

Notes on African plants

VARIOUS AUTHORS

ASCLEPIADACEAE

NOTES ON ASCLEPIAS DIPLOGLOSSA, A. COGNATA AND A. FLAVA

A. flava N.E.Br. and *A. cognata* N.E.Br. have in the past been erroneously considered conspecific with *A. diploglossa* (Turcz.) Druce. Although allied, these three taxa are morphologically distinct.

South African herbaria have, for some years, treated *A. flava* N. E. Br. and *A. cognata* N.E.Br. as synonyms of the older *A. diploglossa* (Turcz.) Druce. This is due to the misinterpretation of a letter sent from Kew to the Botanical Research Institute in 1963. Marais, who was then the South African Liaison Officer at Kew, mentions in this letter that 'Mr Bullock regards both *A. flava* N.E.Br. and *A. cognata* N.E.Br. as conspecific with *A. diploglossa*'. He does, however, state earlier in the same

letter 'As far as I know *A. flava* N.E.Br. has not been sunk under *A. diploglossa*'. This was, and still is the case as Bullock did not publish his opinions. Despite Marais's warning that these reductions to synonymy were not validly published, Bullock's suggestions were unfortunately followed and to all intents and purposes *A. flava* and *A. cognata* became synonyms under *A. diploglossa*. This situation has recently been rectified in Gibbs Russell *et al.* (1984) and further details are given here.

Although vegetatively similar, close examination shows all three species to be distinct taxonomic entities with very different floral morphologies (Figures 1 & 2; Table 1).

KEY TO ASCLEPIAS DIPLOGLOSSA AND ITS ALLIES

- 1a Proximal corona lobe appendages projecting over style apex *A. cognata*
- 1b Proximal corona lobe appendages not projecting over style apex:
 - 2a Corona lobes with arm-like proximal appendages crossing over each other and reflexing back into coronal sinus, appendages are below style apex and level with anther-wings *A. flava*
 - 2b Corona lobes without true proximal appendages, proximal ends of corona forming dentate to obtuse (but protruding) shoulders level with top of style apex *A. diploglossa*

Representative specimens

Asclepias diploglossa (Turcz.) Druce

NATAL.—2730 (Vryheid): Wakkerstroom (-AD), *Devenish 759* (NH, PRE). 2828 (Bethlehem): Royal Natal Park (-DB), *Acocks & Hafstrom 11205* (PRE). 2829 (Harrismith): Van Reenen (-AD), *Wood 11205* (PRE). 2929 (Underberg): Giants' Castle (-AB), *Symons 188* (PRE); Highmoor State Forest (-BC), *Killick & Vahrmeijer 3583* (PRE); Sani Pass (-CB), *Lugillies 109* (NU); Bushman's Nek (-CC), *Killick & Vahrmeijer 3969* (PRE); Garden Castle Nature Reserve (-CD), *Hilliard & Burt 7866* (NU); Mpendle (-DB), *Moll 1481* (PRE); Glengariff (-DD), *Rennie 488* (NU). 2930 (Pietermaritzburg): Greytown (-BA), *Wylie s.n. (NH 21644)*; Inanda (-DB), *Groom s.n. (NH 4106)*.

TRANSKEI.—3028 (Matatiele): Ramatseliso's Gate (-BB), *Boardman 186* (PRE).

CAPE.—3227 (Stutterheim): Hogsback (-CA), *Compton 1421* (NBG); Dohne Hill (-CB), *Sim 1237* (SAM). 3326 (Grahamstown): near Grahamstown (-BC), *Glass 1503* (SAM).

Asclepias flava N.E.Br.

NATAL.—2929 (Underberg): Underberg (-CD), *Dyer 3744* (NH); Sunset (-DA), *Rennie 275* (NU); Mpendle (-DB), *Huntley 625* (NH); Nkonzo State Forest (-DD), *Nicholas & Norris 1159* (CPF, NH, PRE). 2930 (Pietermaritzburg): Howick (-AC), *Haygarth s.n. (SAM 8378)*; Blinkwater Range (-AD), *Nicholas 1019* (NU); Zwaartkop (-CB), *Wood 11219* (SAM); Byrne (-CC), *Stewart 2023* (NU); Dargle (-DB), *Nicholas & George 1040* (CPF, K, MO, NH, NU). 3030 (Port Shepstone): Ixopo (-AA), *Shirley s.n. (NU)*.

TRANSKEI.—3029 (Kokstad): Mt Currie (-AD), *Tyson 1686* (BOL, PRE); Malowe (-BD), *Tyson 1086* (BOL, SAM); Vaal Bank (-CB), *Haygarth s.n. (NH 4230)*; Ngeli Forest (-DA), *Coleman 813* (PRE); Fort Donald (-DC), *Tyson 1660* (SAM). 3128 (Umtata): Bazija (-CB), *Baur 556* (SAM).

CAPE.—3326 (Grahamstown): Grahamstown (-BC), *Glass 1503* (NBG).

Asclepias cognata N.E.Br.

NATAL.—2929 (Underberg): Fort Nottingham (-BD), *Hilliard & Burt 9056* (NU); Bamboo Mountain (-CB), *Grice s.n. (NU)*; Garden Castle Nature Reserve (-CD), *Hilliard & Burt 13767* (NU); Mpendle (-DB), *Hilliard & Burt 13856* (NU).

TRANSKEI.—3029 (Kokstad): Ensikeni (-BA), *Haygarth s.n. (NH 15735)*; Mount Insizwa (-CD), *Schlechter 6496* (BOL, NH); Ngeli Mountain (-DA), *Hilliard & Burt 5769* (NH, NU).

CONCLUSIONS

A. flava and *A. cognata* have never been validly reduced to synonymy under *A. diploglossa* and are, as outlined by Brown (1908), distinct species allied to, but separable from *A. diploglossa*.

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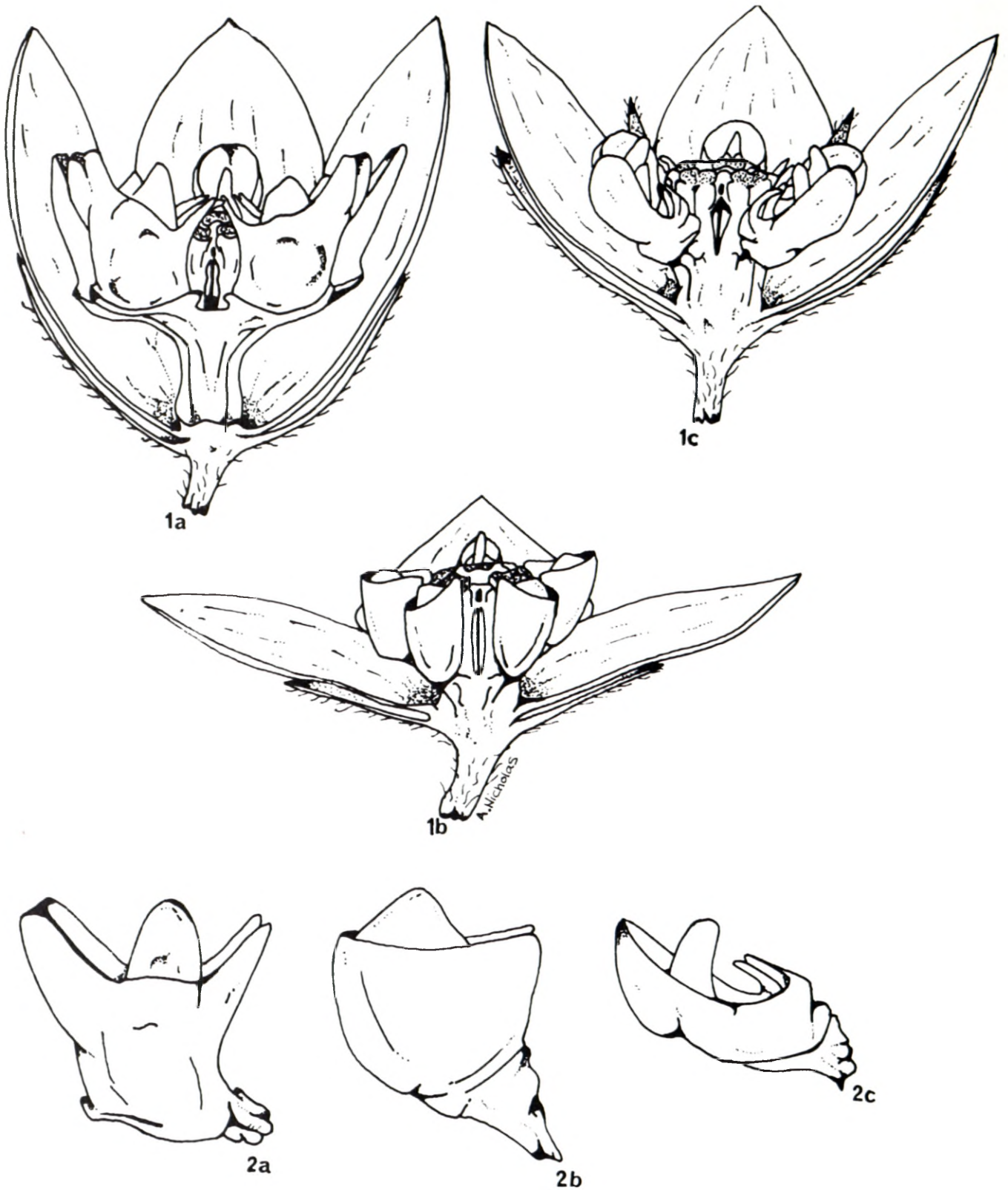


FIGURE 1.—Comparison of flower (1) and corona lobe (2) of *Asclepias* species. Structure in: 1a, *A. cognata*, $\times 10$, Hilliard & Burt 9056 (NU); 1b, *A. diploglossa*, $\times 20$, Boardman A11 (PRE); 1c, *A. flava*, $\times 19$, Coleman 813 (PRE); 2a, *A. cognata*, $\times 17$, Hilliard & Burt 9056 (NU); 2b, *A. diploglossa*, $\times 28$, Boardman A11 (PRE); 2c, *A. flava*, $\times 38$, Coleman 813 (PRE).

TABLE 1.—A comparison of *Asclepias cognata*, *A. diploglossa* and *A. flava*. All measures in mm

Character	<i>A. cognata</i>	<i>A. diploglossa</i>	<i>A. flava</i>
Leaf length	7–68	5–133	7–83
Petiole length	0–3	0–4	0–5
Inflorescence bract length	2,6–6,2	2,5–10	2,6–7,5
Peduncle length	3–92	0–95	4–175
Flower colour	Yellow, yellow & purple	Yellow, yellow & brown	Yellow-green
Flower width	7–17	6–13	5–8
Flower height	5–12	4–9	3–6
Sepal width	1–1,8	1–1,5	0,7–1,2
Petal length	5,8–10,5	4–7	3,5–5
Petal width	2,6–5,8	2,4–4,1	2–3,2
Corona lobe shape	Bonnet-like	Cup-like	Bowl-like
Corona lobe (sinus depth)	2,2–2,5	1,1–2	0,4–0,7
Proximal corona lobe appendage length	0,6–1,2	None	0,25–0,7
Coronal sinus appendage length	0,8–1,3	0,2–0,7	0,4–0,7
Alar fissure length	0,8–1,4	0,75–1,1	0,5–0,7
Anther appendage width	0,8–1,3	0,6–0,9	0,5–0,8
Style apex width	1,5–2,8	1,1–2,1	1,1–1,6
Translator-arm length	0,32–0,56	0,2–0,36	0,18–0,28
Corpusculum length	0,2–0,3	0,22–0,32	0,16–0,26
Pollinium length	0,72–0,96	0,68–0,84	0,48–0,68
Pollinium width	0,24–0,32	0,24–0,36	0,16–0,24

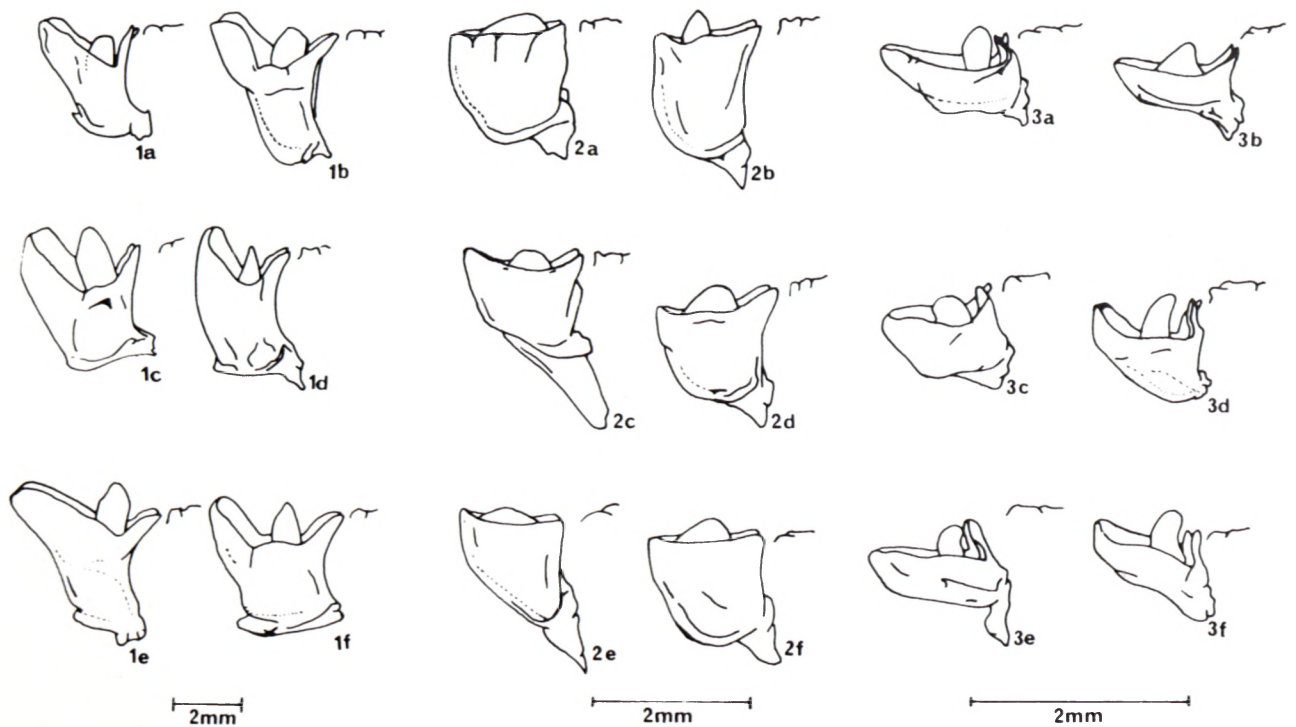


FIGURE 2.—A comparison of corona lobe variation. 1, *Asclepias cognata*: a, Hilliard & Burt 5769 (NH); b, Haygarth s.n. (NH 13661); c, Hilliard & Burt 13452 (NU); d, Hilliard & Burt 13767 (NU); e, Haygarth s.n. (NH 15735); f, Hilliard & Burt 13856 (NU). 2, *A. diploglossa*: a, Grice s.n. (NU); b, Wylie s.n. (NH 21644); c, Devenish 759 (PRE); d, Rennie 488 (NU); e, Wood 11205 (PRE); f, Barker 1421 (NBG). 3, *A. flava*: a, Hilliard & Burt 5839 (NU); b, Baur 556 (SAM); c, Glass 1503 (NBG); d, Tyson 1660 (SAM); e, Tyson 1686 (BOL); f, Wood 11219 (SAM).

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