

REVIEW OF THE INFRASPECIFIC CLASSIFICATION OF *DROSERA* *MACRANTHA* Endl.

by

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ABSTRACT

The subspecific classification of *Drosera macrantha* Endl. is rejected because the two presently recognized subspecies (*viz.* ssp. *macrantha* and ssp. *planchonii*) are morphologically indistinguishable.

INTRODUCTION

N. G. Marchant (Marchant & George 1982) reduced *Drosera planchonii* J. D. Hook. ex Planchon to a subspecies of *D. macrantha* Endl. He defined *D. macrantha* ssp. *macrantha* as having shallowly fringed ovate sepals, and ssp. *planchonii* as having deeply fringed, broadly ovate sepals. The two subspecies were recorded as occurring in distinct geographical regions, ssp. *macrantha* in Western Australia and ssp. *planchonii* in south-eastern Australia (refer Marchant & George *l.c.*, 36–38 and maps 34 & 35). A preliminary investigation by myself showed that several collections from Western Australia appeared morphologically indistinguishable from ssp. *planchonii* and so further investigations were carried out.

ASSESSMENT OF MORPHOLOGICAL FEATURES

160 specimens of *D. macrantha* held at MEL were used for an assessment of the taxonomic value of sepal shape and the size of the sepal 'fringe'. Sepal shape was defined using two parameters: (i) sepal length to sepal width ratio, and (ii) the position of the widest part of the sepal relative to the sepal base. The length of the hairs on the distal portion of the sepal margin was used as a measure of the size of the sepal 'fringe'. The hairs on the more basal portions of the sepal margin are usually shorter in both the Western Australian and south-eastern Australian populations of this species. The average of three measurements from each specimen was used for both characters evaluated.

To evaluate the status of the two currently recognized subspecies of *D. macrantha* the Western Australian collections were kept distinct from those of the south-eastern Australian region. The resulting scattergram (Fig. 1) of sepal length to sepal width ratio plotted against the length of the hairs on the distal portion of the sepal margin clearly shows that the Western Australian and south-eastern Australian populations of this species do not form distinct clusters. There is a tendency for many Western Australian specimens to have shorter hairs (less than 0.7 mm long) on the sepal margin compared to most of the south-eastern Australian specimens (mostly at least 0.8 mm long). However the extent of the overlap between the collections from the two regions (Western Australia (0.3-) 0.5-1 (-1.7) mm long *cf.* south-eastern Australia (0.2-) 0.7-1.3 (-2) mm long) is such that any distinction based on this character can not represent natural groupings. There is a similar trend when sepal shape is considered (Fig. 1). Some Western Australian collections tend to have narrower sepals than some south-eastern Australian specimens. However there is a large overlap in the range of sepal width (Western Australian populations 1.3-2.6 (-4.2) mm wide *cf.* south-eastern Australian populations (1.6-) 2-2.6 (-4.6) mm wide).

Although other morphological characters were studied in detail, none were found to be taxonomically useful for distinguishing between the Western Australian and south-eastern Australian populations. The only other distinction between the specimens from these two regions given by Marchant & George (*l.c.*, p. 38) is that the Western Australian populations have a "Stem up to 1.5 m long", whereas those from the

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Muelleria 5(5): 347-349 (1984).

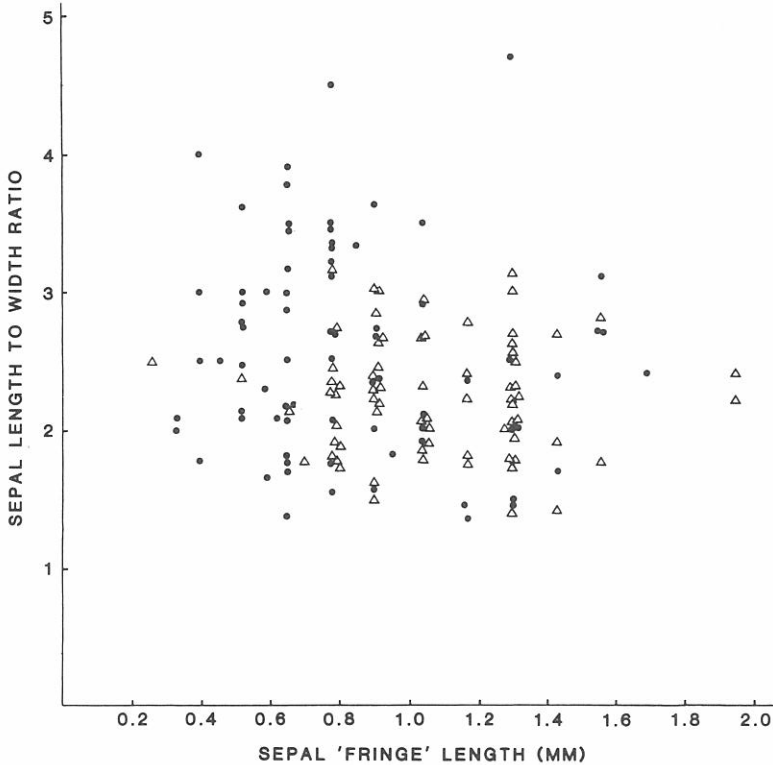


Fig. 1. Scattergram of sepal length to sepal width ratio against sepal 'fringe' length for *Drosera macrantha*. Dots represent Western Australian populations, triangles represent south-eastern Australian populations.

south-eastern region have a "Stem up to 60 cm long". No study of the factors affecting stem length has been made but the taxonomic significance of this character is probably low.

The shape of the sepals has been variously described by different authors (oblong-lanceolate (Endlicher 1837); oblong-obovate (Diels 1906); obovate (Curtis 1956); narrowly lanceolate-ovate (Marchant & George 1982)). Using the shape terminology of Ball *et al.* (1962), I found that the sepals of this species vary from ovate (\pm = 'lanceolate' of Endlicher and of Marchant & George) to narrowly ovate, or rarely broadly ovate (length to width ratio 1.3-1.4), or obovate to narrowly obovate, or sometimes more or less oblong (length to width ratio (1.3-) 1.8-3.5 (-4.7), (2.9-) 3.5-8 (-9) mm long, 1.3-2.6 (-4.6) mm wide). The apex of the sepal is usually more or less obtuse. Sometimes it is truncate, especially when the sepals are oblong to narrowly obovate. Although the sepals of the Western Australian populations are commonly narrow and those of the Tasmanian populations are usually obovate, the entire range of variation occurs throughout the distributional range of this species.

It is here concluded that the subspecies of *D. macrantha* do not deserve recognition and that *D. planchonii* should be regarded as a synonym of *D. macrantha* without any infraspecific status.

NOMENCLATURE

The synonyms, with the relevant literature, for *D. macrantha* are cited below. The type collection(s) for each taxon, as cited in the relevant protologue, has been included for completeness.

Drosera macrantha Endl. in Endl. *et al.* Enum. pl. 6(1837)*; Lehm. Pl. Preiss. 1:254(1845); Planchon, Ann. Sci. nat. (Bot.) ser. 3, 9:294(1848); Benth. Fl. austral. 2:468(1864); Diels, Pflanzenr. 26:118, figs 37F & 38A-D(1906); Blackall & Grieve, W. Austral. wildfl. 1:177(1954); Marchant & George, Fl. Austral. 8:36–38, fig. 9(1982). TYPE: *Hügel s.n.*, 'Perth ad Swan-River' (W *n.v.*).

D. planchonii J. D. Hook. ex Planchon, Ann. Sci. nat. (Bot.) ser. 3, 9: 294(1848); Hook. Comp. Bot. Mag. 1:274(1836) [as '*D. menziesii*']; Icon. pl. 1: t.53(1837) [as '*D. menziesii*']; J. D. Hook. Bot. antarct. voy. III. Fl. Tasman. 1:29 & 30(1855); F. Muell. Pl. Victoria 1:62(1860) [as '*D. menziesii*']; Nat. pl. Victoria, part 1:55 & 56(1879) [as '*D. menziesii*']; Key Vict. pl. 1:133(1888) [as '*D. menziesii*']; Diels, Pflanzenr. 26:118(1906); Ewart, Fl. Victoria, 552, fig. 227(1931) [as '*D. menziesii*']; Curtis, Student's fl. Tasmania 1:186(1956); Black, Fl. S. Austral. 2:390(1963); Willis, Handbk pl. Victoria 2:188(1973). — *D. menziesii* R.Br. var. *albiflora* Benth. Fl. austral. 2:468(1864) [based on *D. planchonii* J. D. Hook. ex Planchon]. — *D. macrantha* Endl. ssp. *planchonii* (J. D. Hook. ex. Planchon) Marchant, Fl. Austral. 8:38 & 383(1982). SYNTYPES: *Gunn 449*, 'Swan Port', Tasmania (HO, K *n.v.*); *Gunn 5*, 'Port Phillip', Victoria (K *n.v.*); *Witthaker [Wittaker] s.n.*, 'Encounter bay', South Australia (K *n.v.*).

D. macrantha Endl. var. *burgessii* Diels, Pflanzenr. 26:118(1906). — *D. macrantha* var. *minor* Benth. *p.p.*, Fl. austral. 2:468(1864). TYPE: *Burges s.n.*, 'Sudwest-Australien' (?B *n.v.*).

EXCLUDED INFRASPECIFIC TAXA

D. macrantha Endl. var. *minor* Benth. *p.p.* = ***D. subhirtella*** Planchon [refer Marchant & George, *l.c.*, p. 34].

D. macrantha Endl. var. *stricticaulis* Diels = ***D. stricticaulis*** (Diels) O. Sarg. [refer Marchant & George, *l.c.*, p. 38].

REFERENCES

- Ball, H. W. *et al.* (eds) (1962). II. Terminology of simple symmetrical plane shapes (chart 1). *Taxon* 11:145–156, fig. 19.
 Curtis, W. M. (1956). 'The student's flora of Tasmania', part 1, pp. 183–186 (Government Printer : Tasmania).
 Diels, L. (1906). Droseraceae. In Engler, A. (ed.) 'Das Pflanzenreich . . .' Heft 26 (Wilhelm Engelmann : Berlin).
 Endlicher, S. L. (1837). Droseraceae. In Endlicher, S. L. *et al.* 'Enumeratio plantarum . . .' (Fr. Beck : Vindobonae [Wien]).
 Marchant, N. G. & George, A. S. (1982). *Drosera*. In George, A. S. (exec. ed.) 'Flora of Australia', vol. 8 pp. 9–64, figs 3–17 (Austral. Govt Publ. Service : Canberra).

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*Marchant & George (1982) incorrectly cited the prologue as Stirp. herb. hügel 6(1837).