PLATE 2342 *Aloidendron barberae*

Aloidendron barberae Asphodelaceae: Alooideae

South Africa, Swaziland (and possibly Mozambique)

Aloidendron barberae *(Dyer) Klopper & Gideon F.Sm*. in Phytotaxa 76: 9 (2013); Van Jaarsveld & Judd: 36, t. 1 (2015); Smith et al.: 157 (2017). *Aloe barberae* Dyer: 568 (1874a); Dyer: 91 (1874b); Dyer: 720 (1874c); Smith et al.: 35 (1994); Van Wyk & Smith: 30 (1996); Glen & Hardy: 143 (2000); Carter: 98 (2001); Newton: 44 (2001a); Newton: 112 (2001b); Van Wyk & Smith: 34 (2003); Smith & Van Wyk: 73 (2008); Carter et al.: 695 (2011); Grace et al.: 18 (2011); Van Wyk & Smith: 38 (2014); Klopper: 577 (2015). *Aloe bainesii* Dyer: 568 (1874a); Baker: 178 (1880); Baker: t. 6848 (1885); Baker: 326 (1896); Schönland: 44 (1903); Berger: 319 (1908); Marloth: 91 (1915); Christian: 1, t. [1] (1933); Groenewald: 47 (1941); Reynolds: 498, t. 58 (1950); Jacobsen: 149 (1960); Reynolds: 384 (1966); Judd: 1, t. 1 (1967); Jeppe: 59 (1969); Bornman & Hardy: 281, t. 141 (1971); Jacobsen: 71 (1974); Jeppe: 5 (1974); Schedler: 102 (2014). *Aloe bainesii* var. *barberae* (Dyer) Baker: 326 (1896).

The genus *Aloidendron* (A.Berger) Klopper & Gideon F.Sm. was established in 2013 to accommodate *Aloe* sect. *Aloidendron* A.Berger and *A*. sect. *Dracoaloë* A.Berger (1905: 56), as part of a revised generic classification for *Aloe* L. *sensu lato*, based on results from molecular phylogenetic research (Grace et al. 2013). The name is derived from the Greek word *dendron* (a tree) and the generic name *Aloe*, hence indicating that these are tree aloes. As published, this genus comprised six species ranging from southern Namibia (*Aloidendron dichotomum* (Masson) Klopper & Gideon F.Sm., *A. pillansii* (L.Guthrie) Klopper & Gideon F.Sm. and *A. ramosissimum* (Pillans) Klopper & Gideon F.Sm.) in the west, to Mozambique (*A. barberae* and *A. tongaense* (Van Jaarsv.) Klopper & Gideon F.Sm.) in the east. There is then a large disjunction in the distribution of the genus northwards to Somalia (*A. eminens* (A.Berger) Klopper & Gideon F.Sm.). A year later the genus was expanded to include *A. sabaeum* (Schweinf.) Boatwr. & J.C.Manning from the Yemen and Saudi Arabia (Manning et al. 2014) from *Aloe* sect. *Sabaealoë* A.Berger (1905: 56), bringing the species total to seven tree aloes.

Members of *Aloidendron* are dichotomously branched (apart from *A. sabaeum* which is unique in the genus in having simple stems), large-shrubby (*A. ramosissimum*) to arborescent, sub-woody, succulent perennials, with bark smooth to longitudinally fissured. The leaves are rosulate, often narrowly canaliculate, lanceolate or ensiform, unspotted and with somewhat cartilaginous margins with small, but conspicuous teeth. Their inflorescence is a panicle with cylindrical racemes bearing cylindrical to cigar-shaped flowers, ranging from yellow through orange to red-brown (Carter et al. 2011; Grace et al. 2013). Tree aloes occur in both winter- and summer-rainfall areas in a variety of habitats ranging from humid subtropical conditions (*A. tongaense*) through to extremely arid environments (*A. pillansii* and *A. sabaeum*). Surprisingly, the only other tree aloe that has been illustrated in this series is *A. dichotomum* as *Aloe dichotoma* (Phillips 1938: t. 709).

PLATE 2342.—1, habit, much reduced; 2, inflorescence, × 1. Voucher specimen: *Condy s.n.* in National Herbarium, Pretoria (PRE). Artist: Gillian Condy.

Aloidendron barberae was first described simultaneously as both *Aloe barberae* Dyer and *Aloe bainesii* Dyer by William Turner Thiselton-Dyer (Dyer 1874a), who in the following year was appointed assistant director of the Royal Botanic Gardens, Kew. This was a seminal paper on the tree aloes of South Africa, dealing principally with the longer-known and more familiar western species, *Aloe dichotoma* Masson, now known as *Aloidendron dichotomum*.

Joseph Dalton Hooker, then director at Kew, for many years corresponded with John Thomas Baines, the intrepid explorer, artist and adventurer. Baines rose to fame following his employ by David Livingstone as artist and storekeeper on his celebrated Zambezi expedition (1857–1859). He subsequently joined James Chapman's expedition through what is now Namibia to the Victoria Falls (1861–1863) during which trip he became the first artist to paint one of the most bizarre and iconic plants of southern Africa, for a while known as *Tumboa bainesii*, and later as *Welwitschia bainesii* (Gunn & Codd 1981). For nomenclatural reasons, this fascinating gnetophyte is now correctly known as *Welwitschia mirabilis* subsp. *namibiana* Leuenb. (Rowley 1997). As the *International Code of Nomenclature for algae, fungi, and plants* required and as we shall relate, this *Welwitschia* was not the only spectacular plant painted by Baines for which he was commemorated in name, to later lose the honour to the shadow-realm of synonymy.

Baines wrote to Hooker in a letter dated 15 July 1873 (Dyer 1874a): 'I have the pleasure of sending you, by the kindness of my friend Mr. Jameson, a specimen and two sketches of an arborescent *Aloe*, from the slope of a rugged hill overlooking the sources of the Inada or Inandu rivulet, a tributary of the Tugela river, and perhaps nineteen or twenty miles north-east of Greytown. On Thursday, June 5, while proceeding to examine a hill near the Tugela reported to be auriferous, I first noticed these arborescent Aloes, and remarked their similarity to the great Tree *Aloe* of Damaraland … On July 2, as we were returning from the Inyemba hill, where we had been prospecting with just sufficient success to ascertain that gold was actually there, we again crossed the rugged slope, and this being the only place on which I had observed the *Aloe* in question I let the men go on, and halted to make a sketch … I should think the tree sketched was 20 feet high, and the spread of its crown about 15 feet. The trunk seemed about 2 feet thick, and at 5 or 6 feet from the ground divided into half a dozen branches, and these again were subdivided into many more. The bark was white and smooth, as in the Tree *Aloe* of Damaraland, but the leaves were long and slender, with small hooked thorns along the edges, and curved downwards. The flower, I believe, was scarlet and orange, but I cannot say certainly … In these points it differs from the Damara species, the leaves of which curl upward, while the flowers are of a bright yellow … Since my arrival in Durban, I am told that Aloes similar, or nearly so, have been found in the Noodsberg.' On stopping to sketch the tree on 2 July, Baines instructed one of his men to climb an aloe to collect the branch that accompanied the letter to Kew, and to look for flowering material, although none could then be found. Baines knew what flowers to expect, recalling to Hooker that on 21 June, '… I saw a flower of a bright scarlet or orange colour on one of the trees'. Despite Kew receiving only sterile material, Dyer (1874a) shortly thereafter commemorated Baines in his new species *Aloe bainesii* Dyer, the article accompanied by illustrations based on two of Baines's sketches, one of which is reproduced here (Figure 2). The smaller of the figures is a sketch of a rather tatty branch revealing snapped leaves, the condition of which was apologetically explained by Baines: 'I am

sorry the specimen branch is much broken but a [porter] already loaded had to carry it through a bushy country and 90 miles more of carriage by Wagon and Bus has not improved it.' On his mediocre illustration he ruefully remarked. 'The sketch also had to be made on the march when we were all pretty well tired and coloured when halted at Mr Hill's the nearest farm house …'. The larger figure was published in *The Gardener's Chronicle* as a woodcut (Figure 2), produced from a drawing by an unknown artist, but based on a watercolour painting (reproduced in Van Jaarsveld & Judd 2015: Figure 16). This image depicts the type locality near Greytown, with the aforementioned expedition member climbing a tree to secure material. This represents a fascinating translation of the original Baines watercolour (220 × 350 mm) sent to Hooker, in which Baines – as was his wont – included himself within the very scene. A black and white reproduction of the original painting is also reproduced by Wallis (1976:

FIGURE 1.—*Aloe barberae* (now *Aloidendron barberae*), from the plant growing at Kew (from Dyer 1874a: Fig. 117).

FIGURE 2.—*Aloe bainesii* (now *Aloidendron barberae*) growing on rocky hills near Greytown in the Thukela River Basin, KwaZulu-Natal. Woodcut based on a watercolour by J.T. Baines 2 July 1873 (from Dyer 1874a: Fig. 120).

122), showing Baines the artist at work, yet the woodcut commissioned for Dyer (1874a) (Figure 2) depicts Baines engaged quite differently, as a disinterested bystander holding a bedroll!

The Greytown aloe was not the first tree aloe to have been painted by Thomas Baines, for in May 1866 he painted *Aloidendron dichotomum* whilst in Namibia. This is thought to be the first illustration of that species in its natural setting and was published in *Nature and Art* under the title 'The Great Tree Aloe of Damara land' (Palmer & Pitman 1972; see black and white reproduction on p. 28). Based on comments in Baines' letter to Hooker in July 1873, the original painting should be at Kew.

Material of the second tree aloe species that Dyer (1874a) simultaneously published was sourced from the Eastern Cape of South Africa from Mrs Frederick William Barber (née Mary Elizabeth Bowker, 1818–4 September 1899), based then near Grahamstown (Gunn & Codd 1981). Barber, like Baines, was a keen naturalist and artist and is credited with the discovery of a number of South African succulents (Rowley 1997). She had similarly sent a cutting of a tree aloe to Kew a little prior to Baines doing so, and this was grown on and illustrated (Dyer 1874a: 566). In her reflections on the genus *Aloe* (Barber 1870), Mrs Barber recounted 'the gigantic Aloe of the Transkeian territory (*A. zeyheri*) which attains the height of sixty feet …'. The reference made by Barber (1870) to 'A. zeyheri' is somewhat perplexing – Dyer (1874a) also mentioned that he was 'unable to ascertain who is responsible for attaching the name Aloe zeyheri to the Transkeian species' – as the name *Aloe zeyheri* Salm-Dyck was published earlier (Salm-Reifferscheid-Dyck 1863) for a species of *Gasteria*; the name *Aloe zeyheri* Salm-Dyck is widely treated as belonging in the synonymy of *G. bicolor* Haw. The way Barber (1870) cited the name makes it hard to believe that she formally proposed a name for the tree aloe. It rather seems that she was unaware of the pre-existence of the name *Aloe zeyheri*, or misapplied the name. Baker (1880) was, however, prompted to mention the designation 'Aloe zeyheri, Hort.' in synonymy under his treatment of *A. bainesii* Dyer.

One expects that news of this incredible-sounding tree aloe species prompted Kew to spur Barber to forward material post haste. Shortly after she finally delivered a branch, a letter was sent by the Reverend Leopold Richard Baur to Professor Peter MacOwan of Gill College, Somerset East, and forwarded to Kew, saying: 'But the most curious thing is the Aloe tree, growing in the forests close to Shawbury [Tsitsa River], amongst the other forest trees, up to the height of 40 feet. Mr. Davis and I measured the trunk of one, 3 feet above the ground, and found it 16 feet in circumference. It is a most wonderful sight. This Aloe tree was for long considered a sort of botanical Münchausiade, and I heard that many botanists would not believe in it; but I think now it is known in Europe … I enclose you a slight pen-and-ink sketch of the Aloe tree, that you may form some idea about it. Now it has not been in flower, but the seed-pods were still on.' Baur also mentioned in his letter that the locals 'call it Nomawen (if I [Baur] were to give you the proper sound in German I should write it Nomawühn)'. This second eastern tree aloe was named *Aloe barberae* in honour of Mrs Barber. Dyer (1874a) stated that '*Aloe barberae* differs from *A. bainesii* in the leaves being apparently longer, not glaucous, and not so completely crowded into a terminal tuft. Fig. 117 [here reproduced as Figure 1] is drawn from a plant in the succulent-house at Kew'. It was thus that in the spring of 1874 two new species of tree aloe were described

in the same paper (Dyer 1874a). Notably, Kew had heard as early as August 1866 of a giant tree aloe along the east coast of South Africa, this prior even to Mrs Barber's communications. This was through Mark McKen, then director of the Durban Botanic Gardens, who described one 30 feet tall, growing on the banks of the Mdloti River. Sir James Hulett also sent in a report of plants from Verulam (McCracken & McCracken 1990).

However, only seven months later in December of the same year, Dyer (1874b) wrote, 'The appearance of the branch of the Natal plant was so different from that of the Kaffrarian, that I ventured to characterize it as a new species under the name of *Aloe Bainesii*, on the ground that the leaves were longer, not glaucous, and not so completely crowded into a terminal tuft. The fact of the leaves being crowded into a terminal rosette, or spaced down the stem, is found to afford a character of even sectional value among the species. I was therefore rather astonished to find that when the Natal plant had fairly established itself, its rosette of leaves began to grow out. It is apparently only in old plants that the leaves are crowded into rosettes. I do not now doubt that the Kew plant of the Natal *Aloe* will eventually assume quite the same appearance as plants of the Kaffrarian one, with which I am now disposed to believe it to be identical. The name *A. Bainesii* must therefore be merged as a synonym in *A. Barberae*.' Only two days later Dyer (1874c) repeated his preference for the name *A. barberae*, as opposed to *A. bainesii*, but again he stated no reason for his choice. In expressing his preference, Dyer was to determine which epithet could be applied and our subject would become known as *A. barberae* in consequence, with the name *A. bainesii* relegated to synonymy. This then represented the second example of an iconic southern African plant named initially to honour J.T. Baines, but then later lost to his memory. However, Dyer's preference (Dyer 1874b, 1874c) was overlooked in most subsequent *Aloe* literature, most surprisingly by Baker (1885, 1896), the *Aloe* specialist at Kew, but also by many others who followed in Baker's misguiding footsteps, including Berger (1908), Marloth (1915), Reynolds (1950), Jeppe (1969) and Bornman & Hardy (1971).

It was not until Smith et al. (1994) rectified this nomenclatural error that the name of the eastern tree aloe again became *Aloe barberae* in line with its author's stated preference and decision. Despite this, the name *Aloe bainesii* is still occasionally found in the literature, for example in Schedler (2014). More recently, *Aloe barberae* was transferred to *Aloidendron* with the combination *Aloidendron barberae*, as outlined above (Grace et al. 2013).

Undoubtedly the most significant feature of *Aloidendron barberae* is its height and the girth of its trunk: at a maximum of 18 m tall and a trunk diameter of up to 3 m, this is the world's tallest and largest aloe with little close competition (Figure 3). It is accordingly remarkable that such a gigantic aloe was only described as late as 1874, especially given the extensive botanising in 'Natal' at that time (McCracken & McCracken 1990). Historical accounts such as those of Barber and Baur above emphasise the unexpected scale of size of *A. barberae* relative to other aloes. In similar vein, when Marianne North, the globe-trotting artist-adventurer travelled to then Victorian Natal, she too was awed on encountering a flowering specimen at Verulam in May of 1883, writing in correspondence reported in *The European Mail*, 'I had a great treat; a botanical butcher took me in his gig to see one of the biggest aloes in the world, perhaps, and I have painted it so well that tears came into his eyes when he looked at it. There are three trees standing together on a high bank over the [Mdloti] River, and they make a fine subject. They are 40 feet high, with hundreds of heads

FIGURE 3.—*Aloidendron barberae* in cultivation in Hayfields, Pietermaritzburg. Photograph: N.R. Crouch.

FIGURE 4.—Typically reaching a height of up to 8 m at full maturity, *Aloidendron tongaense* trees, here photographed on the outskirts of Maputo, Mozambique, usually do not grow as tall as those of *A. barberae*. Photograph: E. Figueiredo.

on the ends of their branches, which keep forking into two, like the dome [doum] palm. The trunk, a yard above the ground, is quite two feet through. When in bloom, every head has a bunch of "red-hot poker flowers" coming out of it, and the mass of scarlet can be seen 30 miles off, Mr. Hill says' (Saunders 1979). North's excellent painting of the Verulam plants hangs in the Marianne North Gallery at Kew as painting number 383 (Anon. 1914) and was reproduced in Anon. (1980: 215).

The phylogenetic tree of Daru et al. (2013) included five of the seven species of *Aloidendron*: *A. sabaeum* and *A. tongaense* were omitted from this study. The study indicated *A. barberae* to be sister to the Somalian species *A. eminens*, whilst the relationship among *A. dichotomum*, *A. pillansii* and *A. ramosissimum* was unresolved. Interestingly, Van Jaarsveld (2010), when describing *A. tongaense*, placed *A. barberae* next to *A. eminens* in his dichotomous key, with *A. tongaense* being slightly further removed. Although *A. sabaeum* was not included in the molecular phylogeny of Manning et al. (2014), they included this species in *Aloidendron* based on its historical association with other tree aloes (Reynolds 1966), due mainly to morphological similarities and an erroneous height (as pointed out by Wood 1983) of 9 m given in the original description that was repeated by subsequent authors such as Reynolds (1966). More molecular data, including for *A. sabaeum* and *A. tongaense*, are needed to allow for the resolution of the phylogenetic relationships within *Aloidendron*.

On the basis of vegetative morphological features, *Aloidendron barberae* appears to be closest to *A. tongaense*, a long-known species referenced by Van Wyk & Smith (2001: 93). The most significant difference is that *A. tongaense* is a smaller tree, only 4–8 m tall (Figure 4), compared to *A. barberae* that can grow up to 18 m in height. Van Jaarsveld (2010) records other more significant differences for the reproductive characters in which there is greater divergence between these two putative sister species: *A. barberae* has a panicle of 400–600 mm long (compared to 350 mm long for *A. tongaense*); the perianth for *A. barberae* is 33–37 mm long, rose-pink and green-tipped (Figure 5) (compared to 47–50 mm long and yellowish orange for *A. tongaense*) (Figure 6); stamens are exserted to ca. 15 mm at anthesis in *A. barberae* (cf. 3–5 mm in *A. tongaense*). Notably, both species exhibit some variation in the length of exsertion of their stamens at anthesis. *Aloidendron barberae* also flowers slightly later in the year (June, in the southern hemisphere) than *A. tongaense* (April–May).

Aloidendron barberae is recorded from South Africa, Swaziland and the southern parts of Mozambique (Reynolds 1950; Reynolds 1966; Glen & Hardy 2000; Carter 2001; Van Jaarsveld & Judd 2015) (Figure 7). Within South Africa it occurs from East London in the Eastern Cape Province through to southern Mpumalanga Province, in forests and on the hillsides above major rivers such as the Mkomazi, Mngeni and Tugela. Specifically for Mozambique, Carter (2001) records it from the Districts of Cheringoma, Zavala and Namaacha 'on rocky slopes of wooded valleys 20–600 m'. Glen & Hardy (2000) report that 'The tallest specimens occur in the Lebombo foothills near the KwaZulu-Natal–Mozambique–Swaziland border; those with the greatest diameter occur near Grahamstown'.

Apart from Van Jaarsveld & Judd (2015), these references all predate the publication of the name *Aloe tongaensis* (Van Jaarsveld 2010), which was considered by these authors as a coastal form of *A. barberae*. Van Jaarsveld & Judd (2015) report that *A. barberae* is present in 'the southern portion of Mozambique', but provide no supporting evidence. We could not trace any herbarium specimens from Mozambique that represent *A. barberae* as the available specimens held at COI, K, LISC and PRE (including those cited by Carter 2001 and others seen by her for the *Flora zambesiaca*

FIGURE 5.—Close-up of the rose-pink, green-tipped flowers of *Aloidendron barberae*. In the case of this species the stamens are usually well-exserted to 15 mm at anthesis. Photograph: G.F. Smith.

FIGURE 6.—The flowers of *Aloidendron tongaense* are yellowish orange and, in contrast to *A. barberae*, the stamens are only shortly exserted, for up to 5 mm. Photograph: G.F. Smith.

treatment) are all identified as *A. tongaense*. Besides herbarium specimens, sight records by one of us (EF) (Figure 4) vouch for the occurrence of *A. tongaense* in southern Mozambique. The latest publication on the trees and shrubs of Mozambique (Burrows et al. 2018) also treats only *A. tongaense*. It seems as though *A. barberae* is not actually present in Mozambique, but further fieldwork would be useful to confirm this. We suggest initially exploring the southern Lebombos of Mozambique to the immediate southeast of Abercorn (Swaziland); large specimens of *A. barberae* have been observed by one of us (NC) (Figure 8) near Border Cave, 23 km southwest of Abercorn.

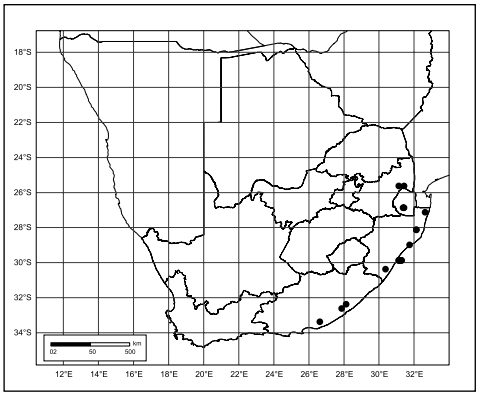

FIGURE 7.—Known geographical distribution range of *Aloidendron barberae* in southern Africa.

There is little information available on the pollination syndrome of *Aloidendron barberae*, apart from the fact that it is ornithophilous. Main pollinators are thought to include short billed weaver birds and white-eyes (Van Jaarsveld & Judd 2015), while several species of sunbird have also been observed to visit flowering plants.

Reynolds (1950) records the isiZulu common name as *inKalane enkubu* [variously spelled *inkalane unkulu* or *inkalane-enkulu*; cf. Grace et al. 2011: 19] meaning 'the big one', which is highly appropriate. Amongst several other common names catalogued, Grace et al. (2011: 19) also listed the Afrikaans names *boomaalwyn* (= tree aloe) and *mikaalwyn* (= forked aloe) (Jeppe 1969).

As recently as the early 1990s *Aloidendron barberae* was comparatively uncommon in cultivation in domestic and large-scale, corporate gardens in South Africa. However, that changed as waterwise gardening became more firmly established during the past 20 years. Today, *A. barberae* is a common sight in gardens both large and small, in open beds, as a specimen plant, or in large, or even small, containers. Of all the *Aloidendron* species, it is the easiest to cultivate and does well in a diverse range of climatic zones, excluding very cold areas where subzero temperatures are regularly recorded. It is an essentially summer-rainfall species, but also grows very well in the winter-rainfall regions of South Africa, for example in the Kirstenbosch National Botanical Garden in Cape Town (Figure 9). While Bornman & Hardy (1971) note that *A. barberae* is a very slow grower that will attain maximum height in 40 to 50 years, plants will nonetheless grow into impressive specimens in a far shorter period of time.

Propagation is through stem cuttings or truncheons – such is their ease of rooting

FIGURE 8.—Trees growing on rhyolitic soils near Border Cave on the South Africa–Swaziland border, southeastern Lebombo Mountains, South Africa. Photograph: N.R. Crouch.

FIGURE 9.—A magnificent specimen of *Aloidendron barberae* growing on the Matthew's Rockery at Kirstenbosch, illustrating the architectural nature of its branching pattern. Photograph: C.C. Walker.

FIGURE 10.—The inflorescences of *Aloidendron barberae* are particularly prone to infestations by aloe cancer mites. Photograph: G.F. Smith.

that production using seed is rare. Cuttings can be taken at any time of year, left to dry for a few days, and then placed in a coarse, sandy soil mixture; roots will soon develop. In production and wholesale nurseries, the terminal sections of branches are sometimes removed to break apical dominance and stimulate the formation of small, rosulate shoots that can easily be excised with a sharp knife. However, it is considerably more difficult to relocate mature trees. Such plants weigh several tons and moving them presents extensive logistical challenges, the solutions to which may involve cranes and flatbed trucks. Once the root systems of such trees have been severely damaged, plants often die an inexorably slow death as they are starved of water and nutrients. However, if such mature trees have been successfully established in enormous, industrial-scale planting bags, trees can be more easily transported and will flourish once well-rooted in a new spot.

Plants are reasonably pest-resistant, but leaves can be prone to infestations of white leaf-scale. These leaf sap-sucking insects are, however, easy to control if the infestation has not spread much; they can be simply washed off the leaves with a strong jet of water. Severe infestations may require treatment with a systemic insecticide. More difficult to control are aloe cancer mites that preferentially infect developing inflorescences (Figure 10) rather than the rosettes (see also Thackray 2017: 10). If possible to reach, inflorescences so infected should ideally be removed using secateurs that must afterwards be sterilised.

Description.—Arborescent plant, up to 20 m high. *Stem* 10–18 m high, trunk 1–3 m diameter at ground level, narrowing upwards, copiously dichotomously branched and rebranched from about middle, erect, without persistent dried leaves. *Leaves* densely rosulate, recurved, dull green, without spots, ensiform, deeply channelled, 600–900 × 70–90 mm at base; sheath with greenish white marginal border; margin narrow, white, cartilaginous, with firm, horny, brownish tipped, dull white, deltoid teeth, 2–3 mm long, 10–25 mm apart. *Inflorescences* 0.4–0.6 m high, erect, dichotomously 3-branched from below middle, branches erect. *Peduncle* up to 100 mm long, ± 30 mm wide, flattened, biconvex at base, without sterile bracts below branches. *Racemes* cylindric, slightly acuminate, 200–300 × 80–100 mm, erect, dense; buds erect to spreading, flowers spreading to nodding when open. *Floral bracts* linear-acuminate, 8–10 mm long, ± 1 mm wide, hair-like and coiled backwards, scarious. *Pedicels* 7–10 mm long, rose to rose-pink. *Flowers*: perianth rose to rose-pink, greenish tipped, 33–37 mm long, ± 9 mm across ovary, not narrowed above ovary, widening to ± 12–13 mm towards middle, narrowing somewhat to ± 10 mm towards slightly upturned mouth, cylindric-ventricose; outer segments free almost to base, tips spreading; stamens with rather thick, much flattened filaments, lemon-coloured, exserted portion turning brownish orange, exserted to 15 mm; ovary 8 mm long, 6 mm diameter, pale olive-green; style pale lemon-coloured, almost white, exserted 15–20 mm. *Fruit* a capsule, oblong-ovoid, brown, ± 40 × 17 mm. *Seed* pale brown, 6–8 × 20–24 mm, flat, with very broad, pale brown wings. *Chromosome number*: $2n = 14$ (Resende 1937). Plate 2342.

ACKNOWLEDGEMENTS

We are indebted to and, hence, gratefully thank the following people who helped prepare material for this publication. Tina Wardhaugh, formerly of The Open University, Milton Keynes, England, provided Photoshop© work on Figures 1 and 2. Dr Hester Steyn, National Herbarium (PRE), South African National Biodiversity Institute, produced the distribution map. Joaquim Santos and Filipe Covelo, COI Herbarium, University of Coimbra, scanned a specimen for us. Susana Matos from the Instituto de Investigação Científica Tropical (LISC), Lisbon, Portugal, also scanned specimens.

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