A new subspecies of *Cleome uncifera* (Capparaceae) from Western Australia

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Abstract

Keighery, G.J. A new subspecies of *Cleome uncifera* (Capparaceae) from Western Australia. *Nuytsia* 14(3): 381–384 (2002). *Cleome uncifera* subsp. *microphylla* Keighery is described to provide a name for a small-leaved variant of *Cleome uncifera* Kers. from the Great Sandy and Tanami deserts of north-western, Western Australia. The distinction of the new subspecies is discussed, the ranges of variation in the leaves of the new and typical subspecies are illustrated and a map of the distribution of the two subspecies is provided.

Introduction

The Australian members of the Capparaceae are not well known taxonomically, especially the genera *Capparis* L. and *Cleome* L., both of which need detailed study to resolve species limits. This is largely because the family occurs predominantly in the less densely populated, and botanically poorly known, northern parts of Australia.

The Australian members of the genus *Cleome* were last reviewed by Hewson (1982) as a contribution to the "Flora of Australia" project. One of the species accepted by Hewson was *Cleome uncifera* Kers. This apparently short-lived soft-wooded perennial occurs in the Pilbara, Carnarvon, Great Sandy Desert, Tanami and Dampier Land Biogeographic Regions of Western Australia (Thackway & Creswell 1995). Specimens from the eastern populations of *Cleome uncifera* differ quantitatively from typical material in a number of morphological characters. On the basis of these differences, especially the small leaves, this variant is described here as a separate subspecies.

Taxonomic treatment

Cleome uncifera subsp. **microphylla** Keighery, *subsp. nov.*

Differt a subsp. *uncifera* foliolis obovatus-ellipticus, 3–4 mm longis; et siliqua cum stylis peristens, 20–40 mm longa.

Typus: 1 km south-west of Well 42, near Lake Guli, Great Sandy Desert, 21°19'S, 125°53'E, 3 May 1979, Western Australia, *A.S. George* 15578 (*holo:* PERTH 03236307; *iso:* NT, CANB).

A low spreading densely branched soft-wooded *shrub* from a corky woody base to 50 cm tall and 40 cm wide. *Leaf* (from basal non-flowering branch) with petiole 2–4(10) mm long; leaflets obovate-elliptic, 3–5 mm long. *Petals* 12–16 mm long; claw 4–5 mm long. *Inner petals* with a central red marking. *Siliqua* (including persistent style) 20–40 mm long, pedicel 4–6 mm long. (Figure 1A–D)

Specimens examined. WESTERN AUSTRALIA: McLarty Hills, Great Sandy Desert, 7 Aug. 1977, *A.S. George* 14711 (PERTH); Tobin Lake (21°41'S, 125°45'E), 5 May 1979, *A.S. George* 15621 (PERTH, DNA, CANB); near Well 24, Canning Stock Route, 11 Aug. 1992, *A.E. de Jong s.n.* (PERTH); 47 km S of Sturt Creek Homestead, 11 Nov. 1995, *P.K. Latz* 14685 (PERTH, DNA, CANB, MEL); Well 40, Canning Stock Route, Aug. 1973, *M. House & P. Smith* 92 (PERTH); Rudall River (23°S, 122°45'E), *P.G. Wilson* 10480 (PERTH).

Distribution and habitat. Occurs on red sand dunes, often in greatest numbers after fires, in the Great Sandy and Tanami Deserts, Western Australia. (Figure 2)

Conservation status. This taxon has a fairly wide distribution in a region that is not subject to large-scale habitat destruction, so is not considered to be at risk.

Phenology. Recorded in flower from May to November, with flowering time probably depending on rainfall. The arid areas of occurrence of this taxon have both summer and bixeric rainfall patterns, however, rainfall is low and erratic.

Notes. Both subspecies of *Cleome uncifera* appear to have the same habit and plant size. Subsp. *uncifera* prefers sandy soils, but not necessarily dunes. While information relating to fires is lacking on most collections, personal observations suggest the occurrence of this subspecies is linked to rainfall events rather than fire, although it can be common after fires also. Although occasionally recorded (on a few herbarium specimens) as being annual, this taxon perenneates from the corky rootstock. It appears to be a relatively short-lived perennial, but further field observations are needed to assess its longevity.

There are consistent differences in the size of the leaves, flowers and fruits between the two subspecies, as shown in Table 1. Petal length might show a slight overlap but there is no overlap in the vegetative and fruiting characters listed. Figure 1 illustrates the range of variation in leaves of the two subspecies, with the obovate-elliptic leaflets of subsp. *microphylla* (A–D) clearly smaller than the linear to narrowly obovate-elliptic leaflets of subsp. *uncinata* (E–H).

Table 1. Comparison of five quantitative character states for the two subspecies of *Cleome uncifera*. All measurements are in millimetres.

Character	**Subsp. *microphylla***	**Subsp. *uncifera***
petiole length	2–4(5)	15–20
leaflet length	3–5	15–24
petal length	12–16	16–20
fruit pedicel length	4–6	10–15
fruit plus style length	20–40	55–75

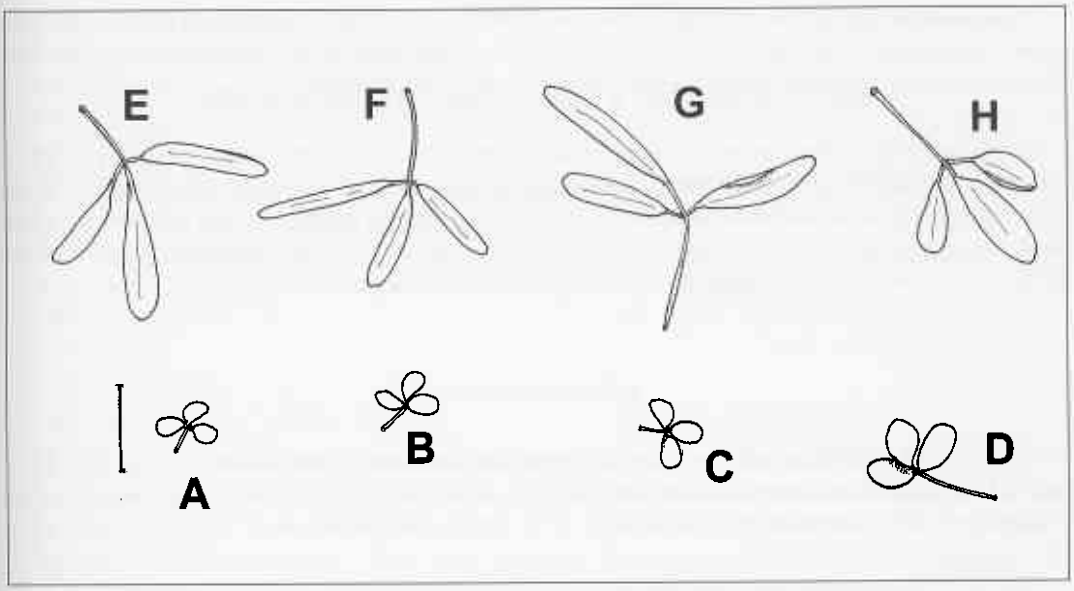

Figure 1. Tracings of a selection of mature vegetative leaves of the two subspecies of *Cleome uncifera*. A–D. *C. uncifera* subsp. *microphylla*; E–H. *C. uncifera* subsp. *uncifera*. Scale bar = 10 mm. Drawn from *P.K. Latz* 14685 (A), *A.S. George* 14711 (B), *A.S. George* 15621 (C) and *P.G. Wilson* 10480 (D), *A.A. Mitchell* 921 (E), *K.R. Newbey* 10567 (F), *N.T. Burbidge* 5854 (G), *P.G. Wilson* 893 (H).

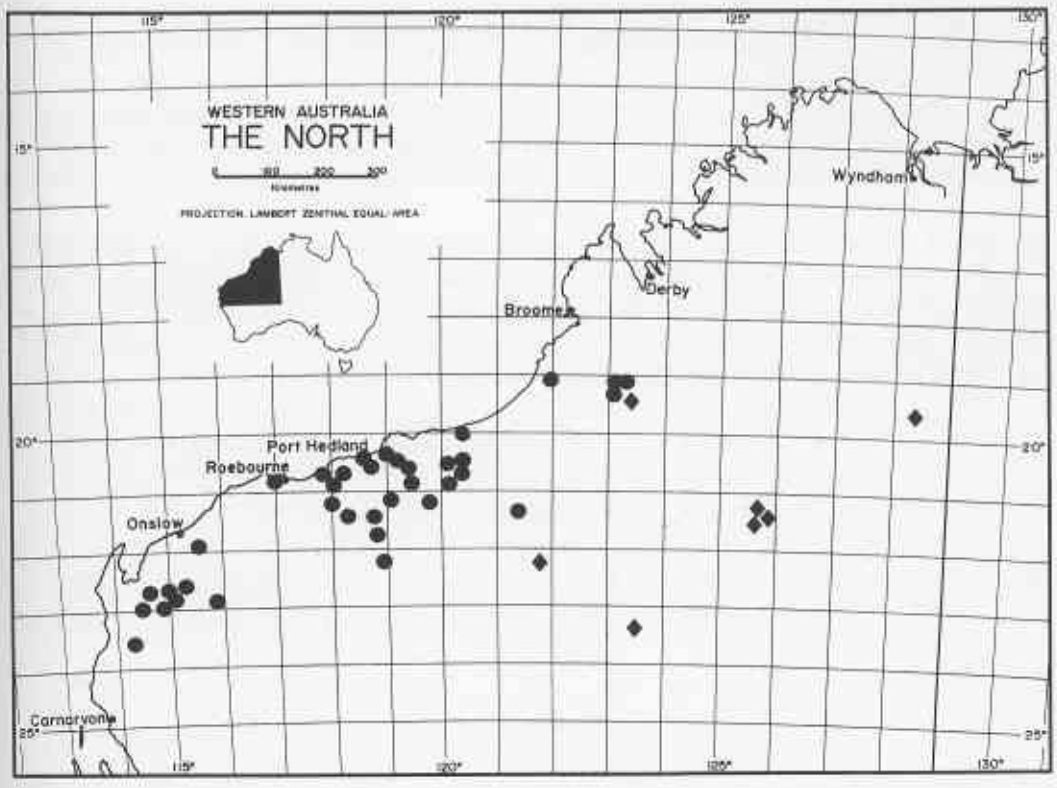

Figure 2. Geographic distribution of *Cleome uncifera* subsp. *microphylla* ◆ and *C. uncifera* subsp. *uncifera* ●.

No consistent qualitative differences are known between the two taxa. Populations of susp. *uncifera* in the Pilbara usually have pure yellow flowers, but plants on the northern and eastern margins often have the central two petals with a red stripe as is found in subsp. *microphylla*.

Distribution data show the two subspecies are disjunct (Figure 1). They only approach each other in the McLarty Hills region, south-east of Broome. In this area there are no records of sympatry, or signs of intergradation between the two subspecies, with one growing on sandplain in the hills and the other on dunes east of the hills. This geographical separation combined with the quantitative nature of the differences between the taxa suggests that subspecies rank is the preferred option.

Acknowledgements

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