TYPIFICATION AND A NEW STATUS IN *DIOSPYROS*

INTRODUCTION

Maba natalensis, the basionym of *Diospyros natalensis*, was published by Harvey (1863) and based on a Gerrard & McKen specimen from Durban, KwaZulu-Natal. For a long time this species was known as a constituent of coastal dune forest ranging from East London to northern KwaZulu-Natal. Hutchinson (1912) described *M. dawei* from Mozambique, but it was subsequently transferred to *Diospyros* by Brenan (1948) as *D. dawei*, a taxon which turned out to be a small leaf form of *D. natalensis*, and the latter's distribution range was consequently extended along the coast through Mozambique and Tanzania to as far north as southern Kenya.

Brenan (1948) described a related species, *Diospyros nummularia* from Zimbabwe, based on a specimen collected by Eyles in the present-day Harare, Zimbabwe. For a long time it was thought that this species was confined to granite outcrops near water in Zimbabwe, but it was also found in the Crocodile Gorge, Mpumalanga, and on the Lebombo Mountains in Swaziland and adjacent parts of Mozambique. Brenan (1954) added a third species to this complex, *D. nyasae* from Malawi. It was first collected on Mt Mulanje (formerly Mt Mlanje) in 1946 by L.J. Brass and he recorded this plant as growing on the flood-swept edges along the Likabula River, a habitat which prompted Van Steenis (1981: 225) to list the species as a rheophyte. With leaves long and narrow, tapering at both ends and usually 32–41(–50) mm long, *D. nyasae* has been referred to by various authors (White 1983, 1988; White & Verdcourt 1996) as the 'stenophyllous or narrow-leaved form' or 'Mulanje variant' of *D. natalensis*.

Diospyros natalensis varies considerably in leaf shape and size (White 1988: fig. 10). *D. nyasae* and the much smaller rounded-leaved form, *D. nummularia*, are merely two extreme forms at opposite ends of the range of leaf variation in the *D. natalensis* complex. *D. nummularia* has consistently small, roundish leaves and is confined to riverine forest, usually among granitic boulders, or seasonal streams or riverbeds in *Brachystegia* woodland; both habitats are occasionally subjected to flooding. *D. nyasae,* on the other hand, still fits into the wider concept of the variable *D. natalensis*, and many intermediates are known from Mt Mulanje where this form was first described. Therefore I agree with White in Van Steenis (1981: 225) that these intermediate specimens (*Brass 16385*, *Buchanan 975, Chapman & Chapman 7065*, *8138, Graham 2170* and *Muller 1581*) cannot even be recognized as a subspecies (although it may well be a subspecies 'in the making'), and it is therefore considered conspecific with *D. natalensis*.

Diospyros natalensis, as defined here in a broad sense, is associated with forest and usually grows near or in water along stream or river banks, ocassionally on coastal dunes or along the shores of fresh water lakes (De Winter 1963). *Diospyros natalensis* and *D. nummularia* are obviously very closely related. The flowers are similar and both have acorn-shaped fruit with a sharp tip at the apex, clasped by a slightly accrescent calyx at the base (thus resembling an acorn), but the two taxa can be separated on vegetative characters and geographical distribution. Therefore, to acknowledge these differences, the two taxa are here considered subspecies of *D. natalensis*, rather than one variable species as treated by White (1983, 1988) and White & Verdcourt (1996).

De Winter (1963) recognized *Diospyros natalensis* and *D. nummularia* as two distinct species, but noted that *D. nummularia* may prove to be only a subspecies of *D. natalensis*. White (1988) stated that *D. natalensis*, *D. nummularia* and *D. nyasae* were connected by intermediates and therefore he recognized only one variable species, namely *D. natalenisis*. White must, however, have changed his mind at some stage, because there are some earlier annotated specimens with White's determinative labels, dated 1968, containing the manuscript

names *D. natalensis* subsp. *natalensis* (*Buchanan 975* at Kew and type of *D. nyasae*) and *D. natalensis* subsp. *nummularia* (*Eyles 3414* at Kew and type of *D. nummularia*). Subsequently, some authors (e.g. Palmer & Pitman 1973; Coates Palgrave 1977; Pooley 1993; McCleland 2002) cited *D. nummularia* as a subspecies of *D. natalensis* in error, assuming that White had validly published this infraspecific name. None of these authors cited the basionym and according to Article 33.4 of the International Code of Botanical Nomenclature (McNeill *et al.* 2006), the name *D. natalensis* subsp. *nummularia* is therefore not validly published. The new combination is made in this paper. *D. nyasae* is a synonym of *D. natalensis* subsp. *natalensis* (White 1983).

Linnaeus (1753) described *Royena lucida*. When southern African species of *Royena* were transferred to the genus *Diospyros* (De Winter & White 1961), the specific epithet *lucida* could not be used because the name *D. lucida* (Loudon 1841) already existed for another taxon and such a combination would have been considered a later homonym. The next available epithet was *whyteana* from the basionym *Royena whyteana* described by Hiern (1894) from a specimen collected by Alexander Whyte (1834–1908) on Mt Mulanje, Malawi. Today, only a fragment of the holotype exists in the British Natural History Museum, London (BM). Although it is a sterile specimen with only a few leaves and without any flowers or fruit, it cannot easily be mistaken for any other *Diospyros* species growing on Mt Mulanje. It is not considered an ambiguous specimen and therefore there is no need to appoint an epitype. The fruit of *D. whyteana* is very distinctive with the inflated accrescent calyx that envelops the fruit completely. Chapman recollected herbarium material at the type locality in 1957, and the Kew specimen (*Chapman 247*) is cited in *Flora zambesiaca* by White (1983) and a duplicate is housed in PRE. This confirms the existence of *D. whyteana* on Mount Mulanje.

Gürke described *Royena wilmsii* in 1898, based on a Wilms specimen, and *R. goetzei* and *R. nyassae* in 1901, based on Goetze specimens housed in the Berlin Herbarium. All three of these taxa are conspecific with *Diospyros whyteana* (De Winter 1963). In the case of the holotypes (Wilms and Goetze specimens), which were destroyed in the Berlin Herbarium during World War II, lectotypification is covered by Article 9.15 of the Code (McNeill *et al.* 2006), which provides for the restriction of the lectotype to a single specimen. The Aluka Library (http://www.aluka.org/) indicates that adequate duplicate herbarium material of Goetze has survived in the National Botanic Garden of Belgium in Meise (BR), sufficing as lectotypes for *R. goetzei* and *R. nyassae*. In the case of *R. wilmsii*, an isotype survived in Kew and it is here selected as the lectotype.

TAXONOMY

Specimens seen on the Aluka Library website (http://www.aluka.org/) are distinguished by the code e! in the citations.

1. **Diospyros natalensis** *(Harv.) Brenan* in Memoirs of the New York Botanic Gardens 8,5: 501 (1954); De Winter: 58 (1963); R.B.Drumm.: 267 (1975); F.White: 254 (1983); F.White: 343 (1988); Pooley: 404 (1993); F.White & Verdc.: 13 (1996); M.Coates Palgrave: 905 (2002). Type: South Africa, KwaZulu-Natal, Durban, *Gerrard & McKen 675* (TCD, holo. e!; K, iso. e!).

Maba natalensis Harv.: 7 (1863); Hiern: 131 (1873).

Maba dawei Hutch.: 330 (1912). *Diospyros dawei* (Hutch.) Brenan: 111 (1948). Type: Mozambique, Chimoio, Garuso, *Dawe 524* (K, holo. e!).

Diospyros nyasae Brenan: 500 (1954). Type: Malawi, without precise locality, *Buchanan 957* (K, holo. e!).

Evergreen, multistemmed, much-branched shrub or small tree up to 6 m tall. *Branches* with widely spaced, white lenticels. *Leaves* simple, alternate, dark glossy green above, paler below; lamina with numerous small black dots and sometimes with larger black ones that might serve as extrafloral nectaries. *Flowers* white, small, up to 5 mm long. *Corolla* deeply 3-lobed, densely silvery hairy outside, with reflexed lobes; male flowers solitary or in clusters; female flowers solitary in axils of leaves. *Fruit* an acorn-shaped berry, ± 12 × 6 mm, with short sharp tip, seated in cup-shaped persistent calyx, orange to red when mature.

Key to subspecies of *Diospyros natalensis*

1a Young branches and petioles with long spreading hairs mixed with short, stiff hairs; leaves ovate or narrowly elliptic, usually > 15 mm long and wider than 10 mm; midrib distinct from base to apex on both lamina surfaces; lamina margin usually with long spreading hairs; pedicels with few hairs or glabrous ..... *D. natalensis* subsp. *natalensis*

1b Young branches and petioles densely covered with short, stiff hairs only, without long spreading hairs intermixed; leaves orbicular or suborbicular, < 15 mm long and narrower than 13 mm; midrib widened near base, distinctly sunken above for most of its length, disappearing before reaching apex (Figure 3), distinct along entire length on lower lamina surface; lamina margin without long spreading hairs; pedicels puberulous ..... *D. natalensis* subsp. *nummularia*

1a. subsp. **natalensis**

Diagnostic characters: leaves are ovate or narrowly elliptic, 15–25(–50) × 10–15(–25) mm, dark glossy green above or with a whitish bloom and much paler below. Petioles are sometimes glabrous for example in specimens from Mt Mulanje (Malawi). For additional diagnostic characters see key above.

Distribution and habitat: subsp. *natalensis* occurs in the coastal regions of southern Kenya, Tanzania, Mozambique, and in South Africa in KwaZulu-Natal and Eastern Cape as far south as East London. Its distribution extends inland into Malawi to Mt Mulanje near the border with Mozambique and the most eastern parts of Zimbabwe. Specimens inland from Lake Tanganyika [Lake Nyasa], Democratic Republic of Congo, northern Zambia and Lake Mweru, also seem to belong to subsp. *natalensis* (Figure 4). It is associated with forest on coastal dunes, along streams and rivers or the edges of lake shores.

1b. **Diospyros natalensis** *(Harv.) Brenan* subsp. **nummularia** *(Brenan) Jordaan*, stat. nov.

Diospyros nummularia Brenan in Kew Bulletin 1948: 111 (1948); De Winter: 58 (1963); M.Coates Palgrave: 906 (2002). Type: Zimbabwe, Harare [Salisbury], *Eyles 3414* (K, holo. e!).

FIGURE 3.—Leaves of *Diospyros natalensis* subsp. *nummularia*: midrib disappears before it reaches apex on upper surface.

Diagnostic character: the leaves are orbicular or suborbicular, 6–12(–15) × 7–10(–13) mm, very dark glossy green above, much paler below. For additional diagnostic characters see key above.

Distribution: subsp. *nummularia* occurs in southern Malawi, Zimbabwe, Mozambique (Tete Province), at Cahora Bassa, Mpumalanga in South Africa, and in Swaziland, especially along the Lebombo Range (Figure 4). It grows between granite rocks in streambeds fringed by riverine forests.

2. **Diospyros whyteana** *(Hiern) F.White* in Bothalia 7: 458 (1961); F.White: 326 (1962); De Winter: 69 (1963); F.White: 94 (1971); R.B.Drumm.: 267 (1975); F.White: 269 (1983); Pooley: 406 (1993); F.White & Verdc.: 28 (1996); A.E.van Wyk & P.van Wyk: 184 (1997); McCleland: 518 (2002); M.Coates Palgave: 911 (2002). Type: Malawi, Mlanje [Mulanje], *Whyte s.n.* (BM, fragment, holo. e!).

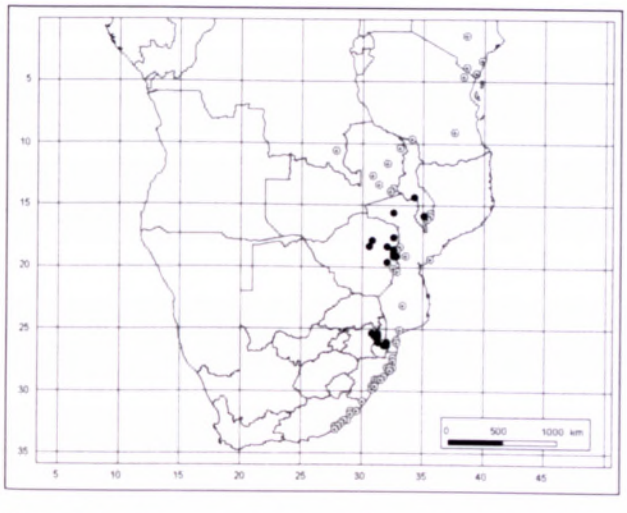

FIGURE 4.—Known distribution of *Diospyros natalensis* subsp. *natalensis*, ⊙; and *D. natalensis* subsp. *nummularia*, ●, based on specimens in the National Herbarium, Pretoria (PRE).

Royena whyteana Hiern: 25 (1894). *R. lucida* L. var. *whyteana* (Hiern) De Winter & Brenan: 499 (1954).

R. lucida L.: 397 (1753) non *Diospyros lucida* Hort. ex Loudon: 394 (1841); Hiern: 447 (1906). Type: South Africa, locality unknown, *Linnaean Herbarium No. 570.1* [LINN, lecto., designated by White & Verdcourt (1996)].

R. wilmsii Gürke: 60 (1898). Type: South Africa, Gauteng, Pretoria, *Wilms 923* (B, holo.†; *K000350826*, lecto. e!, designated here).

R. goetzei Gürke: 372 (1901). Type: Tanzania, Mbeya Dist., Igala Pass, *Goetze 1344* (B, holo.†; BR, lecto. e!, designated here; BM, isolecto.).

R. nyassae Gürke: 373 (1901). Type: Tanzania, Kingagebirge, *Goetze 1203* (B, holo.†; BR, lecto. e!, designated here; BM, isolecto.).

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