

Agave americana L. (subsp. *americana*) var. *expansa* (Jacobi) Gentry (Agavaceae) naturalized in South Africa

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Summary: The Mexican *Agave americana* L. subsp. *americana* var. *expansa* (Jacobi) Gentry, a distinctive variety of the widely cultivated, blue-leaved century plant, is here recorded as having become established in South Africa. A description and key that can be used to distinguish it from *A. americana* (subsp. *americana*) var. *americana*, which is more widely naturalized in South and southern Africa, is provided.

Zusammenfassung: Es wird mitgeteilt, dass die mexikanische *Agave americana* L. subsp. *americana* var. *expansa* (Jacobi) Gentry, eine gut zu unterscheidende Varietät der weit verbreitet kultivierten blaublättrigen *Agave*, sich in Südafrika etabliert hat. Der Beitrag umfasst eine Beschreibung sowie einen Schlüssel, um sie von der in Südafrika sowie im südlichen Afrika weiter verbreitet naturalisierten *A. americana* (subsp. *americana*) var. *americana* zu unterscheiden.

Introduction

Globally, regions with a Mediterranean climate are popular for human habitation. These regions, including parts of South Africa's southern, western and northern Cape coastal regions, typically have mild, wet winters and hot, dry summers, a perfect climate for growing a wide range of plants. Some of the most spectacular private (Les Cedres; Smith, 1997) and institutional (Smith & Van Wyk, 1999) gardens in the world have been created in Mediterranean regions, and along with their establishment came the desire to introduce and grow plants from other parts of the world. Not surprisingly, therefore, these and adjacent

mild-climate, regions have been subject to numerous exotic species escaping into the adjoining natural vegetation, and several of these have become problem plants (see for example Smith & Mössmer, 1996; Smith & Klopper, 2007; Smith & Figueiredo, 2007; Smith *et al.*, 2008).

Numerous species of *Agave* L., a predominantly Mexican and Central and southern North American genus (García-Mendoza, 1998), are common in domestic horticulture in southern Africa (Smith, 2003). To date, two of these taxa, *A. americana* L. subsp. *americana* var. *americana* and *A. sisalana* Perrine, have been recorded as naturalized in the Cape Floristic Region (Smith & Klopper, 2007). Recent field work revealed that a further, quite distinctive, variety of *Agave americana* subsp. *americana* var. *expansa*, has now joined the ranks of alien plants that have become established, naturalized aliens in the *fynbos* vegetation of the Cape Peninsula, and beyond, mostly in the Little Karoo (Figure 1).

Agave americana (subsp. *americana*) var. *expansa* (Jacobi) Gentry can be distinguished from *A. americana* (subsp. *americana*) var. *americana*, which is more widely naturalized in southern Africa, mainly on vegetative morphological grounds. The plants are somewhat less proliferous than the typical variety (Figure 2) and their leaves almost invariably remain erect until flowering maturity (Figure 3). In the case of *A. americana* var. *americana* plants are profusely proliferous and the leaves become reflexed and in time flop over to one side. Furthermore, the apical leaf spine is typically slightly longer in *A. americana* var. *americana* (30–50 mm) than it

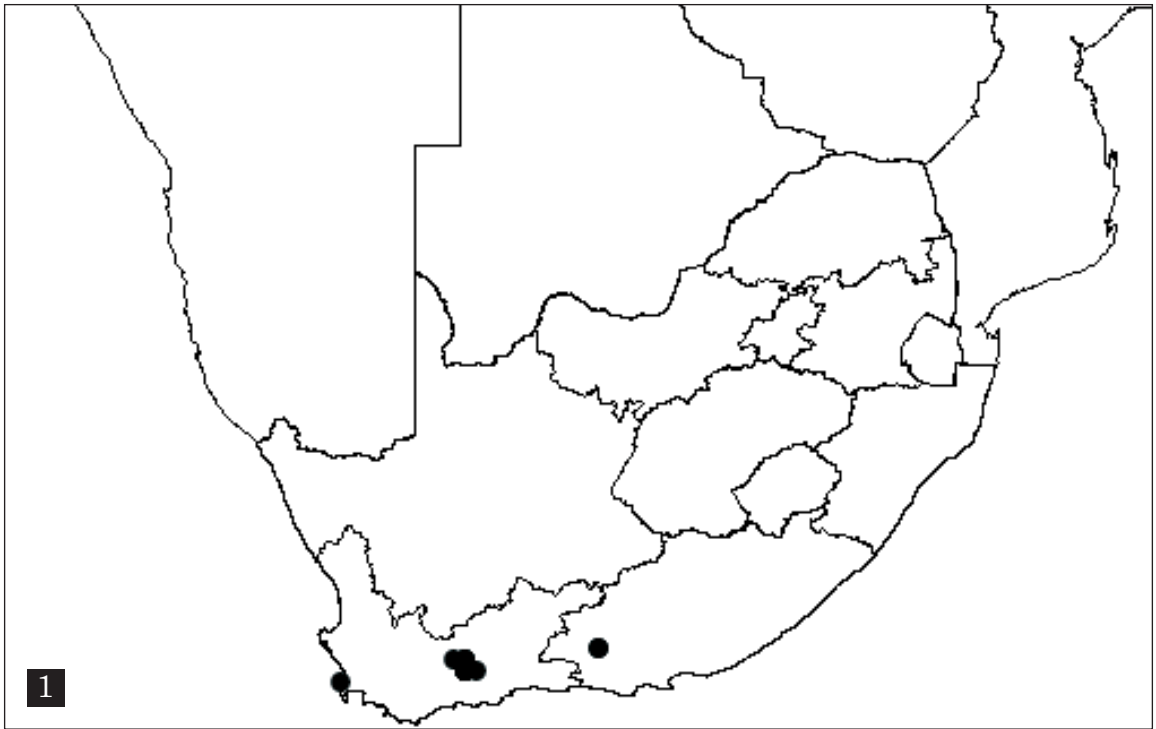


Figure 1. Distribution of *Agave americana* subsp. *americana* var. *expansa* in South Africa. **Figure 2.** Plants of *Agave americana* subsp. *americana* var. *expansa* are somewhat less proliferous than those of the typical variety, but nevertheless spread through suckers. Photo: Gideon F. Smith.

is in *A. americana* var. *expansa* (20–30 mm) (Reveal & Hodgson, 2009). The leaves of the var. *expansa* are also more deeply channelled than those of var. *americana*, and somewhat less succulent. The inflorescences of *A. americana* var. *expansa* are often narrower in diameter than those of the more robust typical variety (Figure 4), and the flowers are infused with a more greenish hue (Figure 5).

Agave americana var. *expansa* was an early introduction into Europe where it was named by Jacobi in 1868. Perhaps somewhat surprisingly therefore, the variety is today not recorded as part of the European garden Flora (Couper & Cullen, 1986), nor is it included in *Flora europaea* (Webb, 1980). However, it has become established in Australia (Foster, 1986). In its native New World it occurs from southern Arizona to western Mexico (Govaerts *et al.*, 2009). It has never been found in fruit and reproduces vegetatively only (Reveal & Hodgson, 2009). It is noteworthy that, rather confusingly, the epithet *expansa* is also used for a cultivar derived from this variety (Gentry, 1982). The cultivar is grown in mild regions of the United States of America, for instance, but is not naturalized there (Reveal & Hodgson, 2009). Like *A. americana* var. *americana*, the var. *expansa* was probably an early cultigen used by early Mexican cultures (see Gentry, 1982: 281; Reveal & Hodgson, 2009).

***Agave americana* L. subsp. *americana* var. *expansa* (Jacobi) Gentry, *The Agave family in Sonora*, Agriculture Handbook No. 399: 80–84 (1972); Gentry: 283 (1982); Forster: 74 (1986); Irish & Irish: 95 (2000); Thiede: 14 (2001); Reveal & Hodgson: 453 (2002); Vásquez-García *et al.*: 40 (2007); Reveal & Hodgson: 453 (2009).**

Agave expansa Jacobi in *Abhandlungen der Schlesischen Gesellschaft für Vaterländische Cultur. Abteilung für Naturwissenschaften und Medicin. 1868*: 151 (1868).

Type: Apparently no specimen preserved. “De una planta cultivada cerca de París, probablemente originaria de Jalisco. Aparentemente no haj ejemplar.” *fide* Espejo Serna &

López-Ferrari: 8 (1993). Gentry (1982: 283–284) stated that it was encountered “...by Jacobi as growing “at St. Germain en Laye bei Paris,” France.”

Agave abrupta Trel. in Standley, *Contr. U.S. Natl. Herb.* 23: 132 (1920).

Type: Jalisco, La Barca, cultivated in hedges, 1901, *W. Trelease* (MO) *fide* Espejo Serna & López-Ferrari: 8 (1993).

Massive, stemless or short-stemmed, monocarpic, rosulate, leaf succulents. Rosettes to 2 m tall at maturity. Proliferous through basal suckers. Leaves 1.0–1.5 m × 150–240 mm, uniformly light blue to distinctly cross-banded with lighter and darker blue, very rarely uniformly light green, sword-shaped, remaining erect up to flowering maturity, not becoming reflexed, deeply channelled adaxially, apically very sharp-tipped, terminal spine 20–30 mm long; leaf margins armed with numerous, straight or variously recurved, simple teeth. Flowering pole massive, to 9 m tall, up to 30-branched, tree-like, never bulbiferous. Flowers to 85 mm long, erect, yellow to greenish yellow. Fruit not seen.

Natural distribution range: Probably introduced to Europe from its natural distribution range, which stretches from the southwestern United States to Jalisco (Gentry, 1982).

Voucher: SOUTH AFRICA, Western Cape Province. 3418 (Vishoek): Halfway between Vishoek and Kalkbaai on the Cape Peninsula. (-AB), in sandy soils in fynbos vegetation, 34°07'50" S 18°26'21" E, 24 January 2010. *G.F. Smith & E. Figueiredo* 12 (PRE).

Icons: Gentry: Figure 25 (1972).

Flowering time: The species flowers in early- to mid-summer in South Africa.

Eponymy: The varietal epithet is based on the Latin word *expandere*, which means ‘to expand or spread out’. This likely alludes to the clump-forming habit of the plant.

Key to distinguish between the two varieties of *Agave americana* subsp. *americana* naturalised in South Africa

1. Leaves usually drooping to one side, adaxially not deeply channelled, thickly succulent; apical leaf spine 30–50 mm long; plants massive.....var. *americana*
- 1'. Leaves erect to stiffly spreading, adaxially deeply channelled, less succulent; apical leaf spine 20–30 mm long; plants medium-sized to largevar. *expansa*

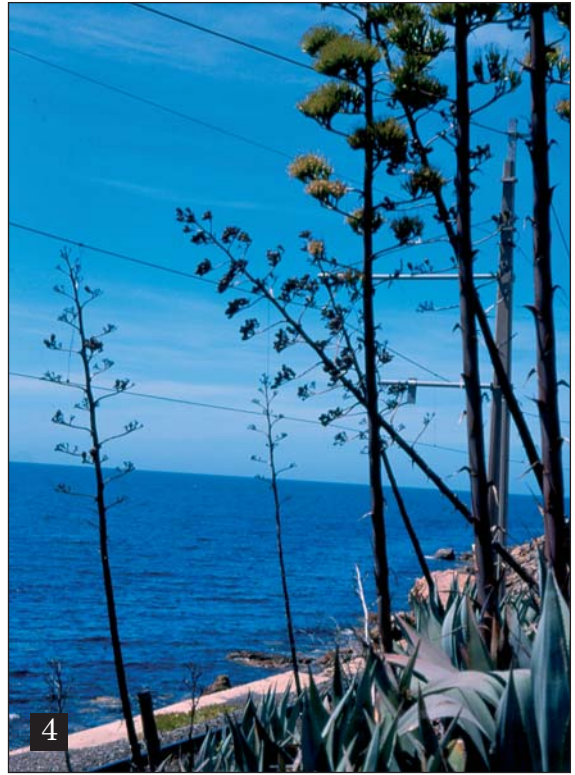


Figure 3. *Agave americana* subsp. *americana* var. *expansa* growing near Cape Town on the Cape Peninsula in South Africa's Western Cape Province. **Figure 4.** The inflorescences of *Agave americana* subsp. *americana* var. *expansa* are often narrower in diameter than those of the more robust typical variety. **Figure 5.** Close-up of the flowers of *Agave americana* subsp. *americana* var. *expansa* showing the greenish hue. Photos: Gideon F. Smith.

Common names: English: spreading century plant (Reveal & Hodgson, 2009); Afrikaans: *skraalgar- ingboom, skraalblougar- ingboom*.

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