

ASPHODELACEAE

INCLUSION OF THE GENUS *JODRELLIA* IN *BULBINE* (ASPHODELOIDEAE)

The genus *Jodrellia* Baijnath was described to accommodate three white-flowered species from tropical Africa, two of which were formerly included in *Bulbine* Wolf (Baijnath 1978). These species were separated from *Bulbine* based on a combination of characters, namely radiate roots, inflorescences shorter than the leaves, a white perianth with three- to five-nerved outer tepals, and obscure stigmatic papillae (Baijnath 1978). These characters, with the exception of the three- to five-nerved outer tepals, are also found in species of *Bulbine* and other genera of the Asphodelaceae, thus reducing their significance as generic characters. Radiate roots, which are situated on a small vertical rhizome in *Jodrellia* (Baijnath 1978), occur sporadically in other genera of the Asphodelaceae, notably *Trachyandra* Kunth, and are not unique to *Jodrellia*. The underground parts of *Bulbine* species are variable but normally either tuberous or a horizontal rhizome. White flowers, as are found in *Jodrellia*, occur in forms of *Bulbine frutescens* (L.) Willd. (which some authors regard as a separate species, i.e. *B. triebneri* Dinter; Van Jaarsveld 2001; Klopper *et al.* 2008; Klopper & Smith 2009), while some forms of *B. abyssinica* A.Rich. have inflorescences that are shorter than the leaves. The outer tepals in *Bulbine* species are narrower than the inner ones, whereas the reverse is found in *Jodrellia*. The outer tepals are wider than the inner ones and accessory venation has developed, possibly as a result of the wider lamina. The obscure stigmatic papillae of *Jodrellia*, although shorter and fewer, are similar to those of *Bulbine*. Both genera share the hairy filaments, which is the most striking feature of the genus *Bulbine* and is unique to these two genera within the Asphodelaceae.

Molecular sequence data from chloroplast (*rbcL*, *matK* and *ndhF*) and nuclear (ITS) markers confirm the close relationship between the two genera, indicating that *Jodrellia* is embedded within *Bulbine* with strong support in both the analysis of chloroplast and nuclear regions (Devey *et al.* 2006). The genus *Bulbine* is thus paraphyletic without the inclusion of *Jodrellia*, and Devey *et al.* (2006) have no hesitation in recommending the transfer of *Jodrellia* to *Bulbine*. This is necessary in order to preserve the monophyly of the genus. Species of *Jodrellia* should thus be viewed as representing a small, specialized lineage within *Bulbine* rather than as a genus distinct from it. This interpretation is supported by the weak morphological differences between the two, essentially the development of accessory veins in the outer tepals in *Jodrellia*. The necessary nomenclatural changes are presented below.

***Bulbine* Wolf**, Genera plantarum: 84 (1776). Type species: *B. frutescens* (L.) Willd. *Jodrellia* Baijnath: 574

(1978), syn. nov. Type species: *Jodrellia macrocarpa* Baijnath.

***Bulbine fistulosa* Chiov.** in Annali di Botanica (Roma) 9: 143 (1911). *Jodrellia fistulosa* (Chiov.) Baijnath: 576 (1978). Type: Ethiopia, *Chiovenda* 557 (FI, holo.).

***Bulbine macrocarpa* (Baijnath) Boatwr. & J.C. Manning**, comb. nov. *Jodrellia macrocarpa* Baijnath in Kew Bulletin 32: 574 (1978). Type: Kenya, *Gillett* 13141 (K, holo.).

***Bulbine migiurtina* Chiov.** in Lavori eseguiti presso il Reale Istituto Botanico di Catania 1: 5 (1928). *Jodrellia migiurtina* (Chiov.) Baijnath: 577 (1978). Type: Somaliland, *Puccioni & Stefanini* 777 [860] (FI, holo.).

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