendrocerus* Britton & Rose – one species or two? Bradleya 39: 16-22, ill. DOI

Taylor, N. P., Zappi, D. C. & Albuquerque-Lima, S. (2021) A new *Pereskia* (Cactaceae) from Minas Gerais, Brazil. Phytotaxa 494(3): 289-296, ill., key. [Includes a key to *Pereskia* p.p.] DOI

Thiede, J., Smith, G. F., Figueiredo, E. & Starr, G. D. (2021) (stated publication year: 2020) (e-published 2021) The taxonomy of *Agave lophantha* Schiede (1829) and *A. univittata* Haw. (1831) (*Asparagaceae* subfam. *Ag-*

avoideae / *Agavaceae*) and the typification of both names. Haseltonia 27: 14-20, ill. [Published 28. 12. 2020 according to the inside title page of the print edition, but 1. 3. 2021 according to the digital version.] DOI

Tian, X., Guo, J., Zhou, X., Ma, K., Ma, Y., Shi, T. & Shi, Y. (2021) Comparative and evolutionary analyses on the complete plastomes of five *Kalanchoe* horticultural plants. Frontiers Pl. Sci. 12: 705874, 12 pp. DOI

Toit, K. du (2021) *Bulbine bruynsii* – eine bemerkenswerte Sukkulente / a remarkable succulent. Avonia 39(4): 268-269, ill. [Included for the illustrations.]

Tropper, R. (2021) Frucht- und Samenbildung von *Rhipsalis hoelleri* Barthlott & N. P. Taylor. EPIG 84: 25-27, ill.

Turland, N. J. & Bienvenu, J. (2021) *Crassulaceae*. *Sedum dasyphyllum*. In: Raab-Straube, E. von & Raus, T. (eds.), Euro+Med-Checklist Notulae, 14. Willdenowia 51(3): 358-359, ill. DOI

Turner, I. M. (2021) Heyne, Roth, Roemer and Schultes, and the plant names published in *Novae plantarum species praesertim Indiae orientalis*. Taxon 70(2): 365-428, ill. [Includes notes on *Ceropegia mucronata*, *Cotyledon calycina* and *Plectranthus caninus*.] DOI

Vaid, M. K. (2021) In Indien gefundene *Caralluma*-Arten (Familie *Apocynaceae*), Teil 3 / *Caralluma* species found in India (family *Apocynaceae*) Part III. *Caralluma adscendens*, *C. stalagmifera*, *C. edulis* und/and (*C.*) *Apteranthes tuberculata*. Avonia 39(1): 58-73, ill. [Continued from l.c. 37(1), 2019.]

Varga, Z. (2021) (stated publication year: 2020) (e-published 2021) Z wizyta u *Turbinicarpus* (*Rapicactus*) *mandragora*. Paying a visit to *Turbinicarpus* (*Rapicactus*) *mandragora*. Kakt. Inne 12(3): 90-97, ill. [Volume dated 2020, published 28. 3. 2021 according to the metadata of the digital version.]

Varga, Z. (2021) Historia pra wdziwej *Escobaria grata*. The story of the true *Escobaria grata*. Kakt. Inne 12(4): 136-140, ill.

Varga, Z. (2021) [Hung arian:] *Leuchtenbergia principis*. Kakt. Világ 45(1): 33-41, ill. [Included for the habitat illustrations.]

- Varga, Z. (2021)** [Hungarian:] The presentation of *Turbinicarpus booleanus* Hinton in its habitat. *Kakt. Világ* 45(2): 95-101, ill. [Included for the illustrations.]
- Vázquez-Castillo, S., Miranda-Jácome, A. & Ruelas Inzunza, E. (2019)** Patterns of frugivory in the columnar cactus *Pilosocereus leucocephalus*. *Ecol. & Evol.* 9(3): 1268-1277, ill., map. [Omitted previously.] DOI
- Vázquez-García, J., Acevedo-Rosas, R., Cházaro-Basáñez, M., Nieves-Hernández, G. & Sahagún-Godínez, E. (2021)** *Graptopetalum rosanavadoensis* (Crassulaceae): A new haplostemonous species from the Nevado de Colima, Jalisco, Mexico. *Phytotaxa* 496(2): 159-169, ill., key, map. [Includes a key to the species of *Gr. aptopetalum* subgen. *Glassia*.] DOI
- Veldhuisen, R. van (2021)** *Euphorbia beharensis* Leandri, from a collector's point of view. *Euphorbia World* 17(1): 30-36, ill.
- Veldhuisen, R. van (2021)** From the Leach archive: *Euphorbia ambroseae* L. C. Leach. *Euphorbia World* 17(1): 43-45, ill.
- Veldhuisen, R. van (2021)** Some *Euphorbias* from Tanzania. *Euphorbia World* 17(2): 40-45, ill.
- Veldhuisen, R. van (2021)** A few more *Euphorbias* from Tanzania. *Euphorbia World* 17(3): 42-47, ill.
- Verloove, F. & Salas Pascual, M. (2021)** Notes on genuine *Agave vivipara* (Agavaceae), a poorly known Caribbean species, recently introduced in the Canary Islands (Spain). *Bradleya* 39: 259-264, ill. DOI
- Versieux, L. M. & Calvente, A. (2021)** A nomenclatural note on the name *Xiquexique frewenii* (Cactaceae). *Phytotaxa* 521(2): 121-122. DOI
- Vlk, V. (2021)** The rediscovery of *Euphorbia piscidermis* M. G. Gilbert in eastern Ethiopia. *Euphorbia World* 17(3): 37-41, ill.
- Walker, C. C. (2021)** *Aloidendron dichotomum*. Der Urtyp der Baumaloe / The archetypal tree aloe. *Avonia* 39(3): 210-219, ill.
- Walker, C. C. (2021)** *Sansevieria pinguicula* – the ‘walking’ *Sansevieria*. *Cact. Succ. Rev.* 31: 17-20, ill. [Included for the illustrations.]
- Walker, C. C. (2021)** A survey of succulents of the Mallow Family (Malvaceae). *CactusWorld* 39(2): 135-148, ill.
- Walker, C. C. (2021)** *Stapelia divaricata* Masson – the rarest and most localised species of *Stapelia*. *CactusWorld* 39(3): 247-249, ill.
- Walker, C. C. (2021)** Succulents contained. *Sedum lucidum*. *CactusWorld* 39(4): 300, ill. [Included for the illustrations.]
- Walker, C. C. (2021)** *Aloe k edongensis* – a shrubby Kenyan endemic. *Haworthiad* 35(1): 20-24, ill.
- Walker, C. C. (2021)** *Aloe te woldei* – a rare cliff-dwelling Ethiopian endemic. *Haworthiad* 35(1): 4-5, ill.
- Walker, C. C. (2021)** *Aloe squarrosa* Baker – a unique and highly localised Socotran endemic. *Haworthiad* 35(2): 50-53, ill.
- Walker, C. C. (2021)** *Aristaloe aristata*: A unique, monotypic species. *Haworthiad* 35(3): 76-79, ill.
- Weber, R. (2021)** Zur Geschichte der *Rebutia krazinziana*. *Echinopseer* 18(1): 48-55, ill.
- Weber, R. (2021)** Notizen zu *Rebutia tuberosa* Ritter – Teil 3. *Echinopseer* 18(1): 56-64, ill. [Continued from 17(2), 2020.]
- Weber, R. (2021)** Zwergkakteen aus dem Hochgebirge: *Rebutia albopectinata*. *Kakt. and. Sukk.* 72(11): 325-334, ill.
- Weber, R. (2021)** Zwergkakteen aus dem Hochgebirge: *Rebutia atrovirens*. *Kakt. and. Sukk.* 72(4): 103-112, ill. [Abridged Russian version in *Kakt. Tolko* 2021(2): 1-10, ill., 2021.]
- Weber, R. (2021)** Een *Rebutia einsteinii* uit de collectie van H. Rubingh. *Succulenta* 100(1): 37-39, ill.
- Wei, N., Mutie, F. M., Mwachala, G., Grace, O. M., Hu, G.-W. & Wang, Q.-F. (2021)** *Euphorbia mbuinzauensis*, a new succulent species in Kenya from the *Synadenium* group in *Euphorbia* sect. *Monadenium* (Euphorbiaceae). *PhytoKeys* 183: 21-35, ill., map. [Includes a molecular phylogeny of the *Synadenium* group.] DOI

Wei, N., Pérez-Escobar, O. A., Musili, P. M., Huang, W.-C., Yang, J.-B., Hu, A.-Q., Hu, G.-W., Grace, O. M. & Wang, Q.-F. (2021) Plastome evolution in the hyperdiverse genus *Euphorbia* (*Euphorbiaceae*) using phylogenomic and comparative analyses: Large-scale expansion and contraction of the inverted repeat region. *Frontiers Pl. Sci.* 12: 712064, 18 pp. DOI

Wilson, K. L. (2021) Report of the General Committee: 22. *Taxon* 70(6): 1360-1362. [Covers proposals concerning *Desmidor chis* and *Mossia*.] DOI

Wittner, H. (2021) Some notes about *Matucana intertexta*. *CactusWorld* 39(1): 17-23, ill.; (2): 166 [errata].

Wittner, H. (2021) *Borzicactus leonensis* – ein wenig bekannter Säulenkaktus aus Ecuador. *Kakt. and. Sukk.* 72(4): 97-100, ill. [Included for the illustrations. Abridged Russian version in *Kakt. Tolko* 2021(3): 12-14, ill., 2021.]

Woolnough, I. (2021) Looking at *Fouquierias*. *Cact. Succ. Rev.* 28: 27-32, ill. [Included for the illustrations.]

Woolnough, I. (2021) *Ferocactus haematacanthus* – a lesser known *Ferocactus*. *CactusWorld* 39(1): 29-33, ill. [Included for the illustrations.]

Woolnough, I. (2021) *T urbinicarpus beguinii* subsp. *zaragozae* [sic!]. *CactusWorld* 39(4): 283-286, ill.

Wyk, P. C. V. van (2021) Die Gattungen *Othonna* & *Crassothonna* in der Richtersveld Bio Region und die überraschende Entdeckung einer bislang unbekannten Art. The genera *Othonna* & *Crassothonna* in the Richtersveld Bio Region and the surprising discovery of a previously unknown species. *Avonia* 39(1): 6-25, ill.

Yinger, B. R. & Sikawa, R. A. (2021) Visiting the forgotten places: Beyond Lake Eyasi. *Sansevieria* 44: 22-28, ill. [Included for the illustrations of *Sansevieria* taxa.]

Yinger, B. R. & Sikawa, R. A. (2021) (Re)discovering *Sansevieria braunii* Engl. & Krause. *Sansevieria* 44: 8-17, ill., maps.

Yinger, B. R. & Sikawa, R. A. (2021) *Sansevieria newtoniana* T. G. Forrest in Tanzania. *Sansevieria* 45: 25-28, ill.

Zacharias, I. (2021) Auf der Suche nach *Orbea namaquensis* im Namakwa District in Südafrika. In search of *Orbea namaquensis* in the Namakwa District in South Africa. *Stapeliad J.* 2021(2): 58-69, ill. [Included for the illustrations.]

Zahora, J. (2021) (stated publication year: 2020) *Radosci i smutki z rodzajem Echinofossulocactus*. Joys and sorrows with the genus *Ec hinofossulocactus*. *Kakt. Inne* 12(2): 44-51, ill., map [Volume for 2020, digital version announced 4. Jan. 2021.]

Zahra, R. (2021) (stated publication year: 2020) Quale *Aloe* cresce in natura a Gozo? *Piante Grasse* 40(4): 160-165, ill. [Volume for 2020, received at ZSS March 2021.]

Zappi, D. C., Barbosa-Silva, R. G. & Taylor, N. P. (2021) Notes on *Pseudorhipsalis amazonica* (*Cactaceae* – *Hylocereeae*) from eastern Amazônia, Brazil. *Bradleya* 39: 111-115, ill., map. DOI

Zheng, J., Meinhardt, L. W., Goenaga, R., Zhang, D. & Yin, Y. (2021) The chromosome-level genome of dragon fruit reveals whole-genome duplication and chromosomal co-localization of betacyanin biosynthetic genes. *Hort. Res.* 8(1): 63, 16 pp., ill. DOI

Zlatkovic, B., Jovanovic, M., Stojilkovic, B., Krstić, J., Stojanovic, M., Stojanovic, S., Zdravkovic, J. & Lakušić, D. (2019) Morphological traits of *Sedum album sensu stricto* (*Crassulaceae*): Variability patterns across the Balkan Peninsula. *Biol. Serb.* 41(1): 3-12, map. [Omitted previously.] DOI URL

Zuijlen, A. van (2021) Een speciaal plekje (15): *Oreocereus celsianus*. *Succulenta* 100(3): 122-131, ill. [Included for the illustrations.]

Zuloaga, F. O. & Belgrano, M. J. (eds.) (2021) *Flora Argentina*, Volumen 19, Tomo II. Buenos Aires (RA): Instituto Multidisciplinario de Biología Vegetal, CONICET. [This volume includes *Anacampserotaceae*, *Montiaceae*, *Portulacaceae* and *Talinaceae*.]