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NOMENCLATURAL TRANSFERS FROM *MANFREDA* SALISB., *POLIANTHES* L. AND *BRAVOA* LEX. TO *AGAVE* L. (AGAVACEAE/ ASPARAGACEAE)

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Abstract: In the framework of a monophyletic circumscription of *Agave* L., twelve new combinations are proposed in *Agave* L. (Agavaceae/Asparagaceae) for taxa published in *Manfreda* Salisb., *Polianthes* L. or *Bravoa* Lex.

Phylogenetic studies of the Agavaceae (or Asparagaceae-Agavoideae) based on molecular (Bogler and Simpson 1995, 1996) or morphological data (Hernández-Sandoval 1995) showed that the three genera *Manfreda* Salisb., *Polianthes* L. (incl. *Bravoa* Lex.) and *Prochnyanthes* S. Watson group together with *Agave* L. As far as the phylogenies exhibit a higher level of resolution, *Manfreda*, *Polianthes* and *Prochnyanthes* form a clade which is nested within *Agave*, thus rendering *Agave* as traditionally circumscribed paraphyletic. In the framework of a taxonomic synopsis of the Agavaceae, a monophyletic re-circumscription of *Agave* was suggested (Thiede 2001): *Polianthes*, *Manfreda* and *Prochnyanthes* were included in *Agave* and together classified as *Agave* Subgenus *Manfreda* (Salisb.) Baker. To accommodate this revised circumscription of *Agave*, necessary new combinations were published by Thiede and Eggl (1999, 2001).

Molecular and morphological phylogenetic studies published since 2001 fully confirmed the revised monophyletic circumscription of *Agave* including *Manfreda*, *Polianthes* and *Prochnyanthes* (Bogler et al. 2006, Good-Ávila et al. 2006, Tambutti in Eguiarte et al. 2006, Smith et al. 2008). For taxa published in *Manfreda* and *Polianthes* since 2001, one new combination was proposed by Etter and Kristen (2007). Here, the remaining twelve new combinations are proposed for taxa published in *Manfreda* and *Polianthes* but without binomial in *Agave* as yet. In addition, one old hybrid name published 1899 in *Bravoa* is transferred to *Agave*.

Agave bulbulifera (CASTILLEJOS & E.SOLANO) THIEDE, **comb. nov.**

Basionym *Manfreda bulbulifera* CASTILLEJOS & E.SOLANO, *Acta Botanica Mexicana* 82: 68 (67–73; fig. 1), 2008.

Agave paniculata (L.HERN., R.A.ORELLANA & CARNEVALI) THIEDE, **comb. nov.**

Basionym *Manfreda paniculata* L.HERN., R.A.ORELLANA & CARNEVALI, *Journal of the Torrey Botanical Society* 135: 170 (–173, 168–169; figs. 1,

3–5), 2008.

Agave parva (AARÓN RODR.) THIEDE, **comb. nov.**

Basionym *Manfreda parva* AARÓN RODR., *Acta Botanica Mexicana* 88: 2 (1–8; figs. 1–2), 2009.

Agave petskinil (R.A.ORELLANA, L.HERN. & CARNEVALI) THIEDE, **comb. nov.**

Basionym *Manfreda petskinil* R.A.ORELLANA, L.HERN. & CARNEVALI, *Journal of the Torrey Botanical Society* 135: 173 (–176, 168–169; figs. 2–5), 2008.

Agave paniculata and *A. petskinil* are both unusual in having paniculate inflorescences and a tendency toward becoming caulescent suggesting natural hybrids between (*Agave* subg.) *Manfreda* and a paniculate *Agave* (Jankalski 2009).

Agave justosierrana (GARCÍA-MEND.) THIEDE, **comb. nov.**

Basionym *Manfreda justosierrana* GARCÍA-MEND., *Revista Mexicana de Biodiversidad* 82: 748 (–750, 752–753, 756; fig. 1), 2011.

Agave umbrophila (GARCÍA-MEND.) THIEDE, **comb. nov.**

Basionym *Manfreda umbrophila* GARCÍA-MEND., *Revista Mexicana de Biodiversidad* 82: 750 (–754, 756; fig. 2), 2011.

Agave verhoekiae (GARCÍA-MEND.) THIEDE, **comb. nov.**

Basionym *Manfreda verhoekiae* GARCÍA-MEND., *Revista Mexicana de Biodiversidad* 82: 754 (–756; fig. 3), 2011.

Agave duplicata THIEDE & EGGLI **subsp. pueblensis** (E.SOLANO & GARCÍA-MEND.) THIEDE, **comb. & stat. nov.**

Basionym *Polianthes geminiflora* (LEX.) ROSE var. *pueblensis* E. SOLANO & GARCÍA-MEND., *Acta Botanica Mexicana* 78: 117 (–121; fig. 2), 2007.

Agave duplicata is a replacement name (nomen

novum) due to *A. geminiflora* (TAGL.) KER GAWL. 1817 when transferring *Polianthes geminiflora* into *Agave* (Thiede and Eggl 1999).

Agave multicolor (E.SOLANO & DÁVILA) THIEDE, **comb. nov.**

Basionym *Polianthes multicolor* E.SOLANO & DÁVILA, *Novon* 13: 119 (–122; fig. 1), 2003.

Agave oaxacana (GARCÍA-MEND. & E.SOLANO) THIEDE, **comb. nov.**

Basionym *Polianthes oaxacana* GARCÍA-MEND. & E.SOLANO, *Acta Botanica Mexicana* 78: 112 (–117; fig. 1), 2007.

Agave zapopanensis (E.SOLANO & RÍOS-GÓMEZ) THIEDE, **comb. nov.**

Basionym *Polianthes zapopanensis* E.SOLANO & RÍOS-GÓMEZ, *Brittonia* 63: 70 (–74; fig. 1), 2011.

Agave × neokewensis THIEDE, **nom. nov.**

Basionym *Bravoa × kewensis* W.WATSON, *Gardeners' Chronicle ser. 3*, 26: 112, 1899.

Agave × neokewensis is a replacement name (nomen novum) due to *A. kewensis* JACOBI 1866.

The hybrid *Bravoa × kewensis* was raised at Kew in 1894 and flowered in 1899. Its parents were given as *Bravoa geminiflora* LEX. (= *Polianthes geminiflora* (LEX.) ROSE = *Agave duplicata* THIEDE & EGGLI) and *Bravoa (Prochnyanthes) bulliana* BAKER (= *Prochnyanthes bulliana* (BAKER) BAKER = *Agave bulliana* (BAKER) THIEDE & EGGLI).

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