# *Drosera paradoxa* (Droseraceae), a new species from northern Australia

Allen Lowrie

6 Glenn Place, Duncraig, Western Australia 6023

## Abstract

Lowrie, A. *Drosera paradoxa* (Droseraceae), a new species from northern Australia. Nuytsia 11 (3): 347-351 (1997). The new species *D. paradoxa* Lowrie is described and illustrated. It occurs in tropical northern Australia and belongs in *Drosera* sect. *Lasiocephala* Planchon.

## Introduction

A new species of carnivorous plant from the Kimberley region of Western Australia and the Northern Territory is described and illustrated. It is a member of *Drosera* subgen. *Drosera,* sect. *Lasiocephala* Planchon (Droseraceae) and brings the total number of named species in the section to 14. Lowrie (1996) gives a key to the other 13 species currently recognized in this section of *Drosera* L.

## Taxonomy

### Addition to key to section *Lasiocephala*

An additional couplet needs to be added to the end of the key to section *Lasiocephala* (Lowrie 1996) to accommodate the new species.

12 Inflorescence (including scape) glabrous ..... **D. broomensis**

12 Inflorescence (including scape) covered with woolly hairs ..... 13

13 Plants with clump-forming perennial stock giving rise to one or more leafy rosettes; petiole 0.4-0.8 mm wide in the centre ..... **D. petiolaris**

13 Plants with perennial, erect, woody stem up to 30 cm tall with a solitary terminal leafy rosette; petiole 0.2-0.4 wide in the centre ..... **D. paradoxa**

**Drosera paradoxa** A. Lowrie, *sp. nov.*

*Droserae petiolaris* affinis sed petiolis in centro 0.2-0.4 mm latis, rosullis foliaceis solitariis, foliis veteribus infra rosellam caducis; caulibus erectis soli deest etiam in plantis juvenilibus; caule in plantis maturissimis erecto ad 30 cm alto crasso lignaceo, foliis veteribus desunt, inflorescentia congesta, floribus 50-70 vel ultra.

*Typus*: Wren Creek, on road to Pantijan from Peter Lacy's camp on a tributary of Bachsten Creek, Western Australia, 16° 01' 32" S, 125° 14' 55.7" E, 1 August 1996, *A. Lowrie* 1514 (*holo*: PERTH 04680502; *iso*: MEL).

A fibrous-rooted *perennial herb*; stem woody, erect, short at first but with age up to 30 cm tall *c.* 1.5 mm diam., with a terminal active solitary leafy rosette, the leaves below the terminal rosette caducous; indumentum of white hairs, which are minutely spurred along their length, present on the petioles, lamina abaxial surface, inflorescence, scape and sepals in varying densities. *Leaves* of the rosette varying from erect (new inner ones) to horizontal (older outer ones); petiole linear, commonly 20-35 mm long at flowering, 0.4-0.6 mm wide near base, 0.2- 0.4 mm wide in the centre, narrowed to 0.1-0.15 mm wide at the base of the lamina, sparsely hairy; lamina sub-orbicular, 2.5-3 mm wide, 2-3 mm long, adaxial surface with insect catching glands positioned around the margins and smaller glands within, abaxial surface sparsely hairy. *Inflorescences* 1-5 arising from and/or below the leafy rosette (often rust-coloured), 20-40 cm long (including scape), densely hairy; raceme crowded, with 50-70 or more flowers; pedicels 0.5-1.5 mm long, pendulous in fruit. *Sepals* elliptic, oblong or oblanceolate, 2-3.5 mm long, 0.8-1 mm wide, abaxial surface hairy. *Petals* pink or white, with or without a red centre, or cerise, obovate, 4-12 mm long, 2.7-11 mm wide. *Stamens* 2-3 mm long. *Ovary* obovoid, *c.* 0.5 mm long, *c.* 0.7 mm diam. at anthesis, carpels 3. *Styles* 3, *c.* 1.1 mm long (including stigmas), divided into many branching segments in the upper portion, with each segment terminating in a clavate stigma. *Fruit* obovoid 0.7-0.8 mm long, 0.7-0.8 mm diam., containing *c.* 15 seeds. *Seeds* black, ellipsoid, reticulate, 0.3-0.35 mm long, *c.* 0.2 mm diam. (Figure 1)

Other specimens examined. NORTHERN TERRITORY: Deaf Adder Gorge, Kakadu, 24 Feb. 1977, *R. E. Fox* 2566 (DNA); 3 km SE of Jim Jim Falls, Arnhem Land, 24 Mar. 1984, *D. L. Jones* 1519 (DNA); Waterfall Creek, Kakadu, 4 Aug. 1993, *F. Rivadavia* 236 (PERTH).

WESTERN AUSTRALIA: 62 km N of Beverley Springs homestead, 22 Dec. 1992, *R. L. Barrett* 412 (PERTH); Bachsten Creek camp, 30 km E of Pantijan, W Kimberley, July 1994, *M. Hancock* 19 (PERTH); King Edward River crossing on road to Mitchell Plateau, 24 June 1994, *A. Lowrie* 993 (DNA, MEL, PERTH); Ngoollalah Creek crossing on Kalumburu road 12 km N of turn off to King Edward River, 26 June 1994, *A. Lowrie* 1005, 29 Sep. 1995, *A. Lowrie* 1344 (DNA, MEL, PERTH); Garlcarinangui Creek on road to Pago Mission, 26 June 1994, *A. Lowrie* 1015 (DNA, MEL, PERTH); Unamon Creek on road to Pago Mission, 26 June 1994, *A. Lowrie* 1023 (DNA, MEL, PERTH); Pago Mission ruins, 26 June 1994, *A. Lowrie* 1024 (DNA, MEL, PERTH); headwaters of the Hann River, Mt Elizabeth, 14 June 1995, *A. Lowrie* 1304 (DNA, MEL, PERTH); Creek crossing at 16° 3' 46" S, 125° 23' 38" E, on road to Beverley Springs from Bachsten Creek, 2 Aug. 1996, *A. Lowrie* 1523 (DNA, MEL, PERTH); first creek crossing N of Honeymoon Beach turn off on Kalumburu-Pago road, 4 July 1997, *A. Lowrie* 1769 & 1770 (DNA, MEL, PERTH); Noseda Creek, E end of Napier Broome Bay, 28 Mar. 1993, *A. A. Mitchell* 2971 (PERTH, BROOME).

*Distribution. Drosera paradoxa* is widely distributed from the west and north coasts of the Kimberley inland to Beverley Springs in Western Australia and eastwards to Arnhem Land and Kakadu National Park in the Northern Territory.

*Habitat. Drosera paradoxa* grows in skeletal sandy soils over sandstone pavement on the banks as well as in the beds of seasonally dry creeks; in the cracks of sandstone pavements as well as amongst sandstone boulders. The habitats of *D. paradoxa* are commonly covered with a considerable depth of fast-flowing water in March-April during the wet season.

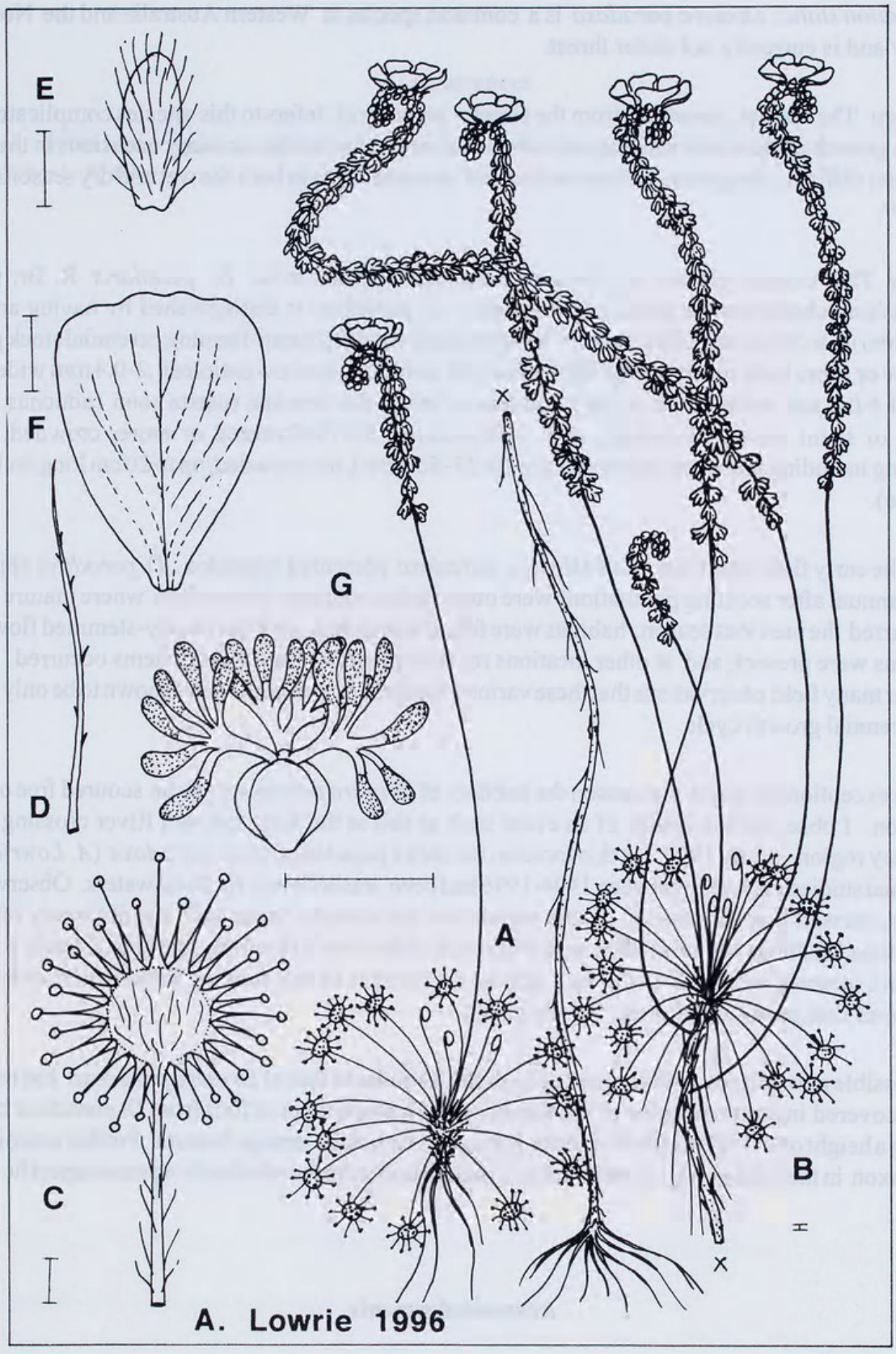


Figure 1. *Drosera paradoxa* A - habit of young plant; B - habit of plant many seasons' old; C - leaf; D - hair found on petioles, abaxial lamina surface, scape and sepals, enlarged; E - sepal; F - petal; G - gynoecium. Scale bars = 1 mm. Drawn from *A. Lowrie* 1514.

*Flowering Period.* July-September (during the dry season).

*Conservation status. Drosera paradoxa* is a common species in Western Australia and the Northern Territory and is currently not under threat.

*Etymology.* The epithet, *paradoxa* from the Greek - *paradoxos,* refers to this species complicated and secretive growth cycle which was only revealed after extensive studies on many occasions in the field, often under difficult, dangerous and uncomfortable circumstances in both the wet and dry seasons from 1993-1997.

*Affinities.* The closest relative to *Drosera paradoxa* appears to be *D. petiolaris* R. Br. whose distinguishing characters are given in parenthesis. *D. paradoxa* is distinguished by having an erect woody stem up to 30 cm tall with a solitary terminal leafy rosette (clump-forming perennial stock giving rise to one or more leafy rosettes) bearing leaves with extremely narrow petioles 0.2-0.4 mm wide in the centre (0.4-0.8 mm wide in the centre); old leaves below the terminal rosette soon caducous (basal portions of spent leaves persisting); and inflorescence 50-70-flowered or more, crowded, up to 40 cm long including the scape (inflorescence 10-25-flowered, not crowded, up to 20 cm long including the scape).

*Notes.* The early field observations of *Drosera paradoxa* presented a paradox. *D. paradoxa* appeared to be an annual after seedling populations were observed at a number of locations where mature plants had occurred the previous season; habitats were found where only very tall woody-stemmed flowering specimens were present; and at other locations rosetted plants without woody stems occurred. It was only after many field observations that these various forms of *D. paradoxa* were shown to be only stages of its perennial growth cycle.

In an exceptionally good wet season the habitats of *Drosera paradoxa* can be scoured free of most vegetation. I observed the results of an event such as this at the King Edward River crossing in the Kimberley region in July 1997. At this location the entire population of *D. paradoxa* (*A. Lowrie* 993) which I had studied each year between 1994-1996 had been washed away by flood waters. Observations however, showed that the renewal of this population had already begun with the discovery of many *D. paradoxa* seedlings 1-2 cm in diam. on the bare soil of the river's floodway margins. Clearly it is only specimens securely anchored to the soil against the ravages of fast flowing flood waters over many wet seasons that produce tall erect woody stems.

A possible new species with an erect growth habit similar to that of *Drosera paradoxa* has recently been discovered in a remote region of the Kimberley. This new taxon differs from *D. paradoxa* by only attaining a height of *c.* 5 cm, its fewer, shorter leaves and its metalic-orange flowers. Further examination of this taxon in the field as well as cultivation is needed to determine whether it warrants specific status.

**Acknowledgements**

I wish to thank Paul Simmons, Denzel Murfet, Fernando Rivadavia, Mary Hancock, Andrew Mitchell, Russell Barrett and Matthew Barrett for obtaining selected material of various taxa within the *Drosera petiolaris* complex; the leaders of the 1993, 1994, 1995, 1996 and 1997 *LANDSCOPE* Expeditions to collect material of *Drosera paradoxa* in the Kimberley, and to the expedition members for their assistance and

companionship in the field; Paul Wilson for his assistance with the Latin diagnosis; Barbara Rye for her comments and the staff at the Western Australian Herbarium.

## References

Lowrie, A. (1996). New species in *Drosera* section *Lasiocephala* (Droseraceae) from tropical northern Australia. Nuytsia 11: 55-69.