The genus Dipogon (Leguminosae—Papilionoideae)

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ABSTRACT

A taxonomic revision of the genus Dipogon Liebm. is presented. Only one variable species, D. lignosus (L.) Verdc., is recognized.

DIPOGON


Perennial twiner, becoming woody below, thinly pubescent, glabrescent. Leaves pinnately trifoliolate, petiolate, stipulate; leaflets ovate-acute to oblong-lanceolate, up to 7 cm long. Flowers purple, in short dense racemes on peduncles longer than leaves. Corolla 1,0–1,5 cm long. Style channelled, beard along its upper margin, strongly curved near base and apex in same direction, the middle part being gently curved in opposite direction. Legume straight to falcate, 3–5 cm long, 4–5-seeded, style persistent; seeds black.

A monotypic genus found in the Cape Province from the Cape Peninsula to Grahamstown.


D. gibbosus Thunb. var. uniflorus Harv. in Fl. Cap. 2: 244 (1862). Type: Cape, ‘in collibus montium urbi Cap. b. Spei’, Thunberg s.n. (UPS-16747, microfiche!).


The typification of Dolichos lignosus L. has caused considerable difficulty and despite attempts by a number of authors to typify it, it has always been left unresolved (Freeman, 1918; Verdcourt 1971; Hutchinson, unpublished note; Dandy, unpublished note). It seems appropriate now that the plant has become quite widely cultivated and has even begun to assume weedy habits in Australia, that its correct status be established. Freeman (1918) and Verdcourt (1971) have given exhaustive accounts of the origin, usage and misusage of this name. I will therefore not repeat their arguments here, but briefly outline why I have chosen t. 21 in Smith’s Specieg. Bot. as the neotype even though the key diagnostic character in Sp. Pl. 726 (1753) ‘leguminibus strictis linearius’ is not depicted in t. 21.


The effective diagnostic part of Linnaeus’s definition lies in the words ‘pedunculis capitatis, leguminibus strictis linearius’ as the first phrase ‘Dolichos caule perenni’ is repeated for D. polyystachos the following species. It is also clear that the effective diagnostic part is ommitted from Hort. Clff. 360. There is no specimen of D. lignosus in the Linnaean herbarium, so one is forced to look elsewhere for a type. The first possibility is the cited plate in the Hortus Cliffortianus. This cannot be regarded as a lectotype, however, because the figured plant lacks fruit and does not have capitate flowers. Linnaeus actually stated in the text that his specimen did not produce fruit (‘Absoluta florescentia absque fructu perit’). There is, however, a specimen in the Hort. Cliff which one might consider as a lectotype, since it is quite sterile. But it shows no sign of having

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Fig. 1.—Dipogon lignosus. 1, habit; 2, flowering branch, × 1; 3, flower bract; 4, flower; 5, calyx opened out; 6a, standard opened out; 6b, standard closed; 7, wing; 8, keel; 9, vexilar stamen; 10, staminal sheath; 11, discoid floral nectary; 12, gynoecium; 13, stigma; 14a, seed, side view; 14b, seed, marginal view showing hilum.
borne an inflorescence and consists mostly of newly flushed growth; neither does it match the figured plate accompanying the Hort. Cliff. description of *D. lignosus*. The Hort. Cliff. specimen could be a *Dipogon*, but it is very difficult to be sure. For these reasons it is an unsuitable choice for a lectotype. The remaining possibility is Linnaeus’s reference to Eichrodt’s *Hortus Carolshuensius*. However, he does not mention the fruit and, as the phrase name is vague, it also does not satisfactorily resolve the problem.

There are two noticeable changes in Linnaeus’s *Sp. Pl. and Hort. Cliff. accounts. In Hort. Cliff. he states ‘Crescit in America’, whereas in the *Sp. Pl.* he omits the origin of the plant altogether. This may indicate that his view of the species had changed, as it certainly did in the second edition of the *Sp. Pl.*, where he included in synonymy ‘cacara. s. phaseolus perennis’ (a form of *Lablab purpureus*) and stated for the species as a whole ‘Habitat in India’. Verd court (1971) has described the subsequent confusion which thence accompanied the names *Dolichos lablab* and *D. lignosus*. The second difference in the Hort. Cliff and *Sp. Pl.* accounts is the inclusion in the latter of a description of the fruits.

The whole problem of typification of this species hinges, I believe, on Linnaeus’s uncertainty about the nature of fruits in *Phaseolus* and *Dolichos* (*Vigna* was not known at the time as such and was treated by him under *D. lablab* and *D. lignosus*; see note by Linnaeus on p. 1015, *Sp. Pl.* 2.). It began when Linnaeus’s concept of his species changed between his Hort. Cliff. treatment and his 1st edition of the *Sp. Pl.* I am fairly certain that when he added ‘leguminibus strictis linearibus’ he must have seen a fruit of a *Vigna* and not one of *Dolichos lignosus*. It is not known whence Linnaeus obtained his information about the fruit, neither did it help matters when, in his second edition, he included in the synonymy of *D. gibbosus* the name ‘cacara. s. phaseolus perennis’ now known to be a variant of *Lablab purpureus* and yet again with a different fruit.

One can either select a neotype and preserve the name *Dolichos lignosus* or abandon it. An acceptance that Linnaeus erred in his addition of the fruit character to his original phrase name in the Hort. Cliff. would allow one to accept one of the two distinctive and unambiguous plates published by Smith (Spicieg. Bot. t. 21, 1792) and by Curtis (Curtis’s bot. Mag. 11: t. 380, 1797) shortly thereafter. It was only much later that the identity of *Dolichos lignosus* really became confused. The most parsimonious solution is, therefore, I think, to select Smith’s t. 21 as the neotype of *Dolichos lignosus*, the basionym of *Dipogon lignosus* (L.) Verde.

Volatile perennial arising from underground, vertic-  

cally, deeply lenticelled rootstock with dichotomously branching laterals. *Shoots* spirally twisted, up to 3 m long, weak, glabrescent. *Leaves* trifoliolate; stipules up to 6 mm long, basified, oblong-lanceolate, persistent, clasping but patent when old; petioles up to 5 cm long; leaflets 2–7 cm long, 1–4.5 cm wide, laterals smaller, stipellate, el glandular, paler beneath, glabrescent; terminal leaflet ovate-acuminate, laterals gibbous on lower margin. *Pistil* up to 3 mm long. *Rhachis* 1–2 cm long, puberulent, armed with two persistent acrorhachial stipels. *Racemes* 5–10 (–33)–flowered, axillary, up to 25 cm long, longer than leaves, short and densely racemose towards apex, sometimes twisted; pedicels 5–10 mm long, somewhat flattened, becoming purplish with age, armed with small caducous bracteoles near apex; bracts small, green, persistent until flower abscises. *Flowers* purple, turning pale mauve, 10–15 mm long, reflexed; bracts persistent; calyx campanulate, lobes 5, short and broad, tube twice longer than lobes, 2 horn (upper) lobes rounded, lateral and keel lobes triangular, ciliate. *Standard* 10–15 cm long and broad; apex emarginate, base auricled, with prominent appendages (callus lobes, callosities) situated low down extending from auricles to apex of claw, raised to form an entrance against which insects can thrust their thoracic region. *Wings* longer than keel blade, hanging slightly flared, with upper auricles inserted between appendages, pinkish. *Keel blades* rostrate, apex incurved, purple tipped. *Stamens* diadel­ phous, stamens held at two levels. *Pistil* sessile; ovary linear, with hairs along upper ridge; ovules 4–5; style channelled, bearded along upper inner margin, strongly curved near the base and apex in same direction, the middle part being gently curved in opposite direction; stigma capitate, fringed with hairs. *Discoid floral nectary* present. *Legume* 40–60 mm long, 8–10 mm wide, oblong, attenuate at base and apex, tipped with persistent style. *Seeds* 4–5, subglobose, 3.5–4.5 mm wide; hilum 2.5–3 mm long, black or speckled. *Germination* hypogal, epicotyl absent; primate leaves ovate, base cordate, opposite, petiole up to 1.8 mm long; stipules 2, undivided, oblong-lanceolate, persistent; acrorhachial stipels present. *Chromosome number* 2n = 22. Fig. 1.

*D. lignosus* is endemic to the Cape Province and extends from the Cape Peninsula as far east as Grahamstown (Fig. 2). Its overall distribution falls within the fynbos. *Flowering* begins in July; reaches a peak in October then declines rapidly after December. This species grows commonly in scrub forests, along the perimeter of high forests (Galpin 3988 reports one plant overtopping a 6 m tree), and more recently it has been reported from waste places and gardens.

Despite a number of recent investigations into generic affinities in the Phaseoleae, there is still no agreement about the affinity of *Dipogon* to other genera. Lackey (1977a) placed *Dipogon* in the subtribe Phaseolinae Benth. between *Alistilus* N. E. Br. and *Dolichos* L., having suggested earlier (1977b) that *Dipogon* was closely related to *Lablab* Adams. and *Alistilus* and should perhaps be united with them. Baudet (1978), in contrast, placed *Dipogon* in the subtribe Phaseolinae, section Phaseolatrae, but *Alistilus* and *Dolichos* in section Dolichastreae. Mar­ chal, Mascherga & Stainer (1978) suggested links with *Lablab*. They included both *Dipogon* and *Lablab* in their numerical analysis of the Phaseoleae — Vigna complex. The peripheral affinity of *Dipogon* and *Lablab* and *Phaseolus* and *Vigna* (Marchal et al., 1978) would rather suggest, as already alluded to by Lackey (1977a) and Verd court (1970), that *Dipogon*, *Alistilus* and *Lablab* may be better considered allies of *Dolichos*. However, until the African representative of *Dolichos* are better known, this problem will have to be deferred.

The following herbarium material is recognized as *D. lignosus*: 

**SOUTH AFRICA.** — Alexander s.n. (2 sheets), 46 (K); Archibald 4836 (PREX; Atherstone s.n. (GRA); Barker 1673 (GRA, PRE); Bayliss 108 (GRA, PRE), 2963 (PRE); Boucher 821, 1652 (PRE); Brit­ ten 78 (GRA), s.n. (Oct. 1946, 2 sheets, (GRA); Buchrel 437, 6024, 7012 (K); Cummings 67 (RH); Dahlstrand 837 (GRA, STE); Dreyer 278 (GRA, s.n.); Dyer 444 (GRA, PRE); Ecklom 1683 (K); Esterhuyzen 709 (PRE), 23245 (K); Forest Department **
Port Elizabeth 72 (GRA); Fourcade 1630 (GRA), 5739 (STE); Frae., Norlindh & Wainnark 567 (K); Gamble 22052 (K); Galpin s.n. (22.9.1897, PRE), 3988 (GRA); Garside 62 (K); Gerber s.n. (RUH); Gillett 103 (STE), 3376 (PRE, STE); Godfrey s.n. (11.12.1952, PRE); Grobbelaar 333 (PRE); Hajström & Acock 2306 (PRE); Heeg 92 (RUH); Henry 16 (PRE); Herbarium Harvey 772 (BM, K); Hilner 86 (GRA); Hooks 199 (GRA); Hooker 533 (K); Hutchinson 645 (BM, K), 1164 (K, PRE); Jordan 3910 (STE), s.n. (STE 18592); Joubert 487 (STE); Keet 410 (GRA, STE), s.n. (STE 13499); Kerfoot 5508 (STE); Kies s.n. (5.9.1940, PRE); Kruger 543 (STE); Levyns s.n. (BM); MacGillivray 504 (K); Marloth 13047, 13448 (PRE); Marsh 611 (PRE, STE); Miles s.n. (RUH); Morgan 12 (RUH); Muir 91A (PRE), s.n. (STE 10554); Nature Conservation Cape 208 (PRE); Nelson s.n. (BM); Noel 153 (RUH); Oliver 3627 (PRE); Pappes s.n. (K, 3 sheets); Patterson 361 (GRA); Phillips 357 (K); Pienaar K58 (STE); Pillans 3054 (PRE); Rodin 1030 (K, PRE); Rogers 1060, 2052 (BM), 4523 (GRA), s.n. (K), 26436 (PRE); Salisbury 206 (PRE); Salter 2058, 9313 (BM); Schurf 1401 (PRE); Schelpe 4166 (BM); Schlechter 2659 (GRA), 4704 (K), 9321 (BM, GRA, K); Schlieben & Ellis 12399 (K, PRE, STE); Schonland 533 (GRA); Shaw 43 (RUH); Smith 4832, 4930 (K); Story 317, 2593 (PRE); Stirling 6330 (PRE); Strey 797 (PRE); Taylor 4370 (STE); Theron 640 (PRE); Thode A917 (K, PRE), 8358 (STE); Thompson J. B. 56 (PRE); Thompson, M. 854 (K, PRE); Tyson s.n. (9.1916, PRE); Van Breda 17, 351 (PRE), 589 (K); Van Dam s.n. (12.1918, PRE); Van Rensburg 487 (PRE); Wallich s.n. (BM); White 5162 (PRE); Worsdell s.n. (K); Wolley-Dod 12 (BM, K); Zeyher 2413 (GRA, PRE), s.n. (GRA).

Verdecourt (1971) has already listed the cultivated material of *D. lignosus* housed in K. To this can be added Thomson s.n. (K) from Ceylon: Gamble 16999 (K) from India; Symon 9541 (ADW); Rodd 1493 (K; NSW) and Constable 7148 (K; NSW) from Australia; and Bangerter 5189 (AK; K) from New Zealand. *D. lignosus* has become naturalized in Australia and seems to be increasing its range there.

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UITTREKSEL

'n Taksonomiese hersiening van die geslag *Dipogon* Liebm. is onderneem. Net een veranderlike spesie *D. lignosus* (L.) Verdc., word erken.

REFERENCES


