

## Notes on African plants

VARIOUS AUTHORS

### ACANTHACEAE

#### NOTES ON SOUTHERN AFRICAN SPECIES OF *JUSTICIA* L.

As the result of a revision of *Justicia* L. in southern Africa, to be published in the *Flora of southern Africa* (FSA), the number of species represented in the area has been reduced from 30–40 [Dyer, R. A., *Genera* 1: 598 (1975)] to 22 with six subspecies. One species and one subspecies are new and are here described. A list of name changes of the species in the area is given, with an abridged synonymy containing only basionyms and names until recently considered to be those of distinct species. A full synonymy will be given in the FSA. Changes in rank are also given.

***Justicia parvibracteata* Immelman, sp. nov.**, *J. protractae* (Nees) T. Anders. subsp. *rhodesianae* (S. Moore) Immelman affinis, sed planta minor, bracteis reductis, triangularibus differt.

Suffrutex vel herba perennis, 0,12–0,5 m alta, omnino subtiliter et dense puberula. *Folia* 4–25 × 1–10 mm, anguste vel late lanceolata, apice late acuto vel obtuso, basi cuneata, margine interdum glanduloso, petioli graciles, 0–6 mm longi. *Inflorescentia* 1 (–2) floribus in cyma. *Bractea bracteolaeque* reductae, subulatae vel triangulares, c. 2 × 1 mm. *Calyx* lobis 5, subaequalibus, anguste lanceolatis. *Corolla* (tubus et labium superum) (4–) 5–8 mm longa, alba, lineis testaceis in palato. *Capsula* quadriseminalis, usque ad 8 mm longa, delicatula, subtiliter puberula. *Pollen* bicolporatum, sexinio fasciato.

TYPE.—Cape Province, 2722 (Olifantshoek): in Toto Mountains, kloof, in rock crevices and under shrubs (–DD), Tölken & Schlieben 1176 (PRE, holo.!).

Shrublet or perennial herb, 0,12–0,5 m high, all parts minutely and densely puberulous. *Leaves* 4–25 × 1–10 mm, sometimes glandular on margins, narrowly to broadly lanceolate, apex broadly acute to obtuse, base cuneate; petiole slender, 0–6 mm long. *Inflorescence* of 1 (–2) flowers per cyme, sessile, scattered in leaf axils. *Bract and bracteoles* reduced, subulate to triangular, c. 2 × 1 mm. *Calyx* of 5 subequal, narrowly lanceolate lobes. *Corolla* (tube and upper lip) (4) 5–8 mm long, white with dark red lines on palate. *Capsule* 4-seeded, cylindrical, with a stipe, puberulous, delicate, up to 8 mm long. *Pollen* 2-colporate, with sexine in areoles on either side of the colpus.

Endemic to the Northern Cape, where *J. protracta* does not occur.

***Justicia orchioides* L.f. subsp. *glabrata* Immelman, subsp. nov.** a subspecie typica omnibus partibus sine pilis longis rectis albo-opacis differt.

Fruticulus lignosus, 0,14–0,6 m altus; caules crassi, nodosi, interdum spinescentes, partes omnes

glabratae vel pilis brevibus vel papillis crassis pyramidalibus, sine pilis candidis ut in subsp. *orchioide*; cortex cinereus, rimosus sulcatus; rami juvenes subherbacei. *Folia* ovata vel lanceolata, sessilia, 3,5–13 × 1,5–7 mm, apice obtusa vel acuta, basi cuneata, coriacea; costa prominens sed nervi laterales obscuri. *Inflorescentia* cymarum remotarum, unaquaeque ad florem solitarium pedunculatum axillarem reducta. *Pedunculi et pedicelli* validi, 1–10 mm longi. *Bractea* nulla. *Bracteolae* duae, triangulares, 1–2 mm longae, basi pedunculum transverse junctae. *Corolla* (tubus et labium superum) 7–10 mm longa, lactea striis testaceis palato. *Capsula* uniseminalis, glabrata, dura, usque ad 17 mm longa. *Pollen* bicolporatum, sexinium fasciatum.

TYPE.—Cape Province, 3326 (Grahamstown): between Piggots Bridge and Hounslow, 400 m, roadside on dry clay soil (–AB), A. Jacot Guillarmod 6902 (PRE, holo.!, GRA!).

Woody shrublet, 0,14–0,6 m high; stems thick, gnarled, may become spiny; all parts glabrous or with short hairs or with stout pyramidal papillae, without white-opaque hairs as in subsp. *orchioides*; bark grey, cracked and furrowed; young branches subherbaceous. *Leaves* ovate to lanceolate, sessile, 3,5–13 × 1,5–7 mm, apex obtuse to acute, base cuneate, leathery; midrib prominent but side veins not visible. *Inflorescence* of scattered cymes, each reduced to a single pedunculate flower. *Peduncles and pedicels* stout, 1–10 mm long. *Bract* absent. *Bracteoles* 2, triangular, 1–2 mm long, joined at base across peduncle. *Corolla* (tube and upper lip) 7–10 mm long, cream with red striping on palate. *Capsule* 1-seeded, glabrous, hard, up to 17 mm long. *Pollen* 2-colporate, sexine banded on either side of the colpi.

Very like the typical subspecies except for the lack of the characteristic long stiff white-opaque hairs. The typical subspecies is furthermore confined to the area around Port Elizabeth, whereas subsp. *glabrata* is widespread in the eastern half of the Karoo and the southern Cape.

The type of subsp. *orchioides* is a Thunberg specimen at UPS. Although I have seen it only on a microfiche, which does not show fine detail, and do not know precisely where it was collected, information on the hairs received from UPS indicates that at least the right hand plant on the sheet belongs with the Port Elizabeth subspecies. I have therefore provided a name and a description for the more widespread subspecies for which no existing name was found.

*J. orchioides* and *J. cuneata* have often been confused, both in the literature and in herbaria, and the

characters used to distinguish them in the *Flora Capensis* key are not reliable. The two species are nevertheless quite distinct, with *J. cuneata* having hooded flowers longer than 10 mm and the sexine of the pollen areolate, while in *J. orchioides* the flowers are 10 mm or shorter, not hooded, and the sexine of the pollen forms a raised band along the smooth area on either side of each colpus.

***Justicia betonica* L., Sp. Pl. 15 (1753).** Type: Ceylon [Sri Lanka], *Hermann* vol. 3, fol. 2 (BM; photo at PRE!).

*J. trinervia* Vahl, Enum. 1: 156 (1804). Type: E India, *Röttler s.n.* (C).

*Adhatoda variegata* var. *pallidior* Nees in DC., Prodr. 11: 385 (1847). *Justicia pallidior* (Nees) C.B. Cl. in Fl. Cap. 5,1: 58 (1912). Type: Transvaal, Apies River, *Burke* 514 (K!).

*A. cheiranthifolia* Nees in DC., Prodr. 11: 387 (1847). *Justicia cheiranthifolia* (Nees) C.B. Cl. in Fl. Cap. 5,1: 58 (1912). Type: Transvaal, Magaliesberg, *Burke s.n.* (K!).

*Justicia betonicoides* C.B. Cl. in Fl. Trop. Afr. 5: 184 (1900), in Fl. Cap. 5,1: 58 (1912). Syntypes: Sudan, Jur, Jur Ghattas, *Schweinfurth* 1423; Gabon, Bongo, *Schweinfurth* 2543; French Equatorial Africa, Mittu (Mittou), *Schweinfurth* 2793; Kenya, along Gilgil River, north of Lake Naivashu, 6–7000 ft, *Scott-Elliott* 6647; Tanzania, Tanganyika Plateau, at Fort Hill, 3500–4000 ft, *Whyte s.n.*

***Justicia petiolaris* (Nees) T. Anders.** in J. Linn. Soc., Bot. 7: 39 (1864). *Adhatoda petiolaris* Nees in DC., Prodr. 11: 402 (1847). Syntypes: Natal, Umzimvubu River, wooded rocky shaded valley and ravine by river, below 1000 ft, *Drège s.n.* (K!; P!); Natal, Umgeni, on hills, 200 ft, *Drège s.n.* (P!).

(a). subsp. *petiolaris*.

(b). subsp. *bowiei* (C. B. Cl.) *Immelman*, stat. nov.

*J. bowiei* C.B. Cl. in Fl. Cap. 5,1: 59 (1912). Syntypes: Cape Province, near Kei Mouth, in woods, 300 ft, *Flanagan* 882 (BOL!; GRA!; PRE; SAM!); Cape Province, moist situations in George, Uitenhage and Albany Divisions, *Bowie s.n.* (K!); no locality, *Guthrie* 4711 (BOL!).

*J. mutica* C.B. Cl. in Fl. Cap. 5,1: 61 (1912). Type: Cape Province, wooded situations in Uitenhage and Albany Districts, *Bowie s.n.* (K!).

(c). subsp. *incerta* (C.B. Cl.) *Immelman*, stat. nov.

*J. incerta* C.B. Cl. in Fl. Cap. 5,1: 66 (1912). Type: Transvaal, bushveld between Elandsrivier and Klippan, *Rehmann* 5058.

The distribution of the subspecies is unusual: it is found in N Natal and in the Nylstroom-Thabazimbi-Rustenburg area, with a single record from the central Kruger National Park.

***Justicia protracta* (Nees) T. Anders.** in J. Linn. Soc., Bot. 7: 41 (1864). Syntypes: Cape Province, between shrubs in field by Zwartkops River, *Ecklon* 456 (BOL!; MEL!); Cape Province, Bosmans River Mountains, *Ecklon s.n.*; near Grahamstown, *Ecklon s.n.* (S!); between Great Fish River and Ceded Territory, *Ecklon s.n.* (PRE!; S!).

*Gendarussa protracta* Nees in Linnaea 15: 371 (1841), partim excl. syn. Thunb.

(a). subsp. *protracta*.

*J. kraussii* C.B. Cl. in Fl. Cap. 5,1: 62 (1912). Syntypes: Natal, between Mlazi River and Durban Bay, *Krauss* 61 (BM!; K!); Natal, Inanda, *Wood* 423; Natal, Zululand, *Gerrard* 1272 (BM!; K!).

*J. kraussii* var. *florida* C.B. Cl. in Fl. Cap. 5,1: 62 (1912). Type: Natal, Inanda, *Wood* 566 (BM!).

*J. pulegioides* C.B. Cl. in Fl. Cap. 5,1: 62 (1912) partim excl. syn. *Chaetacanthus persooni* Nees. Syntypes: Cape Province, Uitenhage, *Ecklon & Zeyher* 436; Cape, Komadagga, *Burchell* 3300 (G–DC!); Cape Province, Komgha, *Flanagan* 725 (NH!; GRA!; PRE!; SAM!); Natal, Durban Flats, *Wood* in *Herb. Norm. Aust.-Afr.* 1019 (BOL!; PRE!; SAM!); Natal, Inanda, *Wood* 718 (PRE!; NH!), *Wood* 309; Natal, Durban Bay, *Krauss* 304; Natal, Pondoland, between St Johns River and Umsikaba River, *Drège s.n.*; Transvaal, Houtbosch Rand, *Schlechter* 3324; without localities, *Peddie s.n.*, *Sanderson* 433, *Grant s.n.*

*J. woodii* C.B. Cl. in Fl. Cap. 5,1: 64 (1912). Type: Natal, Noodsberg, *Wood* 112 (K!).

Probably the most common of the southern African species, *J. protracta* subsp. *protracta* is found in the eastern half of the country as far south as Port Elizabeth. In the northern Transvaal as well as in SWA/Namibia and Botswana it is largely replaced by subsp. *rhodesiana*, though the transition is gradual. The great range in pubescence and leaf size and shape has led to the description of numerous species and subspecies, but examination of a larger number of specimens shows that these form a continuous range rather than discrete entities.

(b). subsp. *rhodesiana* (S. Moore) *Immelman*, stat. nov.

*J. rhodesiana* S. Moore in J. Bot., Lond. 51: 188 (1913). Syntypes: Botswana, Mahalapye, *Rogers* 6069 (BOL!; SAM!); Zimbabwe, Bulawayo, *Rogers* 5740 (BOL!; SAM!).

Differs from the typical subspecies in having all parts puberulous rather than pilose. The distribution is also more northerly, as it occurs in SWA/Namibia, Botswana and the northern Transvaal, while subsp. *protracta* is found in the southern and eastern Transvaal, Natal and the eastern Cape. The transition, however, is not an abrupt one.

***Justicia cuneata* Vahl, Symb. bot. 2: 10 (1790–94), Enum. 1: 163 (1804).** Type: Cap. bon. spei (Cape of Good Hope), *Sparrman s.n.* in herb. Dahl (C!).

(a). subsp. *cuneata*.

(b). subsp. *latifolia* (Nees) *Immelman*, comb. et stat. nov.

*Gendarussa orchioides* var. *latifolia* Nees in Linnaea 15: 369 (1841). Type: Cape Province, Kanaquasberg, *Ecklon s.n.* (BOL!); Cape, Clanwilliam, between Olifantsrivier and Brakfontein, *Ecklon & Zeyher s.n.* (S!; MEL!).

(c). subsp. *hoerleiniana* (P. G. Mey.) *Immelman*, stat. nov.

*J. hoerleiniana* P. G. Mey. in Mitt. bot. StSamml., Münch. 2: 300 (1957). Type: SWA/Namibia, Alicetal, Pomona (probably on the coastal plain in the Lüderitz District), *Dinter* 6401 (BOL!; PRE!).

For the differences between *J. cuneata* and *J. orchioides*, see under *J. orchioides* (above).

Subsp. *cuneata* occurs only around Port Elizabeth, and is glabrous, while subsp. *latifolia* is relatively widespread in Namaqualand and the western half of the Karoo, with one record from Port Elizabeth, and is densely and minutely puberulous on leaves and calyx. Subsp. *hoerleiniana* is confined to a small area on the southern coast of SWA/Namibia, and is also

puberulous, but the hairs have very swollen, anvil-shaped heads instead of being pointed as in subsp. *latifolia*.

***Justicia matammensis*** (Schweinf.) Oliv. in Trans. Linn. Soc. Lond. 29: 130 (1875). Type: E Sudan, Gallabat, Matamma (Metemma), *Schweinfurth 130c* (K!).

*Achatoda matammensis* Schweinf. in Verh. zool.-bot. Ges. Wien. 18: 674 (1868).

*J. exigua* S. Moore in J. Bot., Lond. 38: 204 (1900). Type: Zimbabwe, Bulawayo, *Rand 389* (BM!).

### *Species insufficiently known or excluded*

*Justicia brycei* C.B. Cl. in Fl. Cap. 5,1: 67 (1912). Type: Lesotho, near the summit of Machacha, 10,000 ft, *Bryce s.n.* (K!). The specimen belongs to ***J. elegantula*** S. Moore, but this species does not occur further south than Zimbabwe. Also, no southern African species is known to grow at such high altitudes. Probably, as Jacot Guillarmod suggests in her *Flora of Lesotho*, the locality on the specimen is incorrect, and should possibly be Macheke, Rhodesia (Zimbabwe).

*Rhytiglossa rubicunda* Hochst. in Flora (1845): 71 (1845); C.B. Cl. in Fl. Cap. 5,1: 67 (1912). Type: Cape Province, Tsitsikamma Forest, *Krauss 1128* (K!). Placed tentatively in *Justicia* under 'species insufficiently known', but without formal transfer, by C.B. Clarke. Type not found, nor does the description fit any *Justicia* species known from near that area.

*Justicia pulegioides* subsp. *late-ovata* C.B. Cl. in Fl. Cap. 5,1: 62 (1912). Type: Cape Province, on the rocks of Zwartwater Poort, *Burchell 3405* (K!), *3364* (K!). The specimens belong to ***Siphonoglossa tubulosa*** (Nees) Benth. ex Lindau.

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