

## ***Aloe arborescens* Mill. ‘Estelle Potgieter’ (Asphodelaceae subfam. Alooideae), a new cultivar in a variable species, with notes on aloes at the South African National Biodiversity Institute, Pretoria**

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**Summary:** *Aloe arborescens* Mill. ‘Estelle Potgieter’ (Asphodelaceae subfam. Alooideae), a new cultivar, is established in this variable species. Aloes at the South African National Biodiversity Institute, Pretoria, South Africa, are discussed.

**Zusammenfassung:** *Aloe arborescens* Mill. ‘Estelle Potgieter’ (Asphodelaceae subfam. Alooideae) wird als neue Sorte dieser variablen Art beschrieben. Die Aloen am South African National Biodiversity Institute, Pretoria, Südafrika, werden diskutiert.

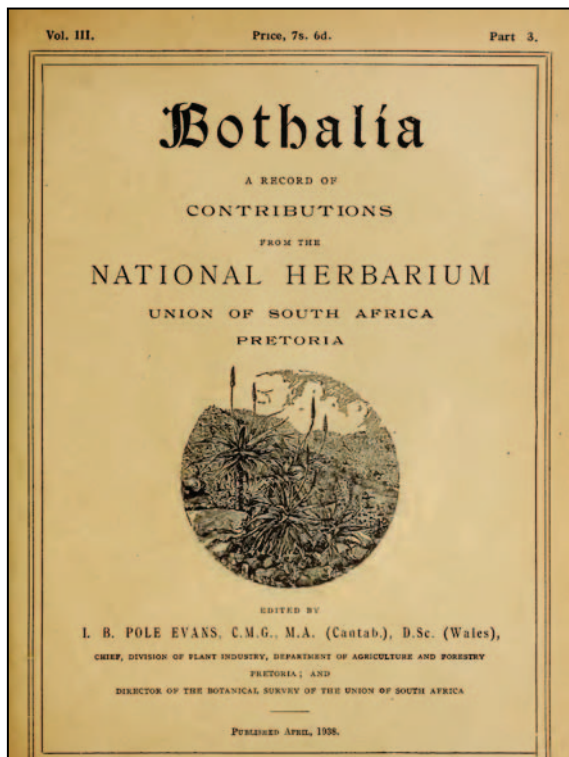
### **Introduction**

At present, the headquarters of the South African National Biodiversity Institute (SANBI) is based in the Pretoria National Botanical Garden (PNBG), Pretoria, South Africa. The PNBG was established at its current location in June 1946 (Smith et al., 1999), with the building that now houses the National Herbarium of South Africa (herbarium acronym: PRE) constructed and inaugurated on the site some twenty-seven years later, under the auspices of the Botanical Research Institute (BRI), one of the forerunners of SANBI.

In 1913, about ten years after the inception of what is at present known as the National Herbarium of South Africa, the then Division of Botany amalgamated with the Division of Mycology and Plant Pathology, with Dr Illtyd B. Pole Evans appointed as Head of a newly established Division of Botany and Plant Pathology. Pole Evans’s surname is sometimes hyphenated as ‘Pole-Evans’, for ex-

ample when he is cited as authority for a plant name he published (see the International Plant Name Index: [ipni.org](http://ipni.org)). Starting with Pole Evans, and continuing for the next century, most of the successive Directors of SANBI in Pretoria had more than a passing interest in the Asphodelaceae, especially in *Aloe* L. and *Kniphofia* Moench. It is unsurprising then that the cover of *Bothalia*, ‘a record of contributions from the National Herbarium, Union of South Africa, Pretoria’, was for many years (from volume 1 in 1921 up to and including volume 8 in 1962–1965) graced with an illustration of *Aloe arborescens* in situ (Figure 1). This illustration was produced by Stella Irene Gower (later Mrs Louw) (22 August 1894 to 29 May 1991) who was appointed as artist in the Division of Botany in 1920 and held this position up to her marriage in 1924 (Anonymous, c.1973: 6 [page not numbered]; Condy & Rourke, 2001: 195). She ultimately contributed nearly 100 plates to *The Flowering Plants of South Africa* series (Anonymous, c.1987), as well as numerous black-and-white illustrations to other publications. Condy & Rourke (2001: 195) also credit Gower as having designed the protea emblem, a rendition of an inflorescence of *Protea cynaroides* (L.) L., the King Protea, South Africa’s National Flower, on the 3d and 6d monetary coins of South Africa that were issued between 1923 and 1960 (see Engelbrecht, 1987: 104–105).

Aside from the interest of career scientists, some horticulturalists working at the PNBG, such



**Figure 1.** For over four decades the front cover of the journal *Bothalia* was adorned with a line drawing of *Aloe arborescens* in habitat, produced by Stella Irene Gower (later Mrs Louw).

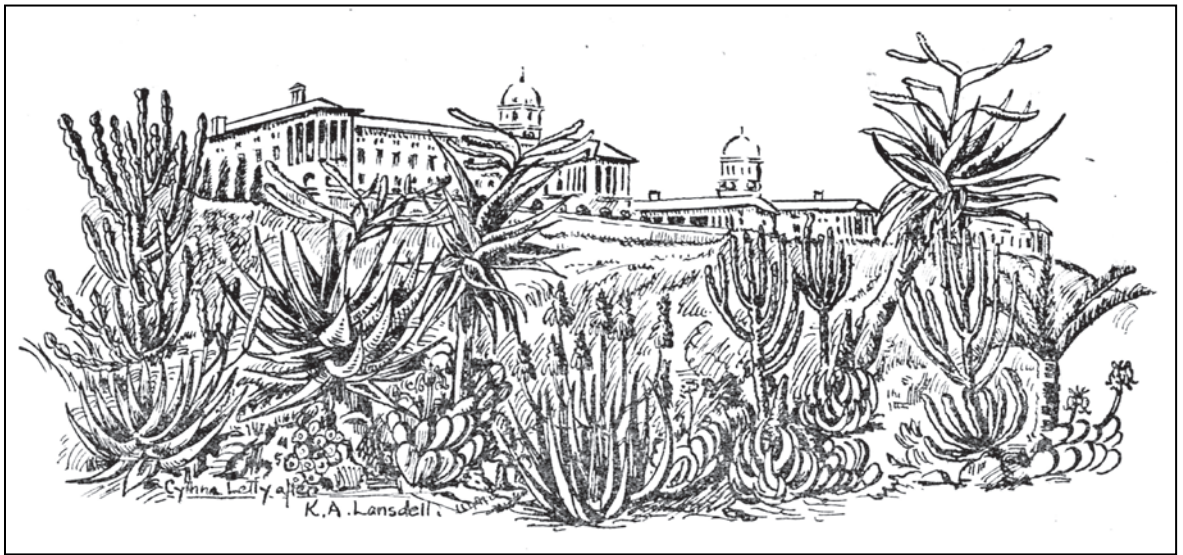
as David S. Hardy (1931–1998), and also herbarium-affiliated amateurs and trained botanists the likes of Gilbert W. Reynolds (1895–1967) and Barend H. Groenewald (1905–1976), had a strong and highly productive academic interest in the genus *Aloe* (Klopper et al., 2013a). In consequence, the PNBG, especially in its nursery area, but also some of the garden beds, has always sported a range of *Aloe* species in cultivation, for both research and display purposes. This material has subsequently been used even to support species recovery projects, such as that for *Aloestrela suzannae* (Decary) Molteno & Gideon F.Sm. (= *Aloe suzannae* Decary) of Madagascar, which was reintroduced to its homeland based on plants grown at the PNBG (Smith & Swartz, 1997, 1999; Smith & Molteno, 2019).

Amongst the material in cultivation at the PNBG is a particularly striking form of *Aloe arborescens* Mill., which has been grown both in and around the facility for several decades. This particular form is here described as a cultivar, *A. arborescens* ‘Estelle Potgieter’, to honour the contribution of an individual whose behind-the-scenes work promoted not just aloecology, but botany generally at the PNBG.

### Aloes at SANBI in Pretoria

For many years the National Herbarium of South Africa was based at Vrede Huis, situated below the Sir Herbert Baker-designed Union Buildings in Pretoria. The building that housed the Herbarium was surrounded by gardens that included a multitude of succulents. A black-and-white line drawing of these gardens was executed by Cythna Letty (1 January 1895 to 3 May 1985), after K. Lansdell, and used on the front cover of (*The Flowering Plants of (South) Africa (FPA)*) for sixty-eight years, from its inception in 1921 through to volume 50 in 1988–1989 (Figure 2). *FPA* is South Africa’s flagship journal dealing with and promoting botanical art (Arnold, 2001), along with the scientific and horticultural knowledge of the subjects featured; it is modelled on *Curtis’s Botanical Magazine*. The first issue in the *Memoirs of the Botanical Survey of South Africa* series (Schönland, 1919) also carried on its cover the illustration that was used on the front cover of the *FPA*. In the case of the drawing used on the cover of *Memoir* no. 1 the illustration is credited to K.A. Lansdell only. Kathleen Lansdell (27 March 1888 to 3 April 1967), became the first botanical artist based at the Institute in Pretoria. She was appointed in 1917 to work under I.B. Pole Evans and later E.P. Phillips, and held this position until her retirement in 1943, although she was seconded to numerous other stations during this time. Her art inspired the foundation of *FPA* in 1921 and she contributed over 100 pieces of artwork to this series, as well as countless illustrations to a myriad of other publications. The *FPA* drawing of Letty, after Lansdell, is virtually identical to the earlier drawing produced by Lansdell. Letty produced over 700 illustrations for *FPA* (Stead, 1968) and also wrote poetry that was often nature-inspired (Beeton, 1968). Letty prepared the impression of *Aloe aculeata* Pole-Evans that was used on the ten cent piece of South Africa’s second decimal coinage (Letty, 1966: 37–38; Engelbrecht, 1987; Smith & Glen, 1993).

A further prominent indication of the popularity of aloes at SANBI in Pretoria is provided by the historic G.W. Reynolds Gate (Figure 3). This former main entrance gate to the PNBG was created in the 1970s by artist Hans Brugger and consists of two large central panels that are flanked by a pair of identical pedestrian gates. The central panels are mirror images of each other and depict, from the hinged side: *Aloe ferox* Mill., three plants of *Aloiampelos tenuior* (Haw.) Klopper & Gideon F.Sm., *Aloe peglerae* Schönland, *Aloe aculeata* Pole-Evans, as well as a stylised, cliff-dwelling grass aloecoincidentally of those from Zimbabwe, and another stylised aloecoincidentally of those from Zimbabwe, and another stylised aloecoincidentally of those from Zimbabwe, and another stylised aloecoincidentally of those from Zimbabwe, likely representing *Aloe reynoldsii* Letty. The pedestrian gates to the left and right of the main panels have metal renditions of a single specimen of *Aloidendron barberae* (Dyer) Klopper & Gideon F.Sm.



**Figure 2.** For nearly seventy years, from 1921 to 1989, the cover of *(The) Flowering Plants of (South) Africa (FPA)* was adorned with a line drawing executed by Cythna Letty, after Kathleen A. Lansdell. Letty was a much revered resident botanical artist at the Division of Botany, Pretoria, from 1927 to 1938 and again from 1945 to 1968. The drawing depicts the Union Buildings in Pretoria in the background and plants cultivated in the garden around Vrede Huis, where the National Herbarium was housed at the time. The plants can be identified as follows, from the left: two large-growing species of *Euphorbia* L. with a candelabra-shaped branching architecture (perhaps *E. ingens* E.Mey. ex Boiss. in the back and *E. cooperi* N.E.Br. ex A.Berger in front of it) with *Aloe aculeata* Pole-Evans in front of the euphorbias; *A. marlothii* A.Berger with *E. clavarioides* Boiss. in the foreground below it; *A. marlothii* with *Cotyledon orbiculata* L. in the foreground below it; *A. wickensii* Pole-Evans in the centre with *C. orbiculata* on the right behind it; two large-growing *Euphorbia* species with a candelabra-shaped branching architecture (perhaps *E. ingens*) with *A. peglerae* Schönland at their base; *A. marlothii* with two different species of *Euphorbia* to its right; and a species of *Encephalartos*, perhaps *E. transvenosus* Stapf & Burt Davy, with *C. orbiculata* to its right.

with, below it, two smaller specimens of *Aloidendron pillansii* (L.Guthrie) Klopper & Gideon F.Sm. (see also Walker, 2010: 119, Figure 9).

The Aloes of the World project was also managed from the National Herbarium. This project aimed to compile all available data and images of the world's aloes and to make that information easily accessible to end-users (Smith et al., 2008b, 2008c; Klopper et al., 2010, 2013b). In November of 2007 the Aloes of the World Project Workshop was held at the PNBG, when the largest ever meeting of international experts on the genus *Aloe* was convened (see Smith et al., 2008c, Figure 1).

#### **A new cultivar in *Aloe arborescens* and its eponymy**

To date, at least nine cultivars have been described in *Aloe arborescens* from plants cultivated at the Kirstenbosch National Botanical Garden in Cape Town (Van Jaarsveld, 2002), amongst others. All these cultivars were named for a previous director of one of the institutions that were to become SANBI, or for a curator of Kirstenbosch. Other, equally deserving horticultural selections of *A. arborescens*, such as 'Andy's Red' and 'Andy's Yellow' (Figure 4), have also been named and are available in the trade (Smith & Figueiredo, 2015:

87 and 94, respectively; De Wet Plant Breeders, no date).

As a species, *Aloe arborescens* displays remarkable morphological variability across what is one of the largest distribution ranges of any southern African member of the genus (Smith et al., 2008a). It is popular in global horticulture and has also escaped and become established in other parts of the world remote from its natural distribution range (Smith & Figueiredo, 2009). In accord with an earlier proposition to recognise variation among entities of *A. arborescens* in horticulture at the level of cultivar rather than as formal taxonomic entities at infraspecific rank (Smith et al., 2012), we have the pleasure of naming this new cultivar after Ms Estelle Potgieter (born in Brakpan, Gauteng province, South Africa, 16 February 1955–) (Figure 5), former Senior Librarian of the Mary Gunn Library in the National Herbarium building in the PNBG (Killick, 1978; Potgieter, 1997; Fourie, no date). For 33 years, from December 1976 through to September 2009, Ms Potgieter successfully expanded the holdings of the Mary Gunn Library (MGL), and was particularly effective in developing the periodicals exchange programme, which enabled local access by botanists to a wide range



**Figure 3.** In years gone by, the historic, aloe-adorned G.W. Reynolds Gate, here viewed from the inside of the Garden, was the main entrance into the Pretoria National Botanical Garden. See text for the identification of the aloes rendered in metal. Large specimens of *Aloidendron barberae* donated by the public were planted at the gate to complement the motif. However, some of these specimens did not survive, as is often the case when large tree aloes are transplanted.



**Figure 4.** The profusely flowering *Aloe arborescens* 'Andy's Yellow' has uniformly bright yellow buds and open flowers.

of otherwise prohibitively expensive journals. She was also instrumental in ensuring that, on formation of the then National Botanical Institute in 1989, the MGL with its holdings transferred from being a satellite facility of the Agricultural Library at the Department of Agriculture to being a core facility of the new Institute. This decision by her contributed enormously to the growth and recognition of the Mary Gunn Library as a world leader in the assembling of African, and especially South African, botanical literature and related botanical art. Under her direction one of the most important botanical resources in Africa was developed, from 2004 onwards, to cover other subjects such as climate change, biodiversity, zoology, and invasive species.



**Figure 5.** Estelle Potgieter (1955– ), former Senior Librarian of the Mary Gunn Library of SANBI, Pretoria, is celebrated in *Aloe arborescens* 'Estelle Potgieter'. Photograph (dated 28 July 2006): Ms Elizma Fouche, SANBI.

A large to very large, robust and remarkably floriferous form of *Aloe arborescens* is cultivated in and around the PNBG (Figure 6). It grows rapidly and soon forms large clumps that consist of numerous, densely packed, robust rosettes (Figure 7). The distinctly light green leaves are sickle-shaped and the leaf margins adorned with ivory-coloured or concolorous, more or less evenly spaced teeth. The symmetrical inflorescences are conical (Figure 8) with the narrow, pencil-shaped flowers a luminescent, pink-infused, bright orange (Figure 9). This form is here named for Ms Potgieter.

It is likely that this material is of wild origin, but it is not known from where or by whom it was collected. This very large form of the species does exceedingly well in cultivation and is highly pest resistant. With its large size when fully grown, striking light green leaf colour, and the huge number of inflorescences produced per season, this form makes a highly desirable addition to spacious waterwise gardens.

***Aloe arborescens* Mill. 'Estelle Potgieter'** Gideon F.Sm., Klopper & N.R.Crouch, ***cult. nov.***  
**Nomenclatural standard:** SOUTH AFRICA.



**Figure 6.** A very large clump of *Aloe arborescens* 'Estelle Potgieter' growing at the intersection of Cussonia Avenue, Pretoria Street (to the east), and Stanza Bopape Street (to the west), on the boundary between Brummeria and Silverton suburbs, Pretoria. Photograph taken on 11 June 2020.



**Figure 7.** The slightly tilted rosettes of *Aloe arborescens* 'Estelle Potgieter' consist of bright, light green, sickle-shaped leaves. In the flowering season virtually every rosette bears one to multiple inflorescences.

GAUTENG PROVINCE.—2528 (Pretoria): ex hort. from material originally collected in 2013 from along the access road to the main entrance of the Pretoria National Botanical Garden, 2 Cussonia Avenue, Brummeria, Pretoria, (–CA), specimen prepared on 13 June 2020. *G.F. Smith 1109*, (PRU).

**Description:** Perennial, large to very large, herbaceous, shrubby, succulent, total height often reaching 3m, usually branched and rebranched. **Roots** terete, cylindrical. **Stems** erect to variously leaning, to 2.5m long,  $\pm$  30–40mm in diameter. **Leaves** 250–300(–450)mm long, 20–40mm broad at base, bright light green, concolorous, unspotted, numerous, crowded towards branch apices, persistent when dry, sickle-shaped, narrowly attenuate, basally sheathing, semi-erect, becoming decurved with age; *margins* with short, shark tooth-like teeth, straight or curved towards leaf tips, ivory-coloured or concolorous, 2–5mm long, gradually decreasing in size towards apex, *teeth*  $\pm$  evenly spaced. **Inflorescence** an unbranched raceme or 1-(2-)branched panicle, elongated-cone-shaped, 600–650mm long; each rosette producing up to 2 racemes or panicles. **Peduncle** basally plano-convex in cross-section, cylindrical above, 200–300mm long, 10–20mm broad at base, reddish brown, sparsely sterile bracteate; **sterile bracts** 15–20mm long, 10–15mm broad at base, creamy brown, with  $\pm$  20 orange-brown nerves, tapering to a blunt, harmless tip. **Racemes** densely flowered, the flowering portion 240–300mm long, 130–150mm in diameter at bottom; buds erect to suberect, lowest open flowers down-curved, becoming pendent. **Floral bracts** creamy brown, papery, amplexicaul around pedicel, apices attenuate, with 10–15 orange-brown nerves, 15–20mm long. **Pedicels** light green, 30–40mm long when



**Figure 8.** (left) The inflorescences of *Aloe arborescens* 'Estelle Potgieter' can reach a length of over 0.5m. **Figure 9.** (right) At anthesis the pencil-shaped flowers of *Aloe arborescens* 'Estelle Potgieter' are a luminescent, pink-infused, bright orange colour.

flowers open, remaining the same length in fruit. **Flowers** 40–45mm long, 8mm in diameter at ovary, luminescent, bright orange, actinomorphic, unscented, nectariferous, pencil-shaped, widest in the middle, slightly indented above ovary, very slightly narrowing towards mouth, open flowers pink-infused, tip extremity yellowish and green-tipped; *buds* same colour as open flowers, well exerted beyond bracts. **Flowering time** (June–) July(–August).

#### Acknowledgements

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