

***Drosera ordensis* (Droseraceae), a new tropical species of carnivorous plant from northern Australia**

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Abstract

Lowrie, Allen. *Drosera ordensis* (Droseraceae), a new tropical species of carnivorous plant from northern Australia. Nuytsia 9 (3): 363-367 (1994). A new species, *Drosera ordensis* (Droseraceae) is described from tropical northern Australia. The features that distinguish this taxon from its nearest relatives are presented and an indication is given of its habitat preferences.

Introduction

Kondo (1984) studied the lectotype of *D. petiolaris* represented by a Banks and Solander (1770) collection (BM 40139) from the Endeavour River in north Queensland, Australia. He recognised species in the *Drosera petiolaris* complex, three of these he described as new, *D. dilatato-petiolaris* Kondo, *D. falconeri* Kondo & Tsang and *D. lanata* Kondo. The author (AL) has seen the lectotype, examined by Kondo, and a photograph of a duplicate fragment in GDC, has collected and grown all the taxa in the *D. petiolaris* complex, and can confirm that they are good species. All these species except *D. falconeri* have been recorded for Western Australia. This paper describes the new species *Drosera ordensis* from near Kununurra, Western Australia.

The new species belongs in subgen. *Drosera*, sect. *Lasiocephala* Planchon (Marchant & George 1982). Six species are now listed in this section: *D. dilatato-petiolaris* Kondo, *D. falconeri* Kondo and Tsang, *D. lanata* Kondo, *D. ordensis* Lowrie, *D. petiolaris* R.Br. ex DC. (also recorded from Papua New Guinea by Conn 1980), and one species, *D. caledonica* Vieill. (confined to New Caledonia).

Key to *Drosera* section *Lasiocephala*

1. Leaf lamina narrowly obovate; inflorescence (including scape) covered with short glandular hairs *D. caledonica*
1. Leaf lamina orbicular, suborbicular or reniform; inflorescence (including scape) covered with non glandular, long woolly hairs 2
2. Leaves sparingly covered with adpressed hairs, each hair simple or bearing a few small spurs, petiole visible through the hairy indumentum 4
2. Leaves densely covered with dendritic hairs, each hair bearing many long lateral spurs, petiole hidden by the dense hairy indumentum 3
3. Petiole linear with a maximum width 1-1.5 mm; lamina suborbicular, 2-2.5 mm long, 2.5-3 mm wide; pedicels 1.5-2.5 mm long *D. lanata*
3. Petiole oblanceolate with a maximum width 2-4 mm; lamina suborbicular, 3-4 mm long, 3.5-5 mm wide; pedicels 2-4.5 mm long *D. ordensis*
4. Leaf lamina reniform, 1.5 cm long, 2 cm wide *D. falconeri*
4. Leaf lamina orbicular or suborbicular 2.5-3.5 mm wide 5
5. Petiole oblanceolate with a maximum width 2.5-3 mm; pedicels 3-7 mm long *D. dilatato-petiolaris*
5. Petiole linear with a maximum width 0.4-0.8 mm; pedicels 1-1.5 mm long *D. petiolaris*

Drosera petiolaris complex

Drosera ordensis is clearly related to other tropical *Drosera* species in the *D. petiolaris* complex. This new species is a perennial having fibrous roots, a basal rosette of leaves with a bulb-like structure of fleshy leaf bases, and an inflorescence (including the scape) covered with long woolly hairs. *D. ordensis* differs from all other species within the *D. petiolaris* complex by having oblanceolate petioles densely covered with long woolly dendritic hairs.

D. falconeri Tsang & Kondo sheds all its above surface leaves and retreats to a dormant bulb-like arrangement just below the hard-baked soil surface where it lies fully protected during the dry season. The bulb-like structure of *D. falconeri* is formed from the tightly packed accumulation of the persistent fleshy bases of the spent leaves.

D. lanata Kondo, however, forms a central bud of leaf bases (above ground) densely covered with white dendritic hairs to protect the dormant centre of the plant from desiccation during the dry season. The dense hairs are also capable of capturing any available moisture, such as that from condensation, as a further aid for survival during this period. The new species, *D. ordensis*, is also densely covered with white dendritic hairs and uses the same dry dormancy adaptation as *D. lanata*.

Description

Drosera ordensis A. Lowrie, sp. nov.

Drosera lanata Kondo affinis sed petiolo oblanceolato 2-4 mm lato, lamina 3.5-5 mm lata, scapo (inflorescentia includenti) 20-45 cm longo.

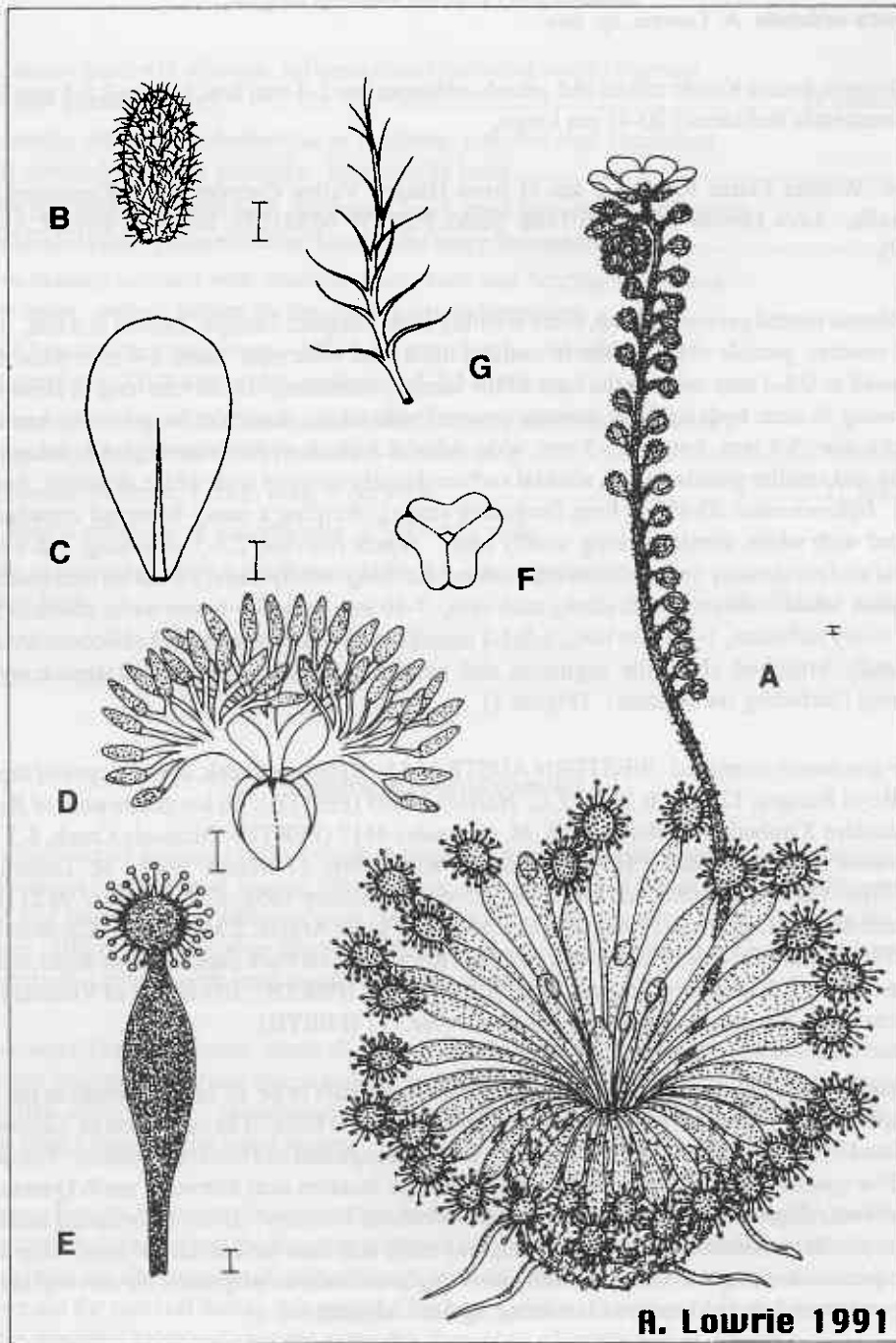
Typus: Weaber Plains Road, 7.6 km N from Hidden Valley Caravan Park, Kununurra, Western Australia, Allen Lowrie 4, 1 April 1988 (holo: PERTH 03391175; iso: BRI, DNA CANB, MEL, NSW).

Fibrous rooted *perennial herb*, often forming large compact clumps. *Leaves* in a flat, semi-erect basal rosette; *petiole* oblanceolate in outline, 0.5-1 mm wide near base, 2-4 mm wide near apex, narrowed to 0.8-1 mm wide at the base of the lamina, commonly 35-50 mm long at flowering, later increasing in size, both surfaces densely covered with white, dendritic, long woolly hairs; *lamina* suborbicular, 3-4 mm long, 3.5-5 mm wide, adaxial surface with retentive glands marginal on the lamina and smaller glands within, abaxial surface densely covered with white, dendritic, long woolly hairs. *Inflorescence* 20-45 cm long (including scape), forming a many-flowered crowded raceme, covered with white, dendritic, long woolly hairs. *Sepals* obovate, 2.5-5 mm long, 1.2-3 mm wide, abaxial surface densely covered with white, dendritic, long woolly hairs; *petals* various shades of pink to almost white, obovate, with strong mid-vein, 7-10 mm long, 3.5-6 mm wide; *stamens* 3.5-4 mm long; *ovary* turbinate, 1-1.5 mm long, 1.5-1.7 mm diam. at anthesis, *carpels* 3, bilobed; *styles* 3, each repeatedly branched above the segments and terminating in a narrowly ovoid stigma, styles 2.7-3 mm long (including the stigmas). (Figure 1)

Other specimens examined. WESTERN AUSTRALIA: Revolver Creek, upper slopes of the southern Carr Boyd Ranges, 12 March 1978, T.G. Hartley 14503 (PERTH); 20 km north-west of Kununurra, northeastern Kimberley, 7 March 1978, M. Lazarides 8417 (PERTH); Bindoola Creek, 8.5 km west-south-west of Home Valley HS, northeastern Kimberley, 17 March 1978, M. Lazarides 8610 (PERTH); Carlton Hill Station, lower Ord River, 21 January 1951, C.A. Gardner 9823 (PERTH); Between Smoke Creek and Flying Fox Creek, SW of Lake Argyle, 2 May 1980, A.S. Weston 12211 (PERTH); 2.8 km SE from the entrance of Zebra Rock Farm on Pack Saddle Plains Road, then 3.5 km SW on dirt track, Kununurra, 16 June 1993, A. Lowrie 708 (PERTH); 100 m SW of Victoria Highway, 22.9 km SE of Kununurra, 16 June 1993, A. Lowrie 712 (PERTH).

Affinities. The closest relative to *Drosera ordensis* appears to be *D. lanata* Kondo as the leaves of both species are densely covered with long woolly dendritic hairs. The collection of Lazarides 8610 was listed by Kondo (1984) as *D. lanata* but is here recognised as *Drosera ordensis*. The author has seen live specimens of *D. lanata* in the field at the type location near Mareeba, north Queensland and on the West Alligator River West Branch in the Northern Territory. Both *D. ordensis* and *D. lanata* grow in similar habitats, in sandy soils in regions more arid than the habitats of most other species in the *D. petiolaris* complex. The dense hairy covering is no doubt an adaptation for survival in this harsh environment and probably acts as insulation against desiccation.

The dense dendritic hairs of *D. lanata* capture minute droplets of water from the moisture laden early morning air. These minute droplets combine with each other to form larger droplets at the base of each hair which eventually fall to the soil at the base of the plant.



A. Lowrie 1991

Figure 1. *Drosera ordensis* A - plant showing habit, B - sepal, C - petal, D - gynoceium, E - leaf, F - 3-carpellate ovary, base view, G - dendritic hair from leaf, not to scale. Scale bars = 1 mm.

Habitat. *Drosera ordensis* grows in sandy soils derived from sandstone rock. Large colonies of plants are commonly found near banded sandstone rock outcrop formations. Here the soil remains moist longer than in the surrounding open plains country because of the additional rain runoff from the nearby rock formations. The overall region is open woodland and the habitat is often well-covered with tall cane grass (*Sorghum* species). The cane grass is not thick and therefore quite open to the light at ground level. It is here amongst the cane grass stems, that offer just a little shade relief from the sun, that *D. ordensis* thrives.

Notes. The dry season is generally from May-November, however, shallow depressions, spring fed watersheds, rock outcrop areas and flood plains remain moist for long periods well into the dry season. Heavy condensation is also deposited on all low growing vegetation from early morning mists that have been observed close to the ground in the early months of the dry season.

The tropical *Drosera* species of Northern Australia in the *D. petiolaris* complex have evolved a number of different growth and dormancy strategies to suit their typical soil type and habitat preferences during the wet and dry seasons. The dry season is hot and extremely dry.

The species of the *D. petiolaris* complex (*sensu* Kondo 1984), respond to the first rain of the wet season by rapidly producing new leaf growth and inflorescences. By the time the heavier rains arrive, well into the wet season, flowering is well-advanced for most species of this complex, however *D. dilatato-petiolaris* and *D. falconeri* have finished flowering by this time. Leaf growth continues rapidly throughout this season, especially after anthesis. Most species in the complex grow in habitats that for the most part remain moist longer than the surrounding higher ground. Therefore the length of the dry period in these habitats is considerably shorter and dormancy in these species does not commence until well into the dry season.

Conservation status. *Drosera ordensis* is a common species within a 50 km radius of Kununurra and is not under threat.

Etymology. The epithet, *ordensis*, refers to the alluvial valley of the Ord River in which this species grows.

Acknowledgement

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