

ASTERACEAE

A NOTE ON THE *BRACHYLAENA DISCOLOR* COMPLEX

In their revision of the South African species of *Brachylaena*, Phillips & Schweickerdt (1937) recognised nine species, including *B. uniflora* Harv., *B. transvaalensis* E. Phillips & Schweick. (a new species) and *B. discolor* DC. The key character by which they distinguished the latter three species was the number of flowers in the male capitula (1–3 in *B. uniflora*; 7–50 in *B. transvaalensis* and *B. discolor*). This is unfortunately not sufficient for identification purposes because female plants are not taken into account. *B. transvaalensis* was distinguished from *B. discolor* by the size of the capitula (less than 10 mm long in *B. transvaalensis* and over 10 mm long in *B. discolor*). Paiva (1972) reduced *B. transvaalensis* to a subspecies of *B. discolor* [*B. discolor* DC. subsp. *transvaalensis* (E. Phillips & Schweick.) Paiva] and divided *B. discolor* DC. subsp. *discolor* into two varieties (var. *discolor* and var. *mossambicensis* Paiva). He did not include *B. uniflora* in his publication as this species fell outside his study area, but a label on a specimen in PRE indicates that he recognised *B. uniflora* as a

separate entity. Hilliard & Burt (1971) studied these three species and came to the conclusion that they should be regarded as members of a complex comprising either a single species showing clinal variation in the number of flowers per capitulum, loosely linked to an ecological cline from coastal dunes to inland forest, or representing two species which have met and are now hybridising. They did find a general correlation between small, few-flowered capitula with short involucre and much-branched synflorescences, whereas larger capitula with longer involucre tend to correlate with less branched synflorescences. They did not find any conspicuous vegetative differences between these three species, a view supported by my studies of herbarium material. Hilliard (1977) did not agree with Paiva (1972) in the division of *B. discolor* into subspecies and varieties, a view also supported by Pope (1992) and myself. Cilliers (1993) published a synopsis of the genus *Brachylaena* in southern Africa. He followed Paiva in upholding the subspecies of *B. discolor* but sank *B. uniflora* Harv. under *B. discolor*

TABLE 1.—A summary of diagnostic features and distribution of three *Brachylaena* species

	<i>B. discolor</i>	<i>B. transvaalensis</i>	<i>B. uniflora</i>
Involucre			
♂ and ♀	large	small	small
Shape ♀	widely infundibuliform to cyathiform at base		
Shape ♂	globose to cyathiform		
Shape ♂ and ♀		globose to cyathiform	narrowly infundibuliform
♂ and ♀	distinct stalks	sessile or subsessile	slender
♂ and ♀	few scattered bracts	bracts extending to base of stalk	inner bracts narrowly triangular, acuminate, stiffly erect
Size ♀	(7–)10–18(–23) × (3.5–)5.0–10.0(–12.0) mm	(4.0–)5.5–7.0(–8.5) × (2.0–)3.0–4.5(–8.5) mm	(3–)4–7(–10) × 1–5 mm
Size ♂	(5.5–)6.0–13.0(–15.0) × (2.5–)4.0–6.0(–8.5) mm	(3.5–)4.0–6.5(–7.0) × (1.5–)2.5–3.5(–4.0) mm	2.5–4.0(–5.5) × 1–3 mm
Life form	shrubs or trees	large trees	shrubs or trees
Habitat	dune and coastal forests	inland medium altitude and Afro-montane forests	coastal forests
Distribution	coast of KwaZulu-Natal, Eastern Cape, few from Swaziland, Mpumalanga and Northern Province (Figure 4)	Northern Province, Mpumalanga, Swaziland, few from KwaZulu-Natal (Figure 4)	coast of KwaZulu-Natal, Eastern Cape, few specimens inland (Figure 4)

DC. subsp. *transvaalensis* (E. Phillips & Schweick.) Paiva. The illustration of *B. discolor* subsp. *transvaalensis* in Cilliers (1993: fig. 15), appears to depict a combination of *B. uniflora* and *B. transvaalensis*: the branch with leaves and female capitula (A) and the female capitulum (C) look like those of *B. uniflora*; the male capitulum (B) like that of *B. transvaalensis*. Pope (1992) in his treatment of the genus *Brachylaena* for the *Flora zambesiaca* area, recognised *B. discolor* without any subspecies and regarded *B. transvaalensis* as a separate species, as originally described by Phillips & Schweickerdt (1937). He did not mention *B. uniflora*, as this species did not fall within his study area. I agree with Phillips & Schweickerdt (1937) who kept the three species distinct and undivided, a view also subscribed to by Pope, as far as he studied the complex.

Not any of the above-mentioned authors used the shape of the involucre as a distinguishing character. The involucres of the three species are either infundibuliform, cyathiform or globose. It seems to be a constant character which can be used easily. Pope (1992) used the character of the capitula being stalked or not. This feature is not always easy to distinguish in South African material.

Table 1 gives a summary of the diagnostic features of the three species *B. discolor*, *B. transvaalensis* and *B. uniflora*. Using the shape of the involucre, they can generally be easily separated in the herbarium provided good fertile material of either sex is available. Distribution of the species (Figure 4) is listed in Table 1.

On the basis of the shape of the involucre, the three species can be separated as follows (measurements of involucre length include the stalk, where applicable, and width is measured across the widest part):

1a Involucre infundibuliform

2a Male and female capitula small, synflorescences very dense, **involucre of both male and female capitula narrowly infundibuliform**, slender (Figure 3G–J), 2.5–4.0(–5.5) × 1–3 mm in male capitula and (3–) 4–7(–10) × 1–5 mm in female capitula, inner bracts

narrowly triangular to almost linear, acuminate, stiffly erect; leaves oblanceolate to obovate, rounded or sometimes briefly acuminate at apex 3. *B. uniflora*

2b Female capitula large, mostly with distinct stalks with only a few scattered bracts, **involucres of female capitula widely infundibuliform to cyathiform** at base (Figure 3B), (7–)10–18(–23) × (3.5–)5.0–10.0(–12.0) mm; bracts narrowly ovate with apex acute and somewhat spreading, synflorescence less dense than in *B. transvaalensis*; leaves similar to those of *B. uniflora* but more constant in male than female plants 1. *B. discolor*

1b Involucre globose to cyathiform:

3a Male capitula large, mostly with distinct stalks with only a few scattered bracts, **involucres of male capitula** (5.5–)6.0–13.0(–15.0) × (2.5–)4.0–6.0(–8.5) mm (Figure 3A); bracts narrowly ovate with apex acute, somewhat spreading, synflorescence less dense than in *B. transvaalensis*; leaves oblanceolate to obovate, rounded or sometimes briefly acuminate at apex but more constant in male than female plants 1. *B. discolor*

3b Male and female capitula small, mostly sessile or subsessile with involucral bracts extending to the base of the stalk, involucres (3.5–)4.0–6.5(–7.0) × (1.5–)2.5–3.5(–4.0) mm in male capitula and (4.0–)5.5–7.0(–8.5) × (2.0–)3.0–4.5(–8.5) mm in female capitula (Figure 3C–F), synflorescence very dense; leaves narrowly elliptic, acute and ± acuminate at apex but more constant in male than female plants 2. *B. transvaalensis*

Specimens examined

Abbott 3958 (3) NH. Abrahams s.n. (1) PRE. Archibald 3632/32, 3690 (1) PRE. Aubrey s.n. NU34158, NU34172 (1) NU.

Balkwill 372 (3) NU. Bayer 554 (1) NU. Bayliss BRLB 1499, 1516 (3); 1540 (1) PRE. Biegel 2258 (2) NU. Boocock 26 (3) PRE. Borchers 52 (2) PRE. D.J. Botha 654 (2) PRE. W.M. Botha 5286 (2) PRE. Bourquin 46 (2), 150 (1) NU. Breyer s.n. Tvl. Mus. 24388 (2) PRE. Britten 773, 1837, 2300, 2412 (1) PRE. Bruce 1 (1) PRE. Brummitt 12457 (2) PRE. Bruton 12 (1) PRE. Burger 525 (2) PRE. Burt Davy 2392 (1) PRE.

Coleman 335 (3) NH. Comins 1255A (1) PRE. Compton 26061, 26994, 29070, 29073 (2) PRE. Cooper 1240 (1) PRE. Culverwell 961, 975 (1) PRE. Cunningham 856 (3) NU.

Davis 82 (3) NH. De Winter 8359a (1) PRE. Dlamini s.n. PRE31785, PRE31787, PRE43310 (2) PRE. Du Toit 1265 (1) NH, PRE.

Edwards 1529 (3) NU, PRE. Evans 5398 (2) PRE.

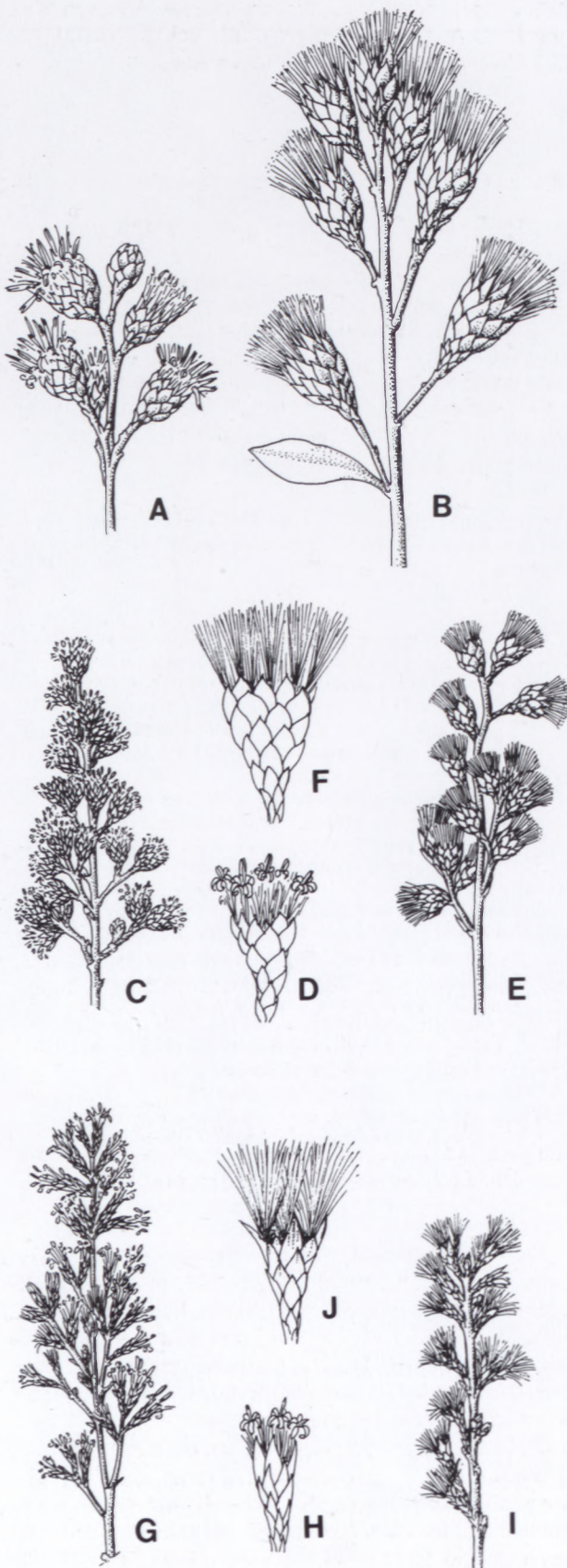


FIGURE 3.—Shape of involucre of ♂ and ♀ capitula of *Brachylaena* spp. A, B, *B. discolor*: A, ♂, × 1, Van Wyk 6120 & Mogg 38407; B, ♀, × 1, Strey 8789 & Schweickerdt 1384. C–F, *B. transvaalensis*: C, ♂, × 1; D, ♂, × 3, Galpin 451 & Van Vuuren 1278; E, ♀, × 1; F, ♀, × 3, O'Connor 1471 & Forester Evans 5398. G–J, *B. uniflora*: G, ♂, × 1; H, ♂, × 3, Kotze 432 & Medley Wood 12670; I, ♀, × 1; J, ♀, × 3, Bayliss BRL.B1499 & Boocock 26. Artist: Gillian Condy.

Fegen 2060 (1) PRE. Flanagan 860, 861 (1) PRE. Forbes 330 (1) NH. Forbes & Obermeyer 28 (1) NH, PRE. Forestry Dept., Pta. s.n. Tvl. Mus. 9703 (2) PRE.

Galpin 451, 12114, 13995 (2) PRE. Gerrard & McKen 1017 (1), 1866 (3) NH. Gerstner 3013 (3), 4892 (2), s.n. PRE43300 (3) PRE. Gibbs Russell 3879 (1) PRE. Giffen 254 (1) PRE. Goodman 304 (1) NU. Gordon 162 (3), 348 (1) NH. Gordon-Gray 596 (1) NU; 607 (3) NH; 1580 (3) NU. Grenfell 1105 (2) PRE. Guy & Jarman 2 (2) NU.

Hafström & Acocks 1529 (2) PRE. Hall-Martin 1867 (1) PRE. Halse s.n. (3) NU. Hanekom 2312 (2) PRE. Harrison 29 (1) PRE. Hemm 268 (male plant) (2) PRE. Hillary 392 (2) NU. Hilliard 5068, 5069 (3) NU. Hubbard 6103 (1) PRE.

N. Jacobsen 1810, 2963 (2) PRE. W. Jacobsen 5329 (2), 4712 (1) PRE. Jones 55 (2) PRE. Jordaen 87 (2) PRE.

Karsten s.n. PRE31786, PRE43311 (2) PRE. Keet 1130 (2) PRE. Kluge 173, 1070 (2) PRE. Kotze 89, 450 (1), 432 (3), 2835 (2) PRE. Krige 19 (2) PRE.

Lansdell 66 (1) NH, PRE; s.n. NH34283 (1) NH. Law 71 (2) NU. Lawn 643 (3) NH. Letty 222 (1) PRE.

Macleod 19 (2) NU. Marloth 4174 (1) PRE. Marriott s.n. (1) PRE. McCallum 1532 (2) PRE. McMurtry 2190 (1) PRE. Meyer 6144 (1) PRE. Mills 342 (3) PRE; 469 (1) NH, PRE. Mogg 33761 (3), 38407, 38443 (1) PRE. Moll 1816 (1) NU, PRE; 4501 (2) NH. Munro P.S. 2 (1), 35, 213 (2) PRE.

Nel 258 (2) PRE. Nicholas 1637 (1) NH, PRE. Nichols 424 (1) NH. Nicholson 808 (3) PRE. Nixon 24 (1) NU.

Obermeyer s.n. Tvl. Mus. 35830 (2) PRE. Obermeyer, Schweickerdt & Verdoorn 349 (2) PRE. O'Connor 1471, 3559 (2) PRE. Oranje 2 (2) PRE.

Pegel NDO 119 NH59807 (3) PRE. Pole Evans H15719 (2) PRE. A. Prior s.n. PRE30046 (1) PRE. J. Prior 103, 304 (2) PRE.

Rauh & Schlieben 9721 (2) PRE. Ross 2115, 2118 (1) NH, PRE; 2383, 2388 (1) PRE. Rudatis 653 (3), 1089 (1) PRE.

Scheepers 692 (2) PRE. Schlechter 2886 (1) PRE. Schonland 3304 (1) PRE. Schrire, Van Wyk & Abbott 1782 (3) NH. Schweickerdt 1367 (1) PRE; 1368 (2) NH, PRE; 1384 (1) NH, PRE. Sikhakhane 110 (1) NH. Sim 19260 (1) PRE. Smuts s.n. PRE43373 (1) PRE. Stephen 385 (1) PRE. Stephen & Van Graan 1266 (1) PRE. Stewart s.n. PRE61399 (2) PRE. Stielau 23 (1) PRE; 192 (1) NH, PRE. Story 1289 (1) PRE. Strey 6894, 7658, 8753, 8783, 8789, 8790, 8791, 8792, 8793, 8798, 9909 (1) PRE; 8822, 8858, 8859, 9907 (1) NH, PRE; 8779 (1) NH; 8795 (1) NU, PRE; 8788 (1) NH, NU, PRE; 8754, 8797 (2) PRE; 8751, 8752, 8787, 8805, 8819, 8841 (3) PRE; 8784, 8804, 8820, 8824, 10973 (3) NH, PRE; 8823 (3) NU, PRE. Strey & Huntley 4292 (1) NH, PRE. Stubbings 4B (3) PRE.

Taylor 206 (1) NU. Thode 2927, 2936 (3) PRE; A1518, A1532 (1) PRE. Thorncroft s.n. Tvl. Mus. 2773, Tvl. Mus. 11174 (2) PRE. Thornes

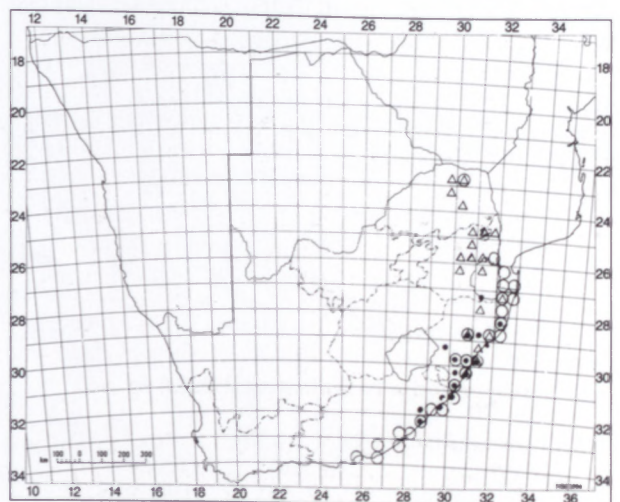


FIGURE 4.—Distribution of *B. discolor*, ○; *B. transvaalensis*, △; and *B. uniflora*, ●.

sub *Strey* 5785 (3) NU, PRE. *Tosh s.n. NU30704* (1) NU. *Tustin* 3555, 3556 (2) PRE. *Tyson* 8575, 12571 (1) PRE.

Van Jaarsveld 748 (2) PRE. *Van Vuuren* 1278 (2) PRE. *Van Wyk* 6120 (1) PRE. *Van Wyk & Theron* 4600, 4741 (2) PRE. *F. Venter* 980 (3) PRE. *H.J.T. Venter* 1927 (1) PRE.

C.J. Ward 5810, 6624, 7137 (1) PRE; 2687, 6623, 7138 (1) NH, PRE; 22 (1) NU; 2630 (3) NH, PRE. *M.C. Ward* 25 (1) NU; 801 (1) NH, PRE; 504, 2090 (1) NH; 1542 (2) NH. *Willox* 1 (1) PRE. *Wirringhaus* 520 (1) NU. *Wood* 585 (3) NH; 4907 (1), 12287, 12670 (3), 12670a (1), 12670b (3) PRE. *Wright* 114 (1) PRE.

Problem specimen

Hemm 268 (female plant, PRE), identified as *B. discolor*, is a very peculiar specimen totally out of the distribution range of the species and with smaller capitula than the usual *B. discolor*, but with stalked capitula and an involucre similar to that of *B. discolor*. Vegetatively it looks very similar to *Hemm* 268 (male plant, PRE), identified as *B. transvaalensis*.

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