Drosera kenneallyi (Droseraceae), a new tropical species of carnivorous plant from the Kimberley, northern Western Australia

Allen Lowrie

6 Glenn Place, Duncraig, Western Australia 6102

Abstract

Lowrie, A. *Drosera kenneallyi* (Droseraceae), a new tropical species of carnivorous plant from the Kimberley, northern Western Australia. Nuytsia 10(3): 419-423 (1996). A new species, *Drosera kenneallyi* (Droseraceae), is described from tropical northern Western Australia. The features that distinguish this taxon from its nearest relatives are presented, with growth adaptations and habitat preferences indicated.

Introduction

The first collection of this distinctive new *Drosera* species was by Kevin F. Kenneally in 1982 on the Mitchell Plateau. In 1993 I collected live dormant specimens and brought the species into cultivation. A comparison of the dormant, vegetative and flowering stages of this plant with data from all named species within the *D. petiolaris* complex confirmed that this taxon warranted species status.

The new species belongs in subgen. *Drosera*, sect. *Lasiocephala* Planchon (Marchant & George 1982). Since Marchant and George's treatment, four additional species belonging to the section have been named (Kondo 1984, Lowrie 1994). Seven species are now listed in this section, *D. dilatato-petiolaris* Kondo, *D. falconeri* Kondo and Tsang, *D. kenneallyi* Lowrie, *D. lanata* Kondo, *D. ordensis* Lowrie, *D. petiolaris* R.Br. (also recorded in Papua New Guinea by Conn 1980), and one species in New Caledonia, *D. caledonica* Vieill.

Key to section *Lasiocephala*

1: Leaf lamina narrowly obovate; inflorescence (including scape) covered with short glandular hairs ..... **D. caledonica**

1: Leaf lamina orbicular, suborbicular, reniform or transversely broadly elliptic to very broadly ovate; inflorescence (including scape) covered with non-glandular, woolly hairs 2:

2: Leaves sparsely covered with appressed hairs, each hair entire or bearing a few small spurs; petiole visible through the hairy covering 4:

2: Leaves densely covered with dendritic hairs, each hair bearing many long lateral spurs; petiole hidden by the dense hairy covering 3:

3: Petiole linear, 1-1.5 mm wide; lamina suborbicular, 2-2.5 mm long, 2.5-3 mm wide; pedicels 1.5-2.5 mm long ..... **D. lanata**

3: Petiole oblanceolate, 2-4 mm wide; lamina suborbicular, 3-4 mm long, 3.5-5 mm wide; pedicels 2-4.5 mm long ..... **D. ordensis**

4: Leaf lamina reniform, 15 mm long, 20 mm wide ..... **D. falconeri**

4: Leaf lamina orbicular, suborbicular or transversely broadly elliptic to very broadly ovate, 2.5-7 mm wide 5:

5: Lamina transversely broadly elliptic to very broadly ovate, 5.5-7 mm wide, rosette leaves appressed to the soil ..... **D. kenneallyi**

5: Lamina orbicular or suborbicular, 2.5-3.5 mm wide, leaves of the rosette erect and semi-erect 6:

6: Petiole oblanceolate, 2.5-3 mm wide; pedicels 3-7 mm long ..... **D. dilatato-petiolaris**

6: Petiole linear, 0.4-0.8 mm wide; pedicels 1-1.5 mm long ..... **D. petiolaris**

Description

Drosera kenneallyi A. Lowrie, sp. nov. (Figure 1)

Drosera falconeri Kondo & Tsang affinis sed petiolo anguste oblanceolato 1.5-2.2 mm lato, lamina 5.5-7 mm lata, scapo (inflorescentia includenti) 12.5-20.5 cm longo.

Typus: 9 km N of mining camp on track to Port Warrender, Mitchell Plateau, N. Kimberley, Western Australia, lat. 14° 46' S long. 125° 48' E, *K. F. Kenneally* 8658, 7 December 1982 (*holo*: PERTH 01612808; *iso:* CANB, MEL).

A reddish bronze, fibrous rooted *herb* with perennial stock and a solitary leafy rosette. *Leaves* in a flat basal rosette appressed to the soil; petiole narrowly oblanceolate in outline, 0.9-1 mm wide near base, 1.5-2.2 mm wide near the centre, narrowed to 0.7-1 mm wide at the base of the lamina, commonly 15-30 mm long at flowering, adaxial surface glabrous, abaxial surface very sparsely covered with white simple hairs; lamina transversely broadly elliptic to very broadly ovate, 4-6 mm long, 5.5-7 mm wide, adaxial surface with insect-catching glands positioned around the margins of the lamina and smaller glands within, abaxial surface very sparsely covered with white simple hairs. *Inflorescences* 1-3 per basal rosette, 12.5-20.5 cm long (including scape), forming a 10-20-flowered loose raceme, pedicels 3-12 mm long, horizontal to semi-erect in fruit, scape sparsely covered with short, white hairs, inflorescence with a slightly denser covering of similar hairs. *Sepals* obovate, 2-3 mm long, 1-1.7 mm wide, abaxial surface sparsely covered with white, simple hairs bearing a few short spurs along their length; petals white, obovate, with strong mid-vein, 5.5-6.5 mm long, 3-4 mm wide. *Stamens* 2-3.5 mm long, *carpels* 3, bilobed; ovary turbinate, 0.7-1 mm long, 1-1.4 mm diam. at anthesis, styles 3 or 4 , the basal portion laterally compressed, 0.3-0.5 mm long then forked and repeatedly branched into flattened segments, 1.5-2.5 mm long, stigmas formed on the apical portion of each branching style segment. (Figure 1)

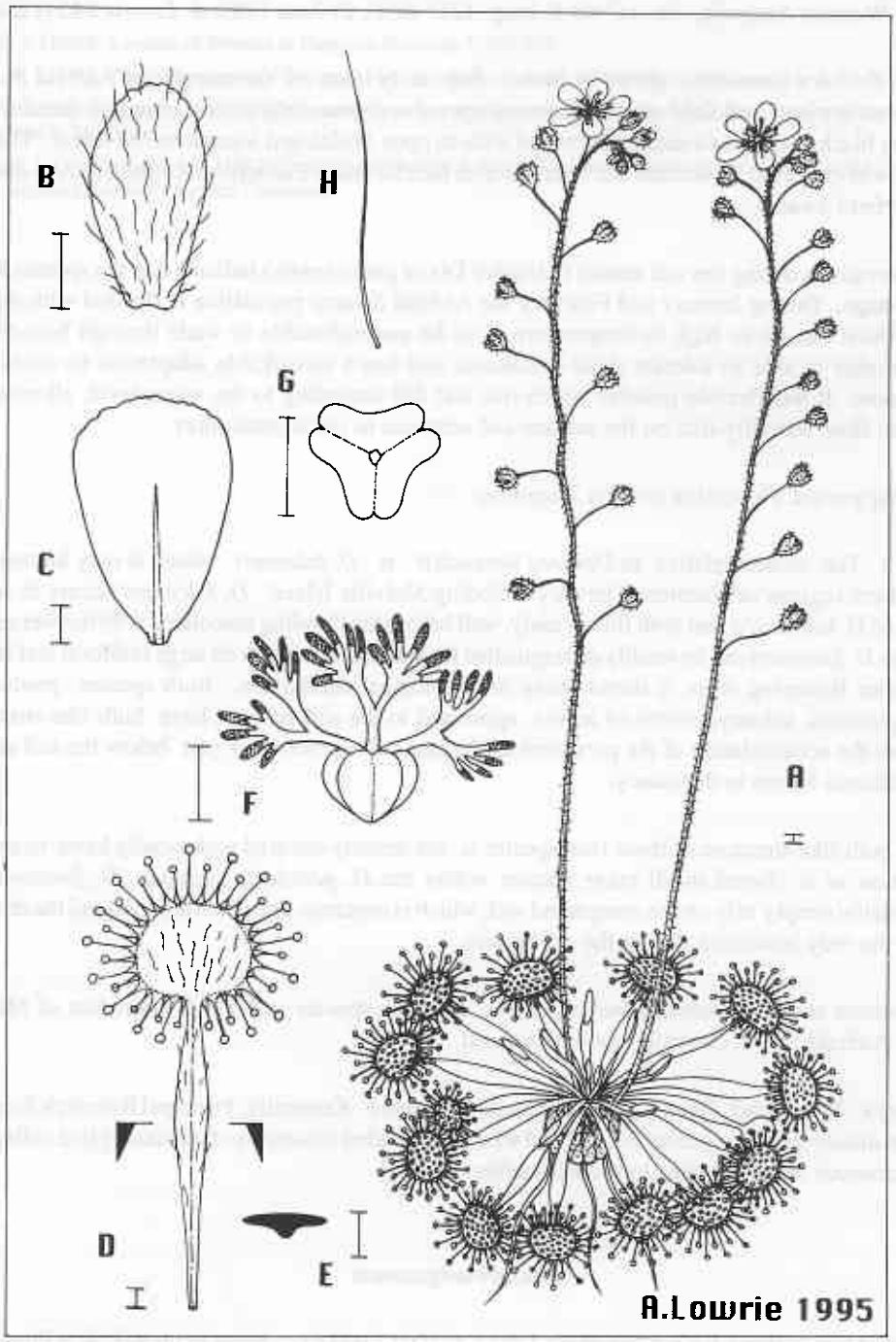

Figure 1. *Drosera kenneallyi* A- plant showing habit, B - sepal, C - petal, D - leaf, E - section through leaf, F - gynoecium, G - 3-capellate ovary, base view, H - simple hair from leaf, not to scale. Scale bar for all = 1 mm.

Other specimens examined. WESTERN AUSTRALIA: S.E. margin of Airfield Swamp, Mitchell Plateau, Western Australia, lat. 14° 46' S, long. 125° 49' E, 21 June 1993, *A. Lowrie* 743 (PERTH).

Habitat. Drosera kenneallyi grows in brown fine sandy loam on the margins of Airfield Swamp. The habitat is a low herbfield situated between open *Eucalyptus latifolia* woodland on lateritic soils and a wet black silty soil swampland covered with an open *Melaleuca leucadendron* forest. The type material was collected in skeletal soil over hardpan laterite under *Eucalyptus latifolia* a short distance from Airfield swamp.

Observations during the wet season (Kingsley Dixon pers. comm.) indicate that the species has an aquatic stage. During January and February the Airfield Swamp population is flooded with shallow water, which can be so high in temperature as to be uncomfortable to wade through bare-footed. *D. kenneallyi* is able to tolerate these conditions and has a remarkable adaptation to avoid total submersion. It has flexible petioles which rise and fall according to the water level, allowing the lamina to float waterlily-like on the surface and continue to catch insect prey.

Flowering period. November to early December.

Affinities. The closest relative to *Drosera kenneallyi* is *D. falconeri* which is only known from the northern regions of Northern Territory including Melville Island. *D. falconeri* occurs in similar habitats to *D. kenneallyi* and both flower early, well before the flooding associated with the wet season. Although *D. falconeri* can be readily distinguished from *D. kenneallyi* by its large reniform leaf lamina and shorter flowering stem, it shows many morphological similarities. Both species produce an almost glabrous, solitary, rosette of leaves appressed to the soil surface, have bulb-like structures which are the accumulation of the persistent fleshy leaf bases positioned just below the soil surface and deciduous leaves in dormancy.

The bulb-like structure of these two species is not densely covered with woolly hairs to prevent desiccation as is found in all other species within the *D. petiolaris* complex. *D. falconeri* and *D. kenneallyi* simply rely on the compacted soil, which is concrete-like when dry, around the dormant bulb as the only insulation during the dry season.

Conservation status. Drosera kenneallyi is a common species within a 5 km radius of Mitchell Plateau Airfield and is currently not under threat.

Etymology. The epithet, *kenneallyi* is in honour of Kevin F. Kenneally, Principal Research Scientist, who first discovered this species in 1982 and who has provided thousands of valuable plant collections from numerous botanical trips to the Kimberley region.

Acknowledgements

I would like to thank the leaders of the 1993 LANDSCOPE Expedition to the Mitchell Plateau for the opportunity to collect material of *D. kenneallyi* in the Kimberley, and to the expedition members for their assistance and companionship in the field. My thanks also to the staff of the Western Australian Herbarium for their assistance.

References

Conn, B. J. (1980). A review of *Drosera* in Papuasia. Brunonia 3: 209-216.

Kondo, K. (1984). Three new species of *Drosera* L. from Australia. Boletim Da Sociedade Broteriana ser. 2, 57: 51-60.

Lowrie, A. (1994). *Drosera ordensis* (Droseraceae), a new tropical species of carnivorous plant from northern Australia. Nuytsia 9: 363-367.

Marchant, N.G. & George, A.S. (1982). *Drosera*. *In:* George, A.S. (ed.) "Flora of Australia." Vol. 8. pp.383-385. (Australian Government Publishing Service: Canberra.)