

Notes on African plants

HYACINTHACEAE

A NEW COMBINATION IN *DAUBENYA*

The circumscription of the genus *Daubenia* has recently undergone substantial modification as a result of phylogenetic analysis of plastid DNA sequence data (Goldblatt & Manning 2000; Van der Merwe *et al.* in prep.). The genus now includes the previously monotypic genera *Amphisiphon* and *Androsiphon*, as well as the taxa previously recognized in the genus *Neobakeria*. These various genera were distinguished from one another primarily on the basis of floral differences that are now understood to be related to different pollination strategies. Despite the exaggerated effect that these floral specializations have on the appearance of the plants, the species accord perfectly in vegetative morphology. The genus is characterized by the two prostrate or spreading leaves, glabrous and rather glossy above with impressed longitudinal striations along the main veins, with sheaths that split vertically on drying to form a neck of papery strips. The subcorymbose or racemose inflorescence develops small or medium-sized bracts subtending white to yellow or red flowers with a narrow perianth tube. In a few species the upper bracts are larger than the lower and form a \pm conspicuous sterile coma at the tip of the inflorescence.

Among the taxa recently transferred to *Daubenia* (Goldblatt & Manning 2000) was the species known until then as *Massonia angustifolia* L.f. This species was described by the younger Linnaeus in 1782, based on the collections and notes of Thunberg. No specimen was designated as the holotype and although the description is too brief to be diagnostic in any way, his account of the species which appeared in *Hortus kewensis* (Aiton 1789) a few years later, is accompanied by a fine engraving (Figure 1). Thunberg's own description of the species appeared after Linnaeus' under the name *Massonia lanceolata* Thunb. The latter name was lectotypified by

Jessop (1976), based on *Thunberg s.n.* (UPS-THUNB7990) and the same collection was later also designated as the lectotype of *Massonia angustifolia* L.f. by U. & D. Müller-Doblies (1997).

As understood in recent revisions of the group (Jessop 1976; Müller-Doblies 1997), *Massonia angustifolia* was readily distinguished from other species of *Massonia* by its relatively smaller bracts, cucullate tepals and orange filaments (Figure 2). These small bracts are characteristic of the group of species previously segregated as *Polyxena* subgenus *Astemma* (Baker 1896) and later as the genus *Neobakeria* (Schlechter 1924; Phillips 1951). In contrast, all species of *Massonia s. str.* have uniformly white or pinkish flowers that are subtended by large, leafy bracts and the infructescences are invariably subglobose on account of the highly condensed, corymbose inflorescence typical of the genus. In addition, the tepals in true species of *Massonia* display a highly characteristic orientation not found in other genera in the family. Initially reflexed from the base, they then curve outwards more or less abruptly, forming a sigmoid fold. Even a cursory look at the engraving of *M. angustifolia* published in *Hortus kewensis* reveals that the plant depicted has the large bracts characteristic of true *Massonia* species plus a clear indication of a sigmoid curvature in the tepals. It is clear, therefore, that this illustration does not coincide with the concept of *Massonia angustifolia* as understood by recent authors (Jessop 1976; Müller-Doblies & Müller-Doblies 1997; Goldblatt & Manning 2000).

Among the specimens in the Thunberg herbarium are only two sheets labelled *M. lanceolata*, one of them the lectotype of both *M. lanceolata* and *M. angustifolia*. This sheet (UPS-THUNB7990) bears two complete flowering



FIGURE 1.—*Massonia angustifolia* L.f. from *Hortus kewensis* (Aiton 1789).

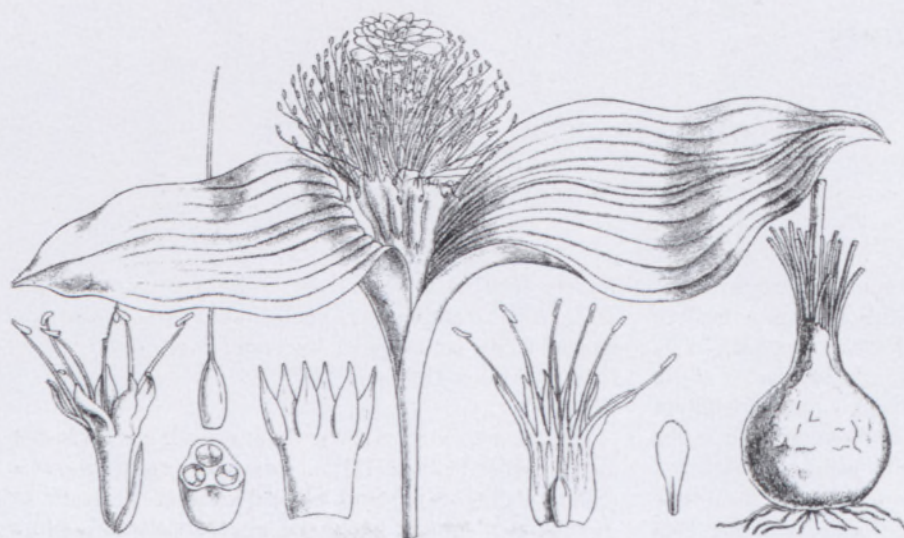


FIGURE 2.—*Daubenya marginata* (Willd. ex Kunth) J.C. Manning from *Hooker's Icones Plantarum* (1888) (as *Polyxena haemanthoides* Baker).

specimens plus three separate infructescences lacking both leaves and bulbs. The other sheet (UPS-THUNB7989) bears three flowering plants only. The flowering plants on both sheets match the illustration of *M. angustifolia* perfectly, but the fruiting stems on the lectotype are clearly not from the same species as they are rather more racemose with small floral bracts. It is quite clear that both Linnaeus and Thunberg were referring to the leafing and flowering material in their concept. The fruiting stems must therefore be excluded from the lectotype material. The type collection of *M. angustifolia* was made by Thunberg along the Roggeveld Escarpment in November 1774. All species of *Massonia* and *Daubenya* are winter-growing and winter-flowering, and at that time of the year the plants would have been in fruit. Thunberg was accompanied on this journey by the Scottish plant collector Masson, who had been sent out to South Africa to collect plants for the Royal Botanic Gardens at Kew. It was Masson's collections, received at Kew in 1775 and later flowered there, that formed the basis for the engraving of *M. angustifolia* that appeared in *Hortus kewensis* in 1789, and subsequently for a later

illustration in *Curtis's Botanical Magazine* (Ker Gawler 1804). It is almost certain, therefore, that the fruiting bulbs collected by the men in November were similarly flowered in cultivation to provide the flowering material for the Thunberg herbarium, probably in the garden that they established in Cape Town for growing their collections. One can only surmise that Thunberg unwittingly combined flowering plants of the one species with previously collected fruiting specimens of a second species.

This raises the question of the true identity of *Massonia angustifolia*. There is no doubt that the species is actually a smooth-leaved form of *M. echinata* L.f. This species is common along the Roggeveld Escarpment and is extremely variable in leaf vestiture, even within populations. It is characterized in the genus by its narrowly tubular flowers with relatively short stamens and tepals with a sigmoid fold (Figure 3). The sole anomaly in this identification is the extremely long perianth tube depicted in the engraving in *Hortus kewensis* (Figure 1). This long tube is not, however, matched by the Thunberg herbarium material and must represent either an abnor-

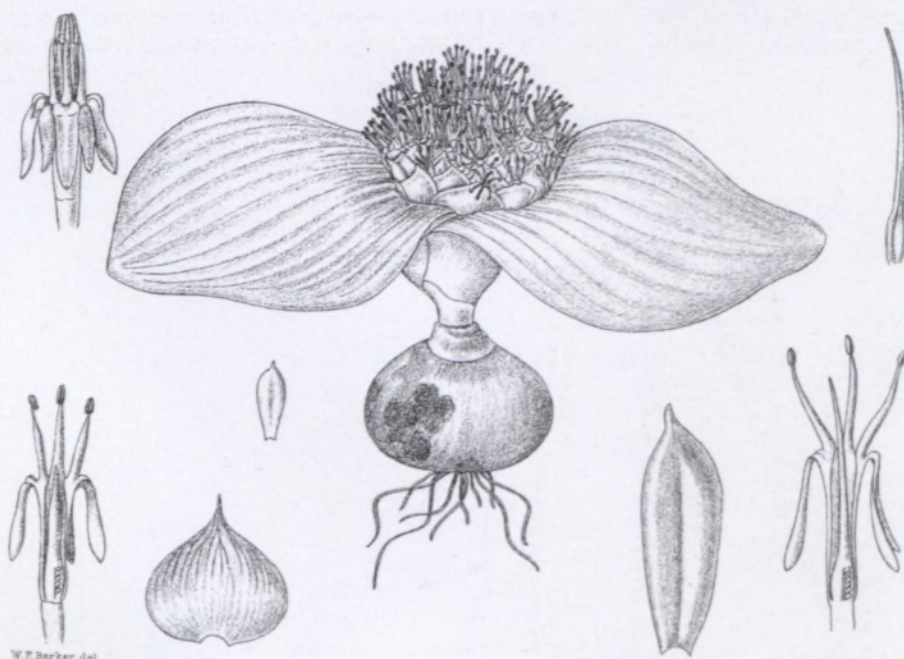


FIGURE 3.—*Massonia echinata* L.f. from *The Flowering Plants of South Africa* 11: t. 429 (as *M. bolusiae* W.F. Barker).

mality resulting from etiolation of the cultivated plants grown under low light intensity or, more probably, a misrepresentation by the artist who incorrectly identified the junction between flower and pedicel. *M. angustifolia* and *M. echinata* were both described contemporaneously by Linnaeus. The latter is a well-known species and *M. angustifolia* is therefore best placed into synonymy under *M. echinata*. The oldest available name for the plant currently known as *Daubenyia angustifolia* is either *Massonia marginata* Willd. ex Kunth or *Massonia rugulosa* Licht. ex Kunth. Again, both species were described in the same publication. Enquiries suggest that the Lichtenstein material is no longer extant (R. Vogt pers. comm.) but the Willdenow collection is a fine specimen that coincides with the current concept of the taxon and is therefore chosen here to represent the species.

The confusion between *M. angustifolia* and the taxon now correctly known as *D. marginata* can probably be traced to Baker's treatment in *Flora capensis* (Baker 1896). An earlier coloured engraving of the species (Ker Gawler 1804), based on Masson's original collections, shows all of the characteristics evident in the engraving in *Hortus kewensis*, thereby reaffirming the Linnean concept of the species. Likewise, Baker's interpretation of *M. angustifolia* as having white, fragrant flowers with reflexed tepals also coincides perfectly with the original concept of the species. However, the second of the two specimens cited by him (*Zeyher s.n.*, K, drawing BOL!; the other is the typical Thunberg material) represents the plant described as *Massonia zeyheri* Kunth, which was considered by some authors (Jessop 1976) to be conspecific with *D. marginata*. Both Jessop (1976) and Müller-Doblies & Müller-Doblies (1997) were apparently misled by the fictitiously long tube in the original engraving and by the misattributed *Zeyher* collection, into equating the species with *M. marginata* and *M. zeyheri* respectively.

***Daubenyia marginata* (Willd. ex Kunth) J.C. Manning & A.M. van der Merwe, comb. nov.**

Massonia marginata Willd. ex Kunth, Enumeratio plantarum 4: 299 (1843). *Polyxena marginata* (Willd. ex Kunth) Benth. & Hook. f. ex T. Durand & Schinz: 366 (1893). *Neobakeria marginata* (Willd. ex Kunth) Schltr.: 150 (1924). Type: South Africa, Caput Bona Spei (B-WILLD6373, holo.-NBG, photo!).

Massonia rugulosa Licht. ex Kunth: 299 (1843). *Polyxena rugulosa* (Lichtenst. ex Kunth) Baker: 420 (1896). *Neobakeria rugulosa* (Licht. ex Kunth) Schltr.: 150 (1924). Type: Caput Bona Spei, Lichtenstein 224 (B, holo., ?destroyed).

Polyxena haemanthoides Baker: t. 1727 (1888). *Neobakeria haemanthoides* (Baker) Schltr.: 150 (1924). Type: South Africa, Nuweveld Mountains near Fraserburg, Bolus 5493 (BOL!, lecto., here designated, G, SAM).

Massonia angustifolia auct. non *M. angustifolia* L.f. (= *M. echinata* L.f.)

***Massonia echinata* L.f.: 193 (1782).** Type: South Africa, Crescit juxta margines montis, dicatae Bocklands Berg [= Bokkeveld Mountains], Thunberg s.n. (UPS-7992, holo.!).

Massonia angustifolia L.f.: 193 (1782). *M. lanceolata* Thunb.: 40 (1794) nom. superfl. *Polyxena angustifolia* (L.f.) Baker: 419 (1896). *Neobakeria angustifolia* (L.f.) Schltr.: 150 (1924). *Daubenyia angustifolia* (L.f.) A.M. van der Merwe & J.C. Manning in Goldblatt & Manning: 713 (2000). Type: South Africa, Crescit in summo monte Onderste Roggeveldt, 16.11.1774 (UPS-THUNB7990 excl. fruiting fragments, holo.!), syn. nov.

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