

Notes on the typification and nomenclature of *Agave dissimulans* Trelease, *Agave convallis* Trelease, and *Agave kerchovei* Lem. (Asparagaceae: Agavoideae / Agavaceae)

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Abstract: The typification of the names *Agave convallis* Trelease and *A. dissimulans* Trelease is discussed and clarified. We show that the two *Trelease 4* specimens associated with the name *A. convallis* are not duplicates (they have different collecting dates). The *Trelease 4* specimen dated 5 February 1905 (barcode MO-1128755; MO specimen number 3346866) is the lectotype of the name *A. convallis*, while the other *Trelease 4* specimen dated 12 February 1905 (barcode MO-1256267; MO specimen number 3346867) is a syntype. We confirm the lectotypification of the name *A. dissimulans*, with one of the two *Trelease 81* specimens dated 11 February 1905 (barcode MO-1128757; MO specimen number 3346870). The other *Trelease 81* specimen, which is also dated 11 February 1905 (barcode MO-1128758; MO specimen number 3346869), is an isolectotype. The typification status of *Trelease 82*, which is also dated 11 February 1905 [barcode MO-1256273; MO specimen number 3346871], is that of syntype. All the Trelease specimens mentioned here are held in the Herbarium of the Missouri Botanical Garden (MO). For the sake of completeness we also refer to the typification, and clarify the etymology, of the name *Agave kerchovei* Lem. This species is a close relative of *A. convallis* and *A. dissimulans*.

Keywords: Agavaceae; *Agave convallis* Trelease; *A. dissimulans* Trelease; *Agave kerchovei* Lem.; Asparagaceae; Agavoideae; etymology; nomenclature; Oaxaca; southern Mexico; typification

INTRODUCTION

William Trelease, who did considerable taxonomic work on several New World genera, including *Agave* L. (Kunkel, 1961: 318–332; Smith & Figueiredo, 2014), described both *A. convallis* Trelease and *A. dissimulans* Trelease from Oaxaca, southern Mexico (Trelease 1920: 138–139). In his part-monograph of *Agave*, Gentry (1982: 149–153) included both *A. convallis* and *A. dissimulans* in his concept of *A. kerchovei* Lem. (Lemaire, 1864: 64) (Figure 1). This view was repeated by Anonymous (1988: 291). Gentry regarded *A. kerchovei* as showing “Considerable variation [...] in nearly all populations observed” (Gentry 1982: 152). Gentry (1982) did not reflect on the typification of the names *A. convallis* and *A. dissimulans*. Nearly 30 years later, García-Mendoza (2011: 22), in his work on the *Flora of the Tehuacán-Cuicatlán Valley*, resurrected *Agave convallis* (Figure 2) as a species in its own right. He also recognised *A. kerchovei*, from which *A. convallis* was sepa-

rated, but included *A. dissimulans* in the synonymy of *A. convallis* (García-Mendoza, 2011: 28).

We here clarify the typification of the names *Agave convallis* and *A. dissimulans*. For the sake of nomenclatural stability and to prevent confusion regarding the application of these two *Agave* names, we show that the two *Trelease 4* specimens associated with the name *A. convallis* are not duplicates (they have different dates). The *Trelease 4* specimen dated 5 February 1905 (barcode MO-1128755; MO specimen number 3346866) is the lectotype of the name *A. convallis*, while the other *Trelease 4* specimen dated 12 February 1905 (barcode MO-1256267; MO specimen number 3346867) is a syntype.

We also confirm the arguably contentious lectotypification of the name *A. dissimulans*, with one of the two *Trelease 81* specimens dated 11 February 1905 (barcode MO-1128757; MO specimen number 3346870). The other *Trelease 81* specimen, which is also dated 11 February 1905 (barcode MO-1128758; MO specimen number 3346869), is an



Figure 1. *Agave kerchovei* growing socially with *Neobuxbaumia mezcalaensis* (Bravo) Backeb. in the desert north of Huajuapán de León, Oaxaca, Mexico. Photograph: Greg Starr.

isolectotype. We conclude and clarify that the type status of *Trelease 82*, which is also dated 11 February 1905 [barcode MO-1256273; MO specimen number 3346871], is that of syntype. All the *Trelease* specimens mentioned here are held in the Herbarium of the Missouri Botanical Garden (MO). For the sake of completeness we also refer to the typification, and clarify the etymology, of the name *A. kerchovei* Lem. This species is a close relative of *A. convallis* and *A. dissimulans*.

TYPE OF THE NAME *AGAVE CONVALLIS*

As far as we could determine, the earliest attempt to clarify the typification of the names *Agave convallis* and *A. dissimulans* was that of Espejo Serna & López-Ferrari (1993: 17, 18). However, their typifications were not effective as for both these *Agave* names they cited as types what proved to be more than one specimen (see below).

As the type of the name *Agave convallis*, *Trelease* (1920: 138) cited “Oaxaca; type, in herbarium of the Missouri Botanical Garden [MO], from El Parián, *Trelease 4*, in 1905.”. He therefore unambiguously cited a dated [“1905”], apparently single, specimen (McNeill *et al.*, 2012; Article 8.1), which helpfully was additionally associated with one of his collecting numbers [“*Trelease 4*”]. However, Smith & Figueiredo (2014: 232) noted that two sheets, both with the collector and number given as “*Trelease 4*” [MO MO-1128755 and MO MO-1256267], exist at MO. For the purposes of typification, a specimen is a gathering, or part of a gathering of a single species [...] **made at one time** (emphasis by present authors;

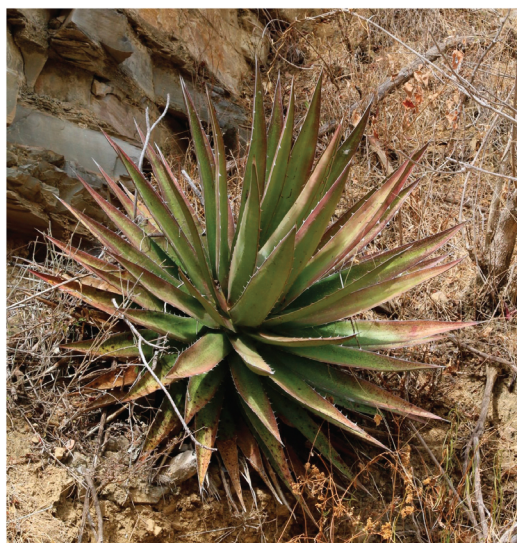


Figure 2. *Agave convallis* found growing in the Tomellín Canyon just north of El Parián. Photograph: Greg Starr.

see McNeill *et al.*, 2012; Article 8.2).

This had earlier prompted García-Mendoza (2011: 22) to treat the typification of the name *A. convallis* as follows: “TIPO: MÉXICO. Oaxaca: El Parián, Tomellín Canyon, *W. Trelease 4*, 5 feb 1905 (lectotipo: MO, <http://www.tropicos.org/Image/26008!> isolectotipo: MO, <http://www.tropicos.org/Image/26009!> designado aquí)”. Although Smith & Figueiredo (2014: 232) recorded this lectotypification of the name *A. convallis* by García-Mendoza (2011), they noted that the two *Trelease 4* specimens were collected on different dates (5 February 1905 and 12 February 1905, respectively), and that they therefore cannot be duplicates. While García-Mendoza (2011: 22) was correct in lectotypifying the name *A. convallis*, rather than treating *Trelease 4* as the holotype, the second *Trelease 4* specimen kept at MO cannot be regarded as an isolectotype (a duplicate of the lectotype), as the two specimens are not duplicates. Rather, the two “*Trelease 4*” specimens are syntypes (McNeill *et al.*, 2012; see Article 9.5: “...any one of two [...] specimens simultaneously designated in the protologue as types”, and Article 40 Note 1).

TYPE OF THE NAME *AGAVE DISSIMULANS*

As the “...type...” of the name *Agave dissimulans*, *Trelease* (1920: 139) cited “Oaxaca; type, in the herbarium of the Missouri Botanical Garden, from Mexia, *Trelease*.”, without providing more exact information (the collecting date, for example) about the actual type specimen, nor of his [*Trelease*’s] applicable collecting number(s). As far as we could ascertain he prepared three herbarium specimens of applicable material that are associated with two *Trelease* collecting numbers. These are:

- *Trelease 81*, of which two specimens exist with this number, both dated “2 November 1905”. It is possible that *Trelease* intended

his two “81” collections to be treated as two parts of the same gathering (both included sterile and fertile material). It is noteworthy that the actual specimens represented in the images, which are available online [see: <http://www.tropicos.org/Image/26008>, and <http://www.tropicos.org/Image/26009>], have “2 of 2” and “1 of 2” written on the labels post digitization. This indicates that somebody [not Trelease] thought they were two parts of the same gathering. However, this does not reflect Trelease’s original view, and moreover, is unlikely as the marginal teeth are more widely spaced on one specimen than on the other, indicative of two separate plants having been pressed.

- *Trelease 82*, which constitutes one sheet, with the same date as the two *Trelease 81* specimens, i.e., “2 November 1905”. According to the specimen label attached to *Trelease 82*, the specimen was prepared from a “young plant”, a comment that was written directly on the label in Trelease’s handwriting (see at the link provided below). This seemingly indicates that the plant sampled was still in its vegetative phase, and had therefore not yet flowered. However, rather counter-intuitively, the specimen of the “young plant” has flowers, seed, and typically white seed like structures attached to the sheet. While this indicates that the plant had indeed reached flowering maturity [the presence of infructescence segments], the seed that forms part of the specimen create the impression that material was obtained from more one specimen as it is unlikely that a plant would carry both flowers and ripe seed at the same time.

Although Trelease (1920) stated that the type of the name *Agave dissimulans* is kept in the herbarium (MO) of the Missouri Botanical Garden, he did not designate any one of these three specimens (neither one of the two *Trelease 81* specimens, nor *Trelease 82*) as the type. Originally, both numbers (*Trelease 81* [two specimens] and *Trelease 82* [one specimen]) had MO labels stating “Holotype:” attached to them. However, “A holotype [...] is the one specimen [...] used by the author as the nomenclatural type (emphasis by present authors; see McNeill *et al.*, 2012: Article 9.1). Therefore, “Holo” was eventually crossed out on all three the specimens and replaced with the handwritten word “Syn” on all three sheets. This resulted in García-Mendoza (2011: 22) treating the typification of the name *A. dissimulans* as follows: “TIPO: MÉXICO. Oaxaca: [Ignacio Mejía] Mexia (toward Tomellín), W. Trelease 81-82, 11 feb 1905 (lectotipo: MO-2 partes, <http://www.tropicos.org/Image/26018>! isolectotipo: <http://www.tropicos.org/Image/26019>! designado aquí)”.

When lectotypifying [“lectotipo”] the name *Agave dissimulans*, García-Mendoza (2011: 22) provided a link to only one specimen, <http://www.tropicos.org/Image/26018?langid=0>, which is one of the *Trelease 81* specimens. As noted above, two specimens carry

this collecting number, the other one being <http://www.tropicos.org/Image/26019?langid=0>. Perhaps somewhat confusingly, García-Mendoza (2011: 22) referred to the “lectotipo” as “MO-2 partes”, making it tempting to regard his typification as ineffective, given that a lectotype “...is a specimen or illustration...” [note singular] (emphasis by present authors; see McNeill *et al.*, 2012; Article 9.2). He further regarded the “TIPO” of the name *A. dissimulans* as consisting of “W. Trelease 81-82” (which are represented by three specimens) and, as noted above, the lectotype as consisting of two parts [“2-partes”], which it does not, as two separate specimens (not sheets) are involved. However, as García-Mendoza (2011: 22) unambiguously gave a link to a single specimen only (see above), his lectotypification of the name *A. dissimulans* must stand.

In accordance with Recommendation 9C.1. of McNeill *et al.* (2012: 22), García-Mendoza (2011: 22) referred to the second *Trelease 81* specimen as an “isolectotipo” (isolectotype), i.e., a duplicate of the lectotype.

García-Mendoza (2011: 22) did not provide a hyperlink to *Trelease 82* (<http://www.tropicos.org/Image/26020?langid=0>), which he did for the two *Trelease 81* sheets, nor did he accord any definite type status to *Trelease 82*. This specimen is a syntype (McNeill *et al.*, 2012; Article 9.5).

TYPE OF THE NAME *AGAVE KERCHOVEI*

As far as we could ascertain, Gentry (1982: 151) was the first to address the typification of the name *Agave kerchovei* Lem. (Lemaire, 1864: 64). Gentry stated “Lectotype: Jacobi’s sketch as traced by Berger in US”; he reproduced the drawing as Figure 7.17 (Gentry, 1982: 150). Espejo Serna & López-Ferrari (1993: 17) essentially repeated Gentry’s lectotypification, but added “Puebla?” after “TIPO:”. However, Lemaire (1864) did not refer to any material (neither specimens, nor illustrations) that would qualify as original material, and from which a lectotype could have been selected.

García-Mendoza (2011: 28) corrected Gentry’s ‘lectotypification’ to a neotypification. He stated: “TIPO: lámina, Jacobi’s sketch as traced by Berger (neotipo: US, designado por Gentry, 1982[151]).”

CONCLUSION

The typification of the three names resolves as follows:

***Agave convallis* Trelease** in *Contr. U.S. Nat. Herb.* **23(1)**: 138. (1920). **Lectotype**: Mexico. Oaxaca: El Parián, Tomellín Canyon, *W. Trelease 4*, 5 February 1905, MO, (MO barcode: MO-1128755; MO specimen number 3346866) [image accessible at: <http://www.tropicos.org/Image/26008!>]; designated by García-Mendoza (2011: 22). **Syntype**: [Mexico. Oaxaca:] El Parián, Mex. So. Ry., *W. Trelease 4* [the number “23” crossed out and replaced

with “4”), 12 February 1905, MO, (MO barcode: MO-1256267; MO specimen number 3346867) [image accessible at: <http://www.tropicos.org/Image/26009!>].

Note: In JSTOR Global Plants (<http://plants.jstor.org/>) both specimens are incorrectly listed as syntypes of the name *A. kerchovei* (Smith & Figueiredo, 2014).

Derivation of specific epithet: from the Latin ‘convallis’, meaning ‘the valley’, for its occurrence in canyons.

***Agave dissimulans* Trelease** in *Contr. U.S. Nat. Herb.* **23**(1): 138. (1920). **Lectotype:** Mexico. Oaxaca: [Ignacio Mejía] Mexia (toward Tomellín), *Trelease 81*, 11 February 1905, MO, (MO barcode: MO-1128757; MO specimen number 3346870) [image accessible at: <http://www.tropicos.org/Image/26018!>]; designated by García-Mendoza (2011: 22). **Isolecotype:** Mexico. Oaxaca: Mexia, *Trelease 81*, 11 February 1905, MO, (MO barcode: MO-1128758; MO specimen number 3346869) [image accessible at: <http://www.tropicos.org/Image/26019!>]; designated by García-Mendoza (2011: 22). **Syntype:** Mexico. Mexia, *Trelease 82*, 11 February 1905, MO, (MO barcode: MO-1256273; MO specimen number 3346871) [image accessible at <http://www.tropicos.org/Image/26020?langid=0!>].

Note: In JSTOR Global Plants (<http://plants.jstor.org/>) both specimens of *Trelease 81*, as well as *Trelease 82*, are incorrectly listed as syntypes of the name *A. kerchovei* (Smith & Figueiredo, 2014).

Derivation of specific epithet: from the Latin ‘dissimulans’, meaning ‘ignoring’, probably because it had not been described earlier.

***Agave kerchovei* Lem.** in *Ill. hort.* 11: 64. (1864). **Neotype:** Jacobi’s sketch as traced by Berger in US. Designated by Gentry (1982: 151) as “Lectotype”; corrected to neotype by García-Mendoza (2011: 28).

Note: The drawing is not available online.

Derivation of specific epithet: for Gustave de Kerchove [d’Ousselghem] (1803–1881), a Belgian amateur plant grower from near Ghent. The statement that the species was named for Comte Oswald C.E.M.G. de Kerchove de Denterghem (1844–1906), Belgian horticulturalist, botanist, politician, and administrator, is not correct (Eggli & Newton, 2004: 126).

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