Research note

Taxonomic notes on the genus Albertisia (Menispermaceae) in South Africa and Mozambique

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ABSTRACT

A review of the taxonomy of the genus Albertisia in South Africa and Mozambique is presented. The genus is represented in this region by a single endemic species, A. delagoensis. Nomenclature, generic and species description, geographic distribution and habitat information of A. delagoensis are provided, accompanied by photographic images of vegetative and reproductive characters. A key to the 13 African species is presented, showing that a combination of leaf morphological characters (rather than single diagnostic characters) is required to identify the species. These include the petiole length and venation pattern, lamina shape (including the base and apex), lamina dimensions and pubescence.

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1. Introduction

Albertisia Becc. (Menispermaceae) belongs to subfamily Pachygonioideae tribe Pachygoneae Miers ex Hook.f. & Thomson (1872) but was formerly included in tribe Triclisiae Diels (Diels, 1910; Forman, 1975). The absence of endosperm, which may represent a derived character state (Kessler, 1993), distinguishes this tribe from the other four tribes of Menispermaceae (viz. Anomospermeae, Tinosporeae, Fibraureae and Menispermeae). Albertisia comprises 20 species: seven in South-East Asia and 13 in Africa, only one of which extends into southern Africa. Albertisia delagoensis is endemic to South Africa and Mozambique and whilst it is widely distributed in Mozambique, it is restricted in South Africa to the extreme northern parts of KwaZulu-Natal. The species was formerly known as Epinetrum delagoensis (N.E. Br.) Diels (1910) and was only recently transferred to the genus Albertisia by Forman (1975). The genus is named in honour of L.M. D’Albertis (Van Steenis, 1948), an Italian zoologist and ethnographer from Voltri, near Genoa, Italy. He accompanied Beccari on his first expedition (1871–1874) to Indonesia and New Guinea and most of his botanical specimens from several later expeditions went to Beccari at FI. Although the morphology and anatomy have been studied by Botha (1975) as part of an unpublished thesis, and the pollen morphology by Ferguson (1975), there is no recent published information on the taxonomy of this species.

A. delagoensis is medicinally used as an anthelmintic, antimicrobial and antipyretic plant. It is also used to treat dysmenorrhea, various stomach, back and chest problems and to enhance sexual performance in men (De Wet and Van Wyk, 2007).

The aim of this short paper is to present a revision of the genus Albertisia in southern Africa, including its nomenclature, typification and geographical distribution, as well as a formal description, accompanied by photographic images of salient morphological characters and a key to the African species.

2. Materials and methods

Morphological data was gathered from field studies and herbarium specimens. The following herbaria were visited and their collections studied (abbreviated according to Holmgren et al., 1990): BLFU, BM, BOL, GRA, JRAU, K, NBG, NH, PRE, PRU, PUC, S, UPS and ZULU.

A key to the African species of Albertisia was compiled based on leaf morphology, using diagnostic character states described in the literature, as well as a study of herbarium specimens. The other 12 African Albertisia species are listed here, together with the voucher specimens studied for each of them: A. apiculata (Troupin) Forman (Solomon 6006, K); A. capituliflora (Diels) Forman (Zenker 3948, K); A. cordifolia (Mangenot & J. Miége) Forman (Guillaumet 1630, K); A. cuneata (Keay) Forman (Bernhaut 7204, K); A. exelliana (Troupin)
3. Taxonomic treatment

3.1. Albertisia


Suffrutescent shrubs or mostly lianas, often grey-pubescent. Branchlets with prominent discoid petiolar scars. Stipules absent. Leaves simple, alternate, broadly elliptic to oblong, with petioles conspicuously swollen at both ends. Male inflorescences axillary, ramiform, cymules, solitary or together, subsessile or pendunculate. Male flowers with 6 to 12 sepalas, outer 6 to 9 in 1 or 2 whorls, free, bract-like, inner 3 sepals connate into a corolliform tube: petals 3, 6 or absent, minute, fleshy; stamens 15 to 30, fused into a stalked conical synandrium, anthers with transverse dehiscence. Female inflorescence mostly reduced to a solitary flower. Female flowers with sepals and petals as in male flowers; staminodes 6; carpels 4 to 12, hairy.

3.2. Key to the African species of Albertisia based on leaf morphology

1a Leaves (and stems) pilose or pubescent; leaf venation palmate or pinnate:

2a Petioles up to 25 mm long:

3a Leaf venation palmate (lowermost side veins more prominent than upper ones); lamina elliptic to broadly oblong, base cuneate-truncate, apex mucronulate-retuse, 40–90×20–50 mm

……………………………………………………………A. delagoensis

3b Leaf venation pinnate:

4a Lamina oblong-lanceolate, base rounded-subcordate, apex acuminate, 50–160×25–55 mm

……………………………………………………………A. scandens

4b Lamina elliptic or ovate-elliptic:

5a Lamina elliptic, base rounded-obtuse, apex obtuse to bluntly acuminate, 35–70×25–45 mm

………………..A. exelliana

5b Lamina ovate-obtuse, base obtuse, apex acuminate, 30–90×15–45 mm

……………………………………………………………A. undulata

2b Petioles 30–120 mm long:

6a Leaf venation pinnate; lamina ovate, base cordate, apex acuminate, 170–260×100–150 mm

……………………………………………………………A. porcata

6b Leaf venation palmate:

7a Lamina densely pubescent:

8a Leaf apex acuminate, base deeply cordate, lamina elliptic, up to 180×70 mm

……………………………………………………………A. ferruginea

8b Leaf apex long-acuminate, base cordate, lamina ovate, 90–200×60–180 mm

……………………………………………………………A. villosa

7b Lamina pubescent along the veins only:

9a Leaf base truncate, apex acuminate, lamina ovoid-deltoid, up to 70×40 mm

……………………………………………………………A. mangenotii

9b Leaf base cordate:

10a Leaf apex acuminate, lamina elliptic-ovobovate, 150–250×55–130 mm

……………………………………………………………………A. capituliflora

10b Leaf apex acute, lamina ovate-elliptic, 80–150–50–80 mm

……………………………………………………………………A. cordifolia

1b Leaves (and stems) glabrous; leaf venation pinnate:

11a Petiole 60–110 mm long; leaf base attenuate, apex long acuminate, mucronate; lamina ovate-elliptic, 45–90 mm×20–45 mm

……………………………………………………………A. cuneata

11b Petiole <40 mm long:

12a Leaf base cuneate, apex acuminate, lamina elliptic, 70–110×35–55 mm; petiole 10–30 mm

……………………………………………………………………A. glabra

12b Leaf base obtuse, apex round and abruptly apiculate (the tip 10 mm long), lamina elliptic-ovobovate, 40–90×30–50 mm, petiole 10–15 mm long

……………………………………………………………………A. apiculata
Fig. 1. *Albertisia delagoensis*. (a–g) male flower: (a) male flower, (b) bracts, adaxial and abaxial view, (c) first whorl of sepals, adaxial and abaxial view, (d) second whorl of sepals, adaxial and abaxial view, (e) inner sepal, adaxial and abaxial view, (f) stalked synandrium with 18 horizontally dehiscent anther locules above the petals, (g) petal, abaxial view (note the inflexed base); (h–m) female flower: (h) female flower, (i) outer sepal, adaxial view, (j) inner sepal, adaxial view, (k) petal, adaxial view, (l) gynoecium, (m) carpel; (n, o) stem: (n) node of young stem, (o) stem bearing prominent discoid petiole scar; (p) seed; (r–u) leaf variation: (r) elliptic leaf shape with mucronulate apex, (s) broadly oblong leaf shape with retuse apex, (t–u) oblong leaf shape. Vouchers: (a–g, o, s) Retief 818 (PRE); (h–m) Gerstner 6858 (PRE); (n) Mauve & Verdo 9 (PRE); (p–q) Mogg 3011 (PRE); (r) Mogg 27201 (PRE). Scale bars: (a–e, h–j, l)=1 mm; (f–g, k, m)=0.7 mm; (n–q)=4 mm; (r)=10 mm.
3.3. *Albertisia delagoensis*


Rhizomatous gregarious shrublets, scandent shrublets or lianes, up to 2 m high. Stems green and densely pubescent when young, becoming woody and glabrous with age, bearing discoid leaf scars. Leaves alternate; dark green on adaxial side, greyish on abaxial side, coriaceous, both sides slightly hairy, veins densely pubescent on both sides, with whitish colour; lamina elliptic to broadly oblong, up to 40–90 × 20–50 mm, apex obtuse to rounded, retuse or mucronulate, base cuneate when elliptic, truncate when oblong, margin entire; venation palmate, with 3 to 5 prominent veins from base; midrib, lateral veins and tertiary reticulate venation sunken above, prominently raised below; petiole up to 25 mm long, densely pubescent. Male flowers in 1 to 3-flowered axillary cymes; pedicel 2.0–3.5 mm long, bracts linear to lanceolate, 0.6 mm long, densely pubescent on abaxial side; sepals lanceolate or ovate, 9 (or 6), in 3 (or 2) whorls, slightly fleshy, abaxially densely pubescent, those of the outer two whorls free, those of innermost whorl fused

Fig. 2. Geographical distribution of *Albertisia delagoensis*.
halfway up; sepal of outer whorl small, 0.7 × 0.4 mm, those of middle
whorl larger, 1.1 × 0.4 mm and those of inner whorl largest, 3 × 1.4 mm; petals 6, in 2 whorls, free, fleshy, much smaller than sepals, 0.5 × 0.9 mm, transversely oblong-reniform, inflexed at the base, abaxially pilose, adaxially glabrous; synandrium stalked, up to 5.5 mm long, 18–24-locular in 6–8 vertical rows, exstrose, anthers horizontally dehiscent. Female flowers axillary and solitary; pedicel 1.5–3.5 mm long; bracts, sepals and petals as in male flower; carpels 5(6), free, 1.8 mm long, woolly; style extended and undivided. Fruit sessile, el-
ipsoid drupes, radiating from margin of a swollen carpophore, on peduncle 4–5 mm long, brightly orange when ripe, pubescent, 22 × 15 mm; endocarp not horseshoe-shaped, parchment-like, wrinkled; clydele absent. Seed obovoid-oblong, 8–11×4–5 mm. Flow-
inging time July to September. Fig. 1.

3.3.1. Diagnostic characters

Albertisia delagoensis differs from other species in the shrubby habit with generally non-twining branchlets, the densely pubescent leaves and the palmate (not pinnate) leaf venation with the lower-
most side veins more prominent than upper ones (Fig. 1r–u). It also differs from all other species in the petals (of male and female
flowers) that are markedly tomentose (Fig. 1d, e) and
neither glabrous, nor pubescent, as in all other species.

3.3.2. Distribution and habitat

A. delagoensis is endemic to Mozambique and South Africa and
is locally common at several localities (Fig. 2). It is widely distributed in the coastal areas in Mozambique but in South Africa is limited to
the north-eastern parts of KwaZulu-Natal, which include the follow-
ing vegetation types: Thembelands bushveld, Maputaland wooded
grassland and Maputaland coastal belt (Mucina et al., 2005). It
grows in well-drained sandy soil, in open grassy fields or in open
spaces between trees.

3.3.3. Additional specimens examined

South Africa. KWAZULU-NATAL: 2632 (Bela Vista): Ndumu Game Reserve (−CD), Pooley 520 (K, NH), Tinley 989 (K);
Thembelands Park (−CD), Van Wyk & De Wet 4075 (ZULU),
Ward 1006 (NH); Apiesdraai (−CD), Botha 66 (PRE), 315 (PRE), 898 (PRE, PUC); Kwagwanase, Sihangwane next to road (−CD), Van
Greuning 620 (NH, PRE); Kosi Bay (−CD), Botha 315 (BLFU, PUC),
Venter 1153 (ZULU). 2732 (Umbombo): Sihangwane (−AB), Botha
3510 (PUC), Retief 818 (PRE), Otobotsini, near Pont on Matupu road
(−AB), Vahrmeijer & Tölkken 989 (K, NH, PRE); Phelandaba, 20 km
SW from Manguzi (−BA), Botha 3501 (PUC) Kzwazulu, in old field
near Eucalyptus wood plots (−BB), Felton & Thornhill 350 (PRE),
Manzengwenya, near inspection quarters (−BB), Moll 4863 (K, NH, PRE); Mbazwane, along road to Sibaya, 15 km west of Sibaya (−BC),
Van Wyk 1410 (PUC); Sibaya Lake (−BC), Botha & Van Wyk 1202
(PUC), Venter 6551, 6562, 6563, 6564 (ZULU); False Bay Park, Western
boundary near main gate (−CD), Gerstner 4753 (K, NH, PRE), 6858 (PRE),
Ward 7140 (NH, PRE); Sodwana Bay National Park (−DA), Ward
3499 (K, NH, PRE); Matakini flats, Gerstner 3690 (NH, PRE); Tongol
(−DA), Vahrmeijer & Tölkken 260 (PRE). 2832 (Mtubatubba): 10 km from
Hluhluwe between Hluhluwe and False Bay (−AB), Moll 2817 (K, PRE);
Nhlabisa (−AB), Gerstner 6859 (PRES); St. Lucia (−AD), Lansdell s.n. (NH).

Mozambique. 1540 (Nampula): Nacala (−AB), Torre & Paiva
12124 (PRES), 11642 (K). 1736 (Zambézia): Macuze, 1.8 km from
Namacurra (−AC), Grandvaux Barbosa & Carvalho 3884 (K). 1737
(Zambézia): Maganja da Costa (−CC), Grandvaux Barbosa & Carvalho
4214 (K). 1835 (Zambézia): Mopeia (−BA), Correia & Carvalho
16725 (LISC, LMA). 1934 (Beira): Dondo (−BD), Cecil 261 (K). 2335
(Inhambane): Maxixe (−CD), Mendoça 18 (BM, LMU); Régulo
Vilão, 23 km from Naburi (−CD), Grandvaux Barbosa & Carvalho
4331 (K). 2532 (Maputo): Marracuene, Ricatla (−DA), Junod 182
(LISC, LMA), Maputo [Lourenço Marques] (−DC), Pimenta s.n.
(LISC), Grandvaux-Barbosa 7730 (PRES), Mendoça 824 (BM), Moss
7004 (K), Torre s.n. (BM), Maputo [Lourenço Marques], Kadodo,
Polane (−CD), Hornby 824 (K); Maputo [Lourenço Marques],
Vila Luiza (−DC), Grandvaux Barbosa & De Lemos 7961 (K); 3 km
from Maputo on the Ingwawuma road (−CD), Botha 903 (PUC),
Inhaca Island, Nhokha (Ronga) (−DC), Moggi 26992 (K), 27201 (K),
27401 (K), 28395 (JRAU, K), 30116 (K, PRE), Mauve & Verdo 9
(K, PRE); Reserva de Caca de Maputo, at viewpoint near “Vale dos
Elephantes” (−DC), Jansen & De Koning & De Wilde 7 (K). 2832
(Bela Vista): Bela Vista (−BC), Grandvaux Barbosa & De Lemos
7802 (K), Torre 2112 (BM); entre Zitunde ea Ponta do Ouro (−DD),
Mendoça 2899 (BM).

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