

Understanding *Erica* ×*willmorei*, a nineteenth century English garden hybrid

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ABSTRACT

The application of the binomial *Erica willmorei* Knowles & Westc. is discussed and the name is typified by an illustration. It is demonstrated that the name was altered to *E. willmoreana* by Bentham, misapplied and misspelled soon after publication and that various plants known by this binomial and its numerous variants do not represent the original hybrid.

INTRODUCTION

A brief history of hybrid Cape heaths

In Britain during the late eighteenth and early nineteenth centuries there was immense interest, at least among wealthy garden owners, in forming collections of, and in cultivating, species of *Erica* from southern Africa, the so-called Cape heaths. Collectors, especially Francis Masson (1741–1805) (Bradlow 1994) and James Niven (1776–1827) (Nelson & Rourke 1993), were engaged to go to the Cape of Good Hope and to search for new species, to gather seeds and to send these to their sponsors and patrons in Europe. These collectors were remarkably successful, and so were the gardeners and nurserymen who received the wild-collected seeds. Seedlings of many hitherto unknown species were raised and substantial numbers were grown on to flowering stage. These plants provided the subjects for a series of splendid illustrated books, of which probably the most notable was Henry Charles Andrews's *Coloured engraving of heaths*, a part-work issued between 1794 and about 1830 (Cleevely & Oliver 2002).

Cape heaths were among the most fashionable plants of this period. Wealthy enthusiasts indulged their passion for them to the utmost, even building special glasshouses to accommodate and protect the plants, and amassing collections of hundreds of different species and varieties. In such circumstances, the nurserymen, on whom the overwhelming majority of the Cape heath fanciers depended for novelties, had to strive to ensure that new species were continually available. While wild-collected seed was the principal means of achieving this, the cost of obtaining the seeds of more and more new species was undoubtedly enormous in both financial terms and in terms of the seed collectors' time. There came a point

when employing a collector and basing him at the Cape of Good Hope became entirely uneconomical.

By the early 1800s it is certain that at least two hundred different Cape heaths were in cultivation in Europe—the list of heathers (including European species) offered in 1802 by Lee and Kennedy of Hammersmith included 228 species and varieties. Less than a decade later Smith (1809) remarked that while it was 'difficult to guess at the number of the real species of *Erica* ... our gardeners reckon about 300, many of which are merely varieties ...'. Even if the plants did not represent that number of distinct species, they still constituted a remarkably diverse assembly of plants, and there can be little doubt that the nurserymen who grew Cape heaths made special efforts to propagate the best ones. Many could be increased only by cuttings, but the fact that the shrubs bloomed did mean that seeds could potentially be harvested without the necessity of sending collectors to the Cape.

Many Cape *Erica* species have exacting pollination requirements—pollinating agents in the wild range from nectar-feeding birds to insects and the wind (Rebello *et al.* 1985). Specialized animal pollinators are inevitably absent when plants are cultivated in regions far-distant from their natural habitats, and thus, in cultivation, pollination may never be effected and viable seed will not form. On the other hand, considering that in the early nineteenth century in Europe, an individual Cape heath collection could contain more than a hundred species, and that these would have been contained in a single glasshouse, the potential even for accidental cross-fertilization by 'alien' pollinators was enormous. However, the absence of 'natural' pollinators can be overcome by hand-pollination, and it is evident that European gardeners were soon adept at pollinating—and cross-pollinating—the Cape heaths in their care.

No precise record has been traced recording the first instance of garden-harvested seed, nor of the first seedlings from such seed, but there is indirect evidence that around 1790 at least one English nurseryman had succeeded in obtaining and germinating home-produced seed from Cape heaths. Moreover, he had also artificially cross-pollinated two species and produced a hybrid. The nurseryman was William Rollisson (his surname is frequently misspelled Rollinson), and he used two Cape heaths named *Erica grandiflora*[†] and *E. vestita* as the

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[†] We have deliberately omitted the authorities for many of the binomials used herein for two reasons: firstly, because it is impossible often to establish the true identity of the plants concerned, and secondly, because some of the names were first published in nurserymen's lists and the correct attribution of the specific or varietal epithets has yet to be established.

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FIGURE 1.—The illustration $\times 1$, by R. Mills, published by Knowles & Westcott (1838), here designated the iconotype of *Erica willmorei*. By courtesy of Ian A. Nex, Archivist and Librarian, The Birmingham Botanic Gardens, and reproduced by permission of The Director, The Birmingham Botanic Gardens.

parents of the hybrid which was released under the names *E. vestita* var. *fulgida* or *E. fulgida* (Rollisson 1843). Rollisson kept this a secret, and it is clear from subsequent comments by his contemporaries, for example Henry Andrews, that Rollisson passed off his hybrid plants as new species raised from seeds gathered in the wild at the Cape of Good Hope.

That others also carried out artificial pollination and cross-pollination is highly likely, yet the first explicit reference to it dates from 1817 when the Dean of Manchester, the Rev. William Herbert, who is best known for his work with Amaryllidaceae, casually remarked that he had raised some hybrids of Cape heaths: 'and the new heathers I have already obtained, are most distinct and remarkable, the individuals of each new species [*sic*] being perfectly uniform' (Herbert 1818).

Various comments published by Andrews (1794 to ± 1830) reveal probable hybrids. Of *Erica rupestris* var. *rubra* he wrote: 'This *Erica* was raised from British seed gathered from the *E. rupestris*, in the Autumn of 1807, by Mr. Knight, nurseryman in the King's Road, Chelsea, and is the only one, out of a number sown, that vegetated.' Using the rather obtuse phrase 'seminal variety', Andrews (1794 to ± 1830) signalled some more: *E. coventrya* was 'one of those fine seminal varieties raised from Cape seed at the Hammersmith Nursery'; *E. refulgens* was 'considered as a seminal variety of the *E. versicolor*'; *E. stellifera* 'supposed to have been raised from seed of *E. ventricosa*, or *praegnans* ... is also another seminal variety'.

The original *Erica ×willmorei*

Erica willmorei was one of the plants featured in *Floral Cabinet and Magazine of Exotic Botany*, published in Birmingham, a short-lived periodical edited by George Beauchamp Knowles (± 1800–1860), who was Professor of Botany at the Birmingham School of Medicine, and Frederic Westcott (d. 1861). Their aim was admirable, to provide 'accurate, and at the same time, highly finished representations of such plants as are remarkable for their beauty, their rarity, or their peculiarity of structure' (see Desmond 1977). The periodical lasted just three years, and among the plant portraits was one of a new hybrid heather which Knowles & Westcott (1838) named '*Erica willmorei*, Mr Willmore's *Erica*': 'This hybrid variety of *Erica* is in the collection of John Willmore, Esq. of Oldford, and was raised by that gentleman's gardener, Mr. John Williams, whose skill and perseverance have been that means of introducing an immense number of beautiful hybrids, particularly *Calceolarias*, many of which are infinitely more beautiful than any of the original species'.

The coloured plate (Figure 1) was accompanied by a Latin description and an English translation, so the binomial *E. ×willmorei* Knowles & Westc. is validly published, and while no contemporary herbarium specimens matching the descriptions and illustration have yet been traced, the name can be typified by the published plate.

E. ×willmorei Knowles & Westc., *Floral Cabinet and Magazine of Exotic Botany* 2: 115, t. 73 (1838).

Iconotype: *Floral Cabinet and Magazine of Exotic Botany* 2: t. 73 (1838) selected here.

E. ×wilmoreana [*sic*] Benth. in DC.: 661 (1839).

'Leaves in threes, linear, channelled, bracteas close to the calyx; sepals ovate-lanceolate, acute; flowers axillary; corolla tubular-ventricose, semi-pellucid; anthers included; stigma somewhat exerted. Flowers rather transparent, in shape somewhat intermediate between tubular and ventricose, of a bright but rather pale red, the mouth 4-parted, divisions rounded, of a beautiful green with a distinct white margin.' Figures 1; 4A.

Knowles & Westcott (1838) did not provide any information about the parentage of *E. ×willmorei*, except to comment that it was 'interesting as affording a proof of the possibility of obtaining hybrid varieties between Heaths with tubular flowers, and those with globose flowers; or, to use the language of gardeners, between the pill and the tube, a fact which we believe has been very generally denied'.

We suggest that *E. ×willmorei* was a hybrid derived perhaps from *E. blenna* Salisb., a Cape heath that was certainly in cultivation during the early nineteenth century principally under the synonym *E. vernix* Andrews, and another undetermined species with a long, tubular corolla. John Willmore, after whom this hybrid was named, lived at Oldford, a suburb of Birmingham where he had a fine garden with a 'rich collection' of exotic plants.

Erica wilmoreana and other orthographic variants

It is necessary at this point to note that Bentham (1839), citing Knowles & Westcott (1838) as the authority, altered the name to *E. wilmoreana*, not only misspelling it—a difficulty that recurs far too frequently when this name is employed—but also, unnecessarily, amending the termination. Thus *E. wilmoreana* (and all variant spelling of it) is a synonym of *E. ×willmorei* (and all its variants) and is not available for use for any plant other than the one illustrated by Knowles & Westcott (1838). Concerning these orthographic variants, it is apposite to note Dauthenay's (1900) remarks on the name: 'Nous avons désigné l'espèce de Bruyère qui fait le sujet de cet article sous le nom d'*Erica Willmorei*. On l'appelle aussi *E. Wilmoreana*, mais quelques personnes, évidemment mal renseignées, en ont fait l'*Erica Vilmoriniana*. Ces deux mots ont évidemment une certaine ressemblance dans leur consonnance. Pour éviter cette confusion, il suffirait, dans ce cas particulier, de respecter la loi de priorité'.

The orthographic variants and typographic errors, recorded (to September 2002) in The Heather Society's database of heather names for *E. ×willmorei*, are as follows (only the earliest records are noted, arranged alphabetically):

E. villmoreana: *Garten Magazin* 51: 203 (1898).

E. villmoriniana: *Flora capensis* 4,1: 315 (1905).

E. vilmoreana: *Journal of the Linnean Society* 24: 180 (1887).



FIGURE 2.—This specimen from Joseph Dickinson's herbarium (LIV) is labelled '*Erica willmorei* hybrid 1837'. It is not the same plant as that illustrated by Knowles & Westcott (1838). It is exactly 104 mm long from base to tip. By courtesy Dr L. Wolstenholme, and reproduced by permission of The Board and Trustee of the National Museums & Galleries on Merseyside, Liverpool.

E. vilmoriniana: *Revue Horticole* 1891: 235 (1891).

E. willmoreana: DC., *Prodromus* 7: 661 (1839).

E. willmoreana: *The Gardeners' Chronicle* 22 October: 711 (1842).

E. willmoriana: *Revue Horticole* 1891: 235 (1891).

E. willmorea: *Deutsches Magazin für Garten* 36: 69 (1883).

E. willmorei: Catalogue, James Veitch & Sons, 70 (1873, 1874).

E. willmoreii: *Erica* stock list, *Ericaflora*, Monbulk, Victoria, Australia, not dated [\pm 2000].

E. willmoriana: *The Gardeners' Chronicle* 27 August: 569 (1842).

Other *Erica* "*willmorei*" and *Erica* "*willmoreana*"

To complicate matters, the first author recently became aware of the existence in the herbarium of Liverpool Museum (LIV) of a specimen labelled, in the handwriting of Joseph Dickinson, '*Erica Willmorei* Hybrid 1837' (Figure 2). This particular specimen was most probably taken from a plant growing in Liverpool Botanic Garden—Dickinson was Secretary of the Liverpool Botanic Garden Trust, and the specimen derives from his herbarium of cultivated plants (J. Edmondson pers. comm. 2002). Beyond doubt, the specimen does *not* represent the plant illustrated by Knowles & Westcott (which will be referred to henceforth as *K&W73* [i.e. Knowles & Westcott, *Floral Cabinet and Magazine of Exotic Botany* 2: 115, t. 73 (1838)]).

The Dickinson specimen represents an *Erica* with hirsute flower buds (not glabrous as in *K&W73*), \pm 15 mm long, club-shaped with distinctly swollen tips (not elongate-ovoid, swollen towards the base, as in *K&W73*).

The leaves, \pm 5 mm long, are ciliate (not glabrous as in *K&W73*). The specimen has not been examined, but a xerox print, enlarged twice, on which these details can be very clearly seen, was studied by us.

The first and obvious conclusion is that by 1837 Wilson, John Willmore's gardener, had succeeded in producing no fewer than two hybrids, probably of entirely different parentage, and that these had been distributed to other gardeners either under the name *Erica* "*willmorei*" or, more probably, without a name in which case the recipients subsequently labelled these for their own convenience as *Erica* "*willmorei*" (this is not an uncommon occurrence, even today, in gardens and nurseries).

While Knowles & Westcott (1838) chose, for whatever reason, to illustrate a seedling with elongate-ovoid flowers and glabrous foliage, which perhaps soon became extinct in cultivation, it seems that the plant represented by the specimen in Joseph Dickinson's herbarium was a seedling (probably from a group of seedlings) that was destined to continue to flourish in various gardens. That it was successfully propagated and distributed cannot be doubted—there are several different pieces of evidence indicating this.

In 1842 there was sufficient doubt about the exact identity of at least one plant labelled *Erica* "*willmorei*" / "*willmoreana*" for Regel (1842) to list '*Erica willmoreana hortulanis* Dresden' and comment as follows: '*E. Willmoreana* der Dresdener Garten ist eine selbst als Bastard nur schwierig von *E. Linnaeoides* zu unterscheidende Pflanze und einzig durch noch buschigeren Wuchs und in der Witte etwas angeschwollene Blumenrohre verschieden.'

Dickinson's specimen exhibits superficial resemblance to an illustration (Figure 3) labelled '*Willmore's* heath (*Erica willmoreana*)' published by Step (1897). The flower buds in the illustration are similar in shape to those of Dickinson's specimen, and while they are not depicted as being hirsute, there is again ample evidence that plants labelled *Erica* "*willmoreana*" were rather variable (see Figure 4).

The earliest description that has been traced of *Erica* "*willmoreana*" which is not directly derived from Knowles & Westcott (1838) was published by Paquet (1844): '*Belle plante d'un aspect blanchâtre, à feuilles velues, quaternées; fleurs en tube, bilabiées, roses à la partie inférieure, blanches au sommet.*' This albeit brief characterization matches later descriptions and also Step's illustration (1897) (Figure 3), although the leaves depicted therein are not hairy ('à feuilles velues') as described by Paquet (1844). However, Nicholson (1885) noted that the linear leaves of *Erica* "*willmoreana*" were 'covered in short white hairs, as also are the branches.' Carrière (1892), describing *Erica* "*willmoreana*" and three of its cultivars, noted that in *Erica* "*willmoreana glauca*": '*La villosité sur la corolle est beaucoup plus prononcée sur cette plante que sur toutes les autres de ce même groupe, chez la plupart desquelles la corolle est glabre, tandis que chez cette variété glauca la corolle est parfois presque hispide, ce qui suffirait pour la différencier.*' Otherwise, most de-



FIGURE 3.—'Wilmore's heath (*Erica wilmoreana*)' from Step (1897: t. 164). Main shoot, $\times 0.68$. Note the shape of the flowers, with the swollen tips, and compare with those on the specimen in Figure 2. Reproduced by courtesy of the Lindley Library, Royal Horticultural Society, London.

scriptions of this heath are perfunctory, concentrating on flower colour.

Erica "wilmoreana" was listed in English nurserymen's catalogues in the 1870s and 1880s—for example, James Veitch & Sons (1873–1874); William Rollisson &

Sons (1877); B.S. Williams (1881)—but what Cape heath they were actually growing and selling is impossible to determine. Illustrations of so-called *Erica "willmorei"* appeared in *The Garden* (1889) (see Figure 5), *Revue Horticole* (1892, 1900) and, as already noted, in Step's *Favourite flowers for gardens and greenhouse* (189: 3: t. 164) (see Figure 3). In *The Gardeners' Chronicle* on 15 February 1896, Hudson (1896) described and illustrated *Erica "wilmoreana"*: 'The present is a most fitting season for drawing attention to one of the finest of all the early spring-flowering Heaths. It is one of the earliest hybrids raised in this country, being brought into notice about sixty years ago. Of its parentage I have no record, but as regards the value of the offspring there can be no question, whether for the greenhouse or conservatory. Under good cultivation it is a long-lived variety, being a most vigorous grower ... The colour of the flowers is deep pink, tipped white, and they last in good condition several weeks.' The accompanying illustration (Figure 5) showed a floriferous plant, nothing whatever like that illustrated by Knowles & Westcott (1838) [the right-hand specimen was shown in the plate published seven years earlier in *The Garden* (1889)].

CONCLUSION

This paper touches on an almost intractable subject, the correct application of the numerous binomials given to cultivated plants of Cape heaths by European, but especially English, nurserymen, gardeners and horticultural authors during the first half of the nineteenth century when erica-mania was in its most efflorescent phase. These names are recorded in a database compiled by The Heather Society, acting as ICRA (International Cultivar Registration Authority) for *Erica*, which will form the source for the second volume of the *International register of heather names* [the first volume (Nelson & Small 2000) listed only the names of hardy cultivars and European species]. In many, if not most cases, the names must remain designated as *incertae sedis*.

The International Code of Botanical Nomenclature establishes rules for the naming of plants including primary hybrids of garden origin. Even though its parentage may not be recorded, the application of any hybrid binomial is precisely determined by reference to protologue



FIGURE 4.—Details from the illustrations: A, published by Knowles & Westcott (1838: see Figure 1), $\times 2.2$; B, Step (1897: see Figure 3), $\times 2.7$; and C, of the specimen in LIV (Figure 2), $\times 2.7$. The flowers in A are red with green lobes prominently margined with white; note the emergent anthers. The flowers of B are red with white lobes; the anthers are included.

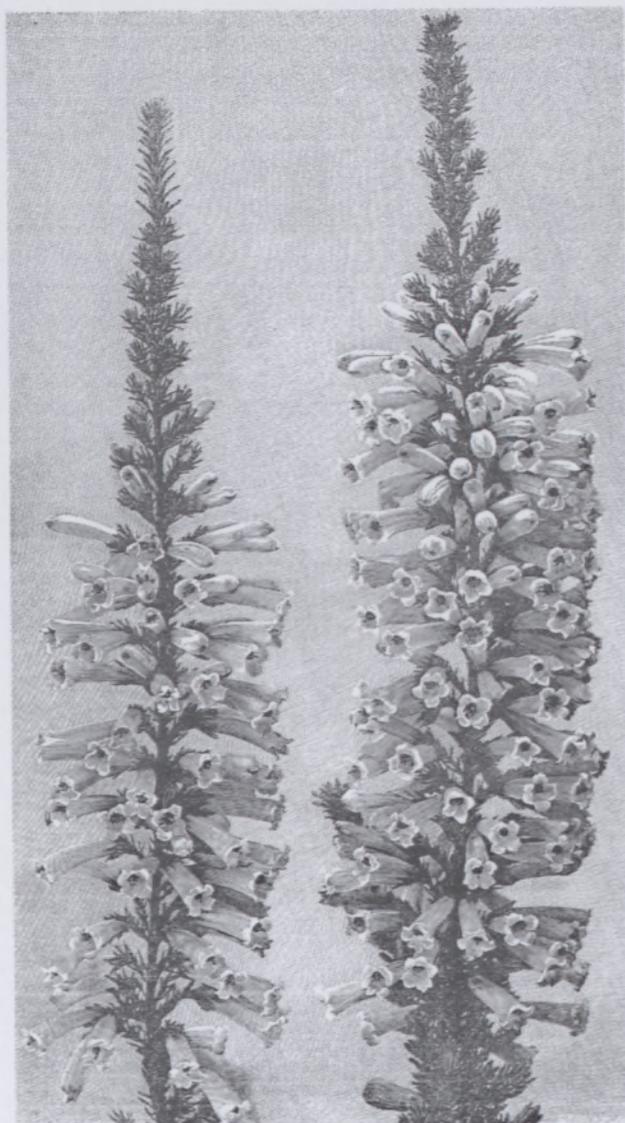


FIGURE 5.—‘*Erica willmoreana* ×’. One of several illustrations evidently derived from a photograph; first published in *The Garden* on 2 February 1889 (only the right-hand shoot was shown), this version appeared in *The Gardeners’ Chronicle* on 15 February 1896, × 0.56.

(the original published description) and the associated materials which may include herbarium specimens and illustrations. In this case no herbarium material has been traced but an excellent illustration which accompanied the protologue, and now designated as the iconotype, serves to establish the exact application of the binomial *Erica* ×*willmorei*. The fact that an herbarium specimen bearing the name ‘*Erica Willmorei*’ and dated 1837 is extant is not relevant, because it indubitably is an entirely different plant and is not connected in any way to the protologue. It is clear that this binomial was misapplied soon after its publication in 1838, and it was also subject to misspelling.

It remains to be established what the correct identities, and thus the correct names, are of cultivated and natural-

ized plants presently called *Erica willmorei* (or *E. willmoreana*, etc.). These include several cultivars, as well as plants reported as naturalized in several parts of Australia. Until specimens can be obtained and studied, the identity of these plants cannot be resolved.

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Notes on African plants

VARIOUS AUTHORS

EUPHORBIACEAE

EXCOECARIA MADAGASCARIENSIS; A FIRST RECORD FOR THE FLORA OF SOUTHERN AFRICA REGION

While collecting specimens for the compilation of the *Tree atlas of Swaziland*, an unknown plant was collected by P. Loffler & L. Loffler in the Lubombo Mts near the Mozambique border. A literature search led to the specimen's tentative identity as *Excoecaria madagascariensis* (Baill.) Müll.Arg (1866). Since the Swaziland locality was so far distant from its nearest locality in Chirinda Forest, Zimbabwe, the site was re-visited in November 2002. Despite intensive searching of the area, only a single specimen of *Excoecaria* was found, although not the same as the original plant, which was not re-located. However, its identity was undisputed, the new glossy red leaves which gives it the Zimbabwean common name of 'red-ears' being conspicuous. The plant was in both flower and fruit (Figure 1A, B).

Described from Madagascar, *E. madagascariensis* also occurs in Somalia (Thulin 1993), the coastal forests of Kenya and isolated inland forests in Tanzania (Radcliffe-Smith 1987). A disjunct locality is represented by its occurrence as a fairly common understorey species in Chirinda Forest in southeastern Zimbabwe. The new locality extends its distribution by almost 700 km and represents a further considerable disjunction for the species, as well as a new record for the *Flora of southern Africa* region.

The habitat in which the *Excoecaria* occurs in the Lubombo Mountains, is in dry, evergreen forest situated on the floor of a valley near the Mtibhlali River at an altitude of 240 m a.s.l. The canopy is dominated by *Atalaya alata* (Sapindaceae), *Balanites maughamii* (Balanitaceae), *Chionanthus foveolatus* subsp. *foveolatus* (Oleaceae), *Ficus polita*, *F. petersii* (Moraceae), *Homalium dentatum* (Flacourtiaceae), *Margaritaria discoidea* subsp. *fagifolia*, *Spirostachys africana* (Euphorbiaceae), *Strychnos usambarensis*, *S. gerrardii* (Strychnaceae) and *Wrightia natalensis* (Apocynaceae). Understorey small trees and shrubs include *Diospyros natalensis* subsp. *nummularia* (Ebenaceae), *Erythroxylum emarginatum* (Erythroxylaceae), *Hyperacanthus amoenus* (Rubiaceae), *Salacia leptoclada* (Celastraceae), *Teclea gerrardii* (Rutaceae), *Tinnea barba-*

ta (Lamiaceae) and *Uvaria lucida* (Annonaceae). A herb layer is almost absent.

The immediate area in which the *E. madagascariensis* grows is severely threatened by the uncontrolled spread of alien invader plants, particularly *Melia azederach* and *Chromolaena odorata*, both of which form pure stands along the nearby flood-damaged river. Despite being in relatively undisturbed climax forest, the entire area around the single *Excoecaria* plant was dotted with small *Melia* seedlings. Further down the river the riverine vegetation and adjacent forest is being cleared for cultivation, a process which may well reach the *Excoecaria* site. In addition, certain trees (notably *Wrightia natalensis*) are being felled either for medicinal plant material or construction purposes. In view of the apparent extreme rarity of this plant, *Excoecaria madagascariensis* must be regarded as critically threatened in Swaziland.

***Excoecaria madagascariensis* (Baill.) Müll.Arg.** in DC., *Prodromus systematis naturalis regni vegetabilis* 15,2: 1219 (1866); Radcl.-Sm.: 383, t. 72 (1987); Thulin: 306, t. 176 E–G (1993); Radcl.-Sm.: 316 (1996); M. Coates Palgrave: 518 (2002). *Stillingia madagascariensis* Baill.: 522 (1858). *Spirostachys madagascariensis* (Baill.) Prain: 1010 (1913), non Pax (1890); Brenan: 226 (1949). Type: Madagascar, Nosy Bé (Nossi Be), *Perville* 475 (P, holo., G, K).

Excoecaria sylvestris S.Moore in Rendle et al.: 204 (1911). Syntypes: Zimbabwe, Chipinge Dist., Chirinda Forest, 31 Jan. 1906, *Swynnerton* 72 (BM, K, SRGH) & Oct 1908, *Swynnerton* 72a (BM).

SWAZILAND.—2632 (Bela Vista) Lubombo Mts, Siteki Dist., Mtibhlali/Mtibalati River, 26°33'13"S, 32°06'22"E, 240 m, 22 Nov. 2002, *Burrows & Loffler* 7893 (Buffelskloof Herb., PRE, SDNH).

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FIGURE 1.—*Excoecaria madagascariensis*, *Burrows & Loffler* 7893: A, fruiting branch; B, inflorescence.