

THE CORRECT NAME FOR *DROSERA LONGISCAPA* AND THE MYSTERY OF
D. MADAGASCARIENSIS FROM SOUTH AFRICA

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Keywords: *Drosera curvipes*, *Drosera nidiformis*, *Drosera collinsiae*, Droseraceae, taxonomy.

Summary: *Drosera longiscapa* and *D. madagascariensis* var. *major* are undoubtedly conspecific with Planchon's *D. curvipes*, and hence constitute younger, heterotypic synonyms. *Drosera madagascariensis* s. str. does not occur in the largest part of South Africa, nearly all records previously assigned to that species from former Transvaal and Natal regions belong to *D. curvipes* (or *D. nidiformis* and *D. collinsiae*, respectively).

The amended description provided here is extending published knowledge on the species (Planchon 1848; Burt Davy 1926; Debbert 2002). It is based on own observations of plants *in situ* and in cultivation and on careful studies of herbarium specimens, including type material of all mentioned taxa (herbaria consulted: B, BM, G, K, M, MO, PRE).

***Drosera curvipes* Planch.** - Figure 1

Publication: Ann. Sci. Nat. 3, ser. 9: 196 (1848)

Synonyms: = *Drosera longiscapa* Debbert, = *D. madagascariensis* var. *major* Burt Davy, = *D. ramentacea* var. *curvipes* (Planch.) Sond.

Perennial herb, forming short stems, perennially growing, but usually dying back to the roots in regions with cold winters. Stems up to 5 cm long and 1-1.5 mm wide, covered with remnants of dead leaves from previous season's growth; internodes short, 0.1-1 mm long. *Leaves* of active growth (4)6-10, (1.8)2.5-4.5 cm long, long-petiolate, pale green in shade, tinged bronze in full sun, phyllotaxis alternate, leaves upright when young, then held at about 35° from the main axis (Debbert 2002), old leaves paralleling the stem; stipules papery, translucent brownish, triangular, c. 2-4 mm long, divided into 6-8 segments with acute tips; petiole linear, 10-28 mm long and up to 1 mm wide, with indumentum of short white hairs; lamina narrowly obovate, upper surface with carnivorous tentacles (tentacles base and stalk translucent white, only the capitate head red, a rather rare feature only found in a handful of *Drosera* species; usually the entire tentacle is red), lower surface with indumentum of appressed, simple, white hairs. *Scapes* 1(-3), erect from strongly curved base, terete, 1-1.5 mm wide, up to 30 cm long (Debbert 2002), with scattered, patent, simple white hairs along the entire length (caducous and easily rubbed off, thus not visible in older specimens) and scattered glands in the upper part; peduncle with up to 7 flowers; pedicels 5-6 mm long, covered with scattered glands and patent white hairs. *Sepals* 5, basally connate, narrowly elliptical with acute apex, up to 4 mm long and 1.5 mm wide, indumentum of calyx identical to that of the pedicels. *Petals* 5, free, pale to dark pink, (narrowly) obovate with obtuse apex, up to 6 mm long and 4 mm wide. *Seeds* black, 0.45-0.50 mm long, oblong to narrowly ellipsoid, testa shiny, reticulate, with very regular, narrowly transverse rectangular testa cells.

Phenology: flowering from (October) November to February.

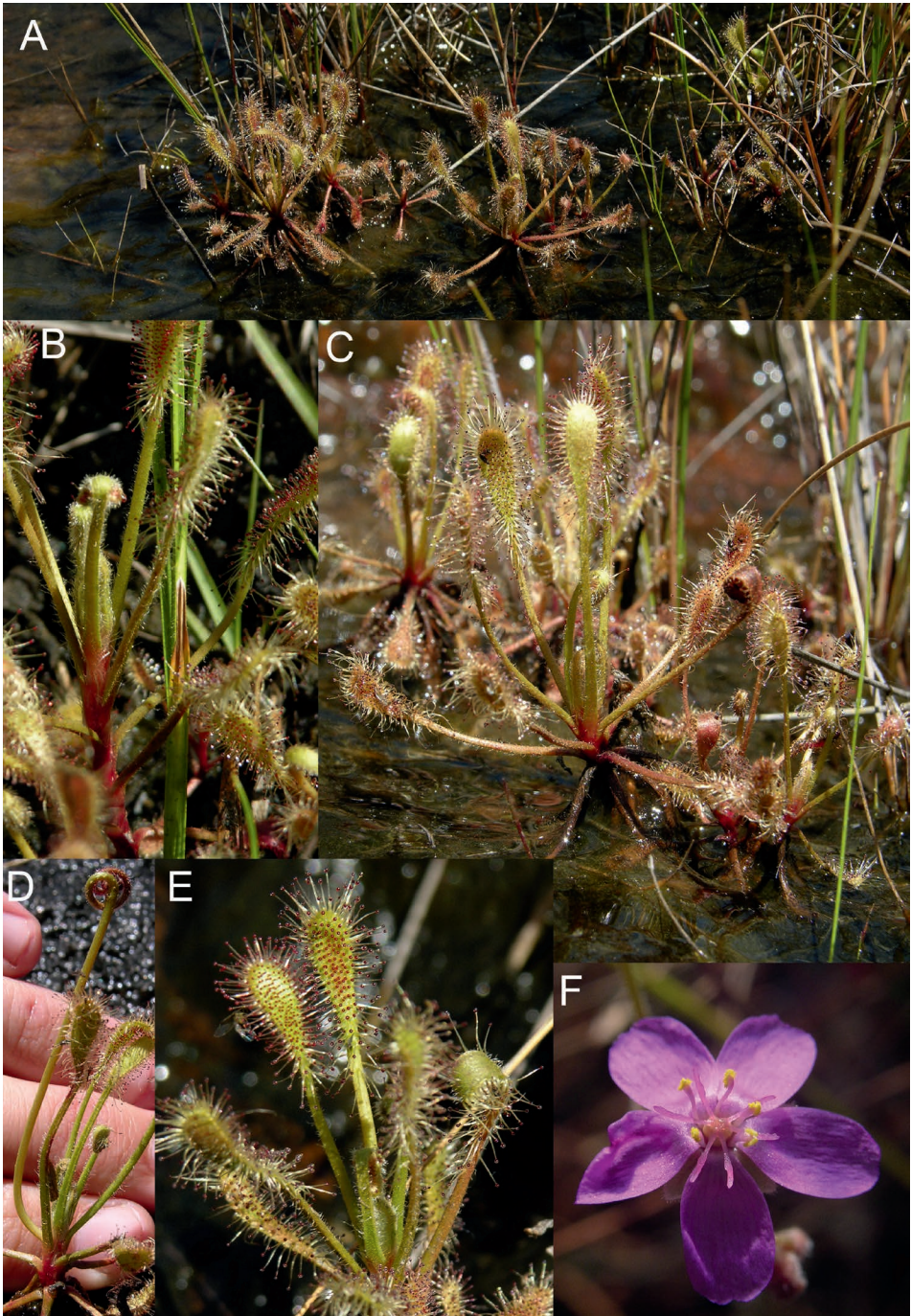


Figure 1: *Drosera curvipes*. A. habit. B. stem and stipules. C. almost stemless specimens. D. the arcuately curved scape. E. leaves. F. Flower. A, C, D from Magaliesberg, North-West Province; B, E near Pretoria, Gauteng Province; F from cultivated specimen.

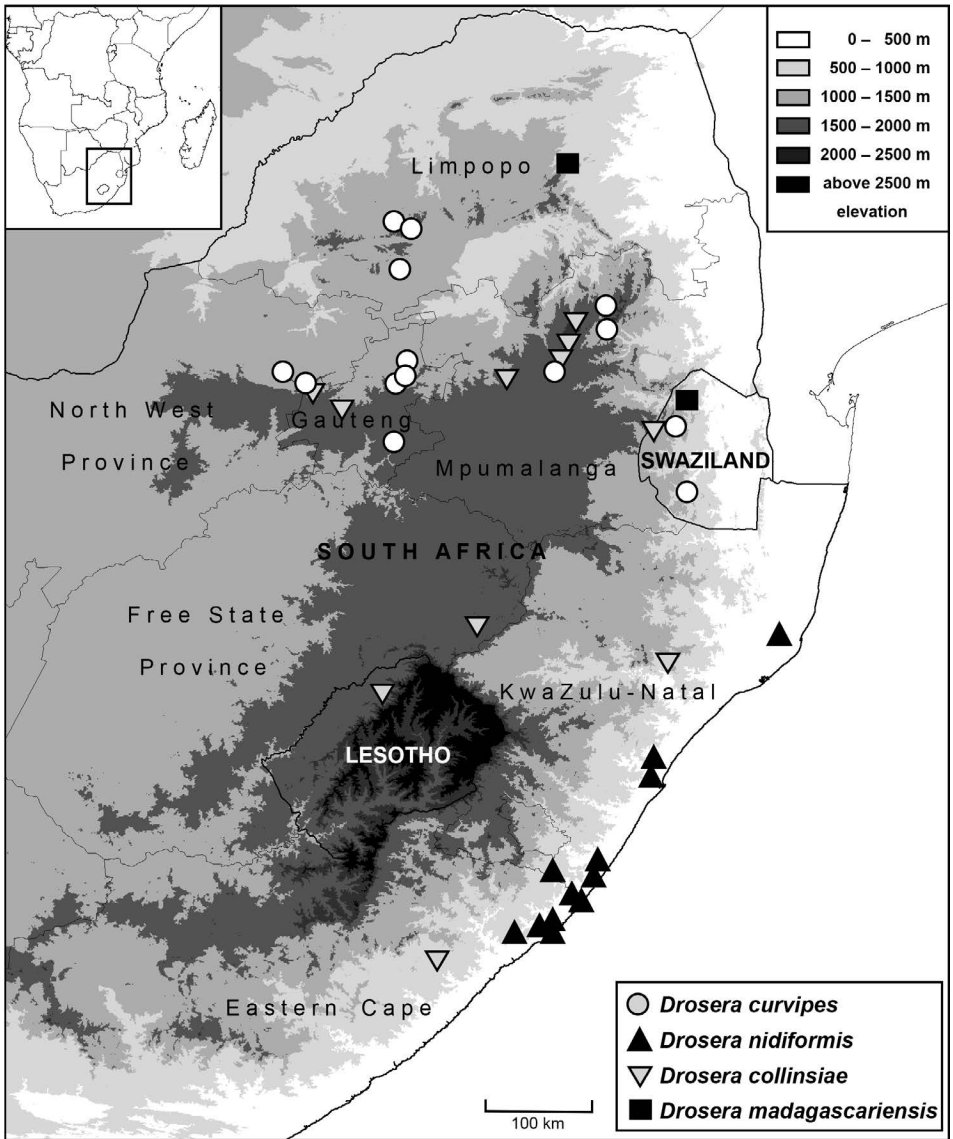


Figure 2: Distribution of *Drosera curvipes* and other taxa formerly erroneously assigned to “*D. madagascariensis*” in north-eastern South Africa.

Etymology: The Latin epithet “*curvipes*” means “curved base” and refers to the base of the flower scape of this species, which is conspicuously arcuated upwards (a character shared with the conatural *D. madagascariensis* DC., however). Not to be confused with the similar sounding name *Drosera curviscapa* T.M.Salter (“curved scape”), for a rosetted plant from the Western Cape Region of South Africa, which is a synonym of *D. aliciae* Raym.-Hamet.



Figure 3: Colony of *Drosera curvipes* growing in *Sphagnum* cushions at a spring in grassy vegetation near Pretoria.

Distribution: North-eastern South Africa (Gauteng, North West, Limpopo, and Mpumalanga Provinces, i.e. the former “Transvaal”) and Swaziland (Shiselweni and Hhohho Districts). Especially in the northern Highveld and the Magaliesberg mountain range (Fig. 2).

Habitat: At elevations from ca. 1000-2000 m. On red sandstone escarpments (Magaliesberg quartzite) in open, wet, nutrient-poor grassland vegetation of swampy patches (“vleis”). In bogs, around perennial springs, waterfalls, or in seepage habitats, growing in *Sphagnum* cushions or in wet peaty soils, sometimes submerged in shallow water (Fig. 3). In South Africa frequently associated with *Utricularia welwitschii* Oliv., *Genlisea hispidula* Stapf, species of *Xyris*, *Lobelia*, Cyperaceae, Ericaceae, and Restionaceae. Often sympatric with *Drosera collinsiae* N.E.Br. in Burt Davy, sometimes also with *D. burkeana* Planch.

Taxonomic affinity: *Drosera curvipes* is closely related to *D. madagascariensis*, as evident from a similar, stem-forming habit, the proportionally very long inflorescence scapes with few-flowered cymes, which are subglabrous in both species (very sparsely covered with simple white hairs and short-stalked, translucent glands in the upper part), and styles which usually are undivided and which bear subulate stigmas in both species (Fig. 4).

Drosera nidiformis Debbert is similar in terms of leaf shape, but without a stem, and with a densely glandular scape. Plants which are morphologically very similar to *D. curvipes*, however with much redder coloration, have been found in Zambia (A. Fleischmann & F. Rivadavia, pers.



Figure 4: Comparison between *Drosera curvipes* and similar species of north-eastern South Africa. Images in each row of same scale. Photo of *D. nidiformis* in top row by Christian Dietz, all other by Andreas Fleischmann.

Table 1. Comparison of *Drosera curvipes* with similar species.

character	<i>D. curvipes</i>	<i>D. madagascariensis</i>	<i>D. collinsiae</i>	<i>D. nidiformis</i>	<i>D. burkeana</i>
habit	stem-forming, old leaves patent	stem-forming, old leaves reflexed	acaulescent, leaves upright	acaulescent, leaves upright	acaulescent, flat rosetted
lamina shape	narrowly obovate	elliptical to broadly elliptical	(broadly) obovate	narrowly cuneate to oblong	transversely broadly elliptical to circular
scape	much exceeding the leaves	much exceeding the leaves	not much exceeding the leaves	much exceeding the leaves	much exceeding the leaves
indumentum of scape (upper part)	subglabrous, with sparse simple hairs and glands	subglabrous, with sparse simple hairs and glands	(dense) simple white hairs and sparse glands	densely glandular	densely glandular
petals	(narrowly) obovate, not overlapping, pink	(narrowly) obovate, overlapping to not overlapping, pink	obovate, overlapping, reflexed at anthesis, pink	obovate, slightly overlapping, pink	obovate, slightly overlapping to not overlapping, white or pink
stigma	usually undivided, subulate	usually undivided, subulate to very narrowly spatulate	divided, bifid to flabellate	divided, bifid to multifid, subulate	undivided to apically bifid, very narrowly spatulate
seed	oblong to ellipsoid, black, testa narrow transversely to rectangular reticulate	fusiform, brown, testa rectangular reticulate	oblong to ellipsoid, black, testa isodiametrically reticulate	broadly fusiform, black, testa rectangular reticulate	ovoid to oblong, black, testa inconspicuously reticulate

obs.), these turned out to be hybrids between *D. affinis* Welw. and *D. madagascariensis*, however, which grew in close proximity to both parent species and which had reduced seed fertility (pers. obs.). In herbarium collections, specimens of *D. curvipes* have frequently been misidentified as *D. madagascariensis* (for obvious reasons), but also with *D. collinsiae*, *D. burkeana*, and *D. natalensis* Diels – to me inapprehensible, because the latter three are very distinctive, and can easily be told apart by the set of characters provided in the identification table above (Table 1).

Records of *D. madagascariensis* from the northern part of South Africa (“Transvaal”, “Natal”), e.g. by Burt Davy (1924, 1926), Diels (1906), Obermeyer (1970), Ross (1972), Compton (1976), Retief & Herman (1997), Nkonki (2003), actually refer to *D. curvipes* (or above-mentioned *D. nidiformis*, *D. collinsiae*, and *D. burkeana*; In particular *D. nidiformis* holds responsible for erroneous records of “*D. madagascariensis*” from the Wild Coast (Transkei) of Eastern Cape Province and from KwaZulu-Natal Province). *Drosera madagascariensis* is a more tropical species, and seems to be fully absent at these higher latitudes (above ca. 26 degrees South) in South Africa. There is only a single confirmed herbarium record from northernmost Limpopo Province (at 23 degrees South; *Pott 4609!*), but the species is also found in northern Swaziland (Mbabane district, ca. 26 degrees South; e.g. *Compton 30503!*, and photographs of plants from that region on the web; Fig. 2); it is more common in northern Botswana, Zimbabwe and northern Mozambique (from ca. 20.5 degrees South northwards).

Burt Davy (1926) was obviously aware that the plants of “*D. madagascariensis*” occurring in northern South Africa differed from typical plants (*sensu* DeCandolle), as e.g. found on Mada-

gascar, in having larger laminae and leaves that do not become reflexed towards the stem with age (“Lvs. 8 cm [ong] tufted at apex of stem, not soon reflexed”, p. 146), when describing his “var. *major*” (the epithet was meant to be referring to the notably longer leaves, but not to the overall height of the plants, which is smaller than that of typical *D. madagascariensis* – thus this variety does not circumscribe the very large and robust plants of *D. madagascariensis* which occur in tropical Western Africa, as might erroneously be assumed from that name). However, he did not notice the similarity to Planchon’s *D. curvipes*, although he studied his type material, nor to the other specimens he listed under the nominal variety of *D. madagascariensis* (including *Wilms 33*, which he also designated as the type of his var. *major* in the same publication) in his treatment “Flora of the Transvaal” (Burt Davy 1926).

Selected specimens of *D. curvipes* examined:

SOUTH AFRICA: Gauteng Province: Transvaal, nahe Pretoria, without date, *Debbert 131* (B, M; type of *D. longiscapa*); [Transvaal. Pretoria Distr.] Macaliesberg [Magaliesberg], without date (received Herb. Hook. 1867), *Burke s.n.* (K, type of *D. curvipes*); Transvaal, [Heidelberg Distr.] Heidelberg, 24.12.1907, *Leendertz 1064* (K); Pretoria, Premier Mine area, 04.02.1940, *Repton 1323* (MO, PRE); Bronkhorstspuit at Donkerhoek, 31.10.1978, *Germishuizen 870* (PRE); Witbank to Pretoria, 1480 m, 04.10.2006, *Rivadavia & Fleischmann 2432* (SPF, M).

North West Province: Transvaal, Rustenburg Distr., 2527 CA, Tierkloof on farm Baviaansk-rans, 02.10.1976, *Venter 1079* (K); Magaliesberg, Mountain Sanctuary Park, 1590 m, 04.10.2006, *Rivadavia & Fleischmann 2431* (SPF, M).

Limpopo Province: Transvaal, near Nylstroom River [Modimolle, Nyl River], *Nelson 293* (K); Waterberg, Geelhoutkop, 05.01.1936, *Van der Merwe 313* (MO, PRE); Transvaal, 16 km from Palala to Bamboeskloof, 09.03.1978, *Germishuizen 744* (K, MO).

Mpumalanga Province: Transvaal, District Lydenburg, bei O’Neil’s Farm, Dez? 1883, *Wilms 33* (K; type of *D. madagascariensis* var. *major*); Transvaal, Belfast, common in pan in wet peaty soil, 6446-6750 ft [ca. 1965-2057 m], 06.02.1904, *Burt Davy 1311* (K); High Forest Stream valley, Buffelskloof Nature Reserve, 1700 m, 04.02.1989, *Burrows 4474* (BNRH photo!).

Not assigned to exact location: Natal, received Jul 1865, *Gerrard s.n.* (K).
SWAZILAND: Shiselweni district, Hlatikulu, 10.1910, *Stewart 10083* (K).

***Drosera madagascariensis* from Southern Africa:**

SOUTH AFRICA: Limpopo Province: Woodbush Hill, 11.1913, *Pott 4609* (PRE).

SWAZILAND: Mbabana, Forbes Reef, 03.02.1961, *Compton 30503* (K, PRE).

Other specimens previously misidentified as “*D. madagascariensis*” (and/or *D. natalensis* in some herbaria) from Southern Africa:

***Drosera nidiformis*:**

SOUTH AFRICA: Eastern Cape Province: Südost-Afrika, Pondoland, 1887, *F. Bachmann 952* (B); Transkei, Mkweniriviermond, 13.07.1976, *Venter 958* (K).

KwZulu-Natal Province: Natal, in paluda pr. Clairmont, 20 m, 22.08.1893, *Schlechter 3133* (G, BM); Clairmont, 12.1882, *Wood s.n.* (BM); Inanda, Natal, 1882, *Wood 1426* (K); Natal, Murchison, 01.05.1884, *Wood 3125* (K); Zululand, Natal, E. of Mtubatuba, 23.03.1941, without collector (K); Port Edward, c. 350 ft. [c. 107 m] 01.1951, *Huntley 778* (K, PRE); Port Shepstone, Uvongo, *Strey 6173* (K).

***Drosera collinsiae*:**

SOUTH AFRICA: Gauteng Province: Transvaal, Witpoortje Falls, 02.05.1949, *Prosser 1215* (K).

Mpumalanga Province: Transvaal, in palude pr. Kl. Olifant Rivier, 1830 m, 21.12.1893, *Schlechter 4022* (G, K); Transvaal, Belfast, 12.1909, *Worsdell s.n.* (K).

Free State Province: Harrismith, 7.500' [= 2.286 m; Platberg], 02.1905, *Sankey 67* (K).

Eastern Cape Province: Nkandla, valley depression at Ngyoa Mountain, 11.12.1973, *Stirton 435* (K); Transkei, Ngadu, N of Umtata, 11.12.1985, *Hilliard & Burt 18782* (K; these are plants with very narrow laminae, perhaps due to introgression with *D. nidiformis*, but scape length, indumentum and sepal shape match *D. collinsiae*).

LESOTHO: Léríbé, Basutoland, *A. Dieterlein 742b* (P photo!).

Acknowledgements: The curators of the respective herbaria and the South African National Biodiversity Institute (SANBI) are thanked for providing access to their collections, Paulo Gonella for providing images of specimens from BM and MO. I want to thank Fernando Rivadavia for our common field trip to north-eastern South Africa and for numerous taxonomic discussions on Droseraceae, Thomas Carow for sharing location data and habitat information, Christian Dietz for photos of *D. nidiformis* from KwaZulu-Natal, and Paul Debbert for kindly providing to me cultivated plant material of *Drosera longiscapa* from the *locus classicus* as early as in 1999. Jan Schlauer and Bob Ziemer are thanked for helpful comments on the manuscript.

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