

CARNIVOROUS PLANTS NEAR MT. LESUEUR, WESTERN AUSTRALIA

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On the weekend of September 16 and 17, 1995, I had the pleasure in participating in a vegetation survey on a farm near Mt. Lesueur, approximately 250 km north of Perth. During this survey thirteen species of *Drosera* and the northern form of *Byblis gigantea* were found in the remnant native vegetation. These are described below.

Byblis gigantea

Byblis gigantea plants were found in two hill-slope locations. They grew in dry surfaced soil which consisted of a thin cover of fine, white, possibly wind transported quartz sand with a variable proportion of ironstone fragments derived from the underlying laterite. The plants were found on disturbed ground along fire-breaks, and would have undoubtedly have occurred in the adjacent undisturbed low kwongan¹ vegetation.

At least ten mature plants in active growth were found at each site, some of which had commenced flowering. The plants grew to 30 cm tall, had one to three stems each, and bore erect linear leaves which were up to 22 cm long. At the lower part of the stem the leaves were close together, with 1 to 3 mm internodes. The more recent growth had internodes 1 to 2 cm apart and single, axillary flowers, the latter though were not present in the lowest 2 cm of more rapid stem elongation. The pedicels were just shorter than the leaves and held a single, outfacing iridescent purple-petalled flowers ranging up to 3 cm in diameter. A single seedling with leaves 5 cm long and a poorly developed stem was found at one site.

The plants were fully bedewed and had caught a range of flying insects, including aphids, midges and a smaller number of bush flies. Most plants had at least two lime-green *Drosera* bugs on them which moved readily over the bedewed plants. No insects were seen visiting the open flowers.

These plants are part of the northern population which differs from plants around Perth. These plants are generally smaller, produce stems with less branching, and bear shorter leaves. They grow in well drained soil on hill-slopes and had petals of the same colour throughout. The southern population prefers to grow in deep sand on the edge of swamps, and the intensity of pigment in the petals is not uniform.

Drosera barbigera

Large numbers of the attractive and robust pygmy sundew *Drosera barbigera* were seen on the top and flanks of one of the laterite hills on the property. The plants grew in

¹kwongan is a term coined by Beard (1990) to describe the "heath-like" plant community which has evolved in the southwest of Western Australia, especially on the sand plains. This species-rich vegetation is rich in sclerophyllous species which have evolved in an environment characterized by frequent fires.

ironstone soil, with variable amounts of sand, often in colonies of a few tens to hundreds of plants. The semi-erect rosettes grew to 3 cm diameter, on the end of (often prostrate) stems measuring 5 cm long. Many plants were in flower, with one to two scapes each. These grew to 10 cm long and had a tight cluster of flowers with conspicuously hairy sepals. The vibrant orange-petalled flowers, to 1 cm diameter, were all open under sunny conditions, and some remained open in cloudy conditions when growing under the protection of low shrubs. The petals had a dark red base and were adjacent to the similarly coloured ovary and three threadlike styles. The anthers produced pale yellow pollen which stood out against this dark coloured zone. A brown beetle was seen visiting one flower and may act as a pollinator.

Drosera eneabba

Large colonies of the pygmy sundew, *Drosera eneabba*, grew in sandy soil on the flanks of laterite plateaus. The glistening rosettes, up to 2 cm diameter, were seen in abundance on the fire trails. The orbicular red tentacled lamina occurred at the end of straight-sided petioles and formed a flat rosette. Many plants were in flower and had one (rarely two) scapes to 15 cm tall. The sweetly scented white petals have a distinctive red dot near the ovary. These were still flowering in late October (Hislop, 1996).

Drosera erythrorhiza (subsp. *magna*?)

Scattered colonies of closely spaced rosettes of a *Drosera erythrorhiza* subspecies were seen throughout the farm in areas of deep sand, and on the edge and top of laterite plateaus. The vivid red rosettes, with up to eight leaves, were up to 8 cm in diameter, although most were smaller. The majority of plants had begun to die down although a few plants still had bedewed leaves. A few plants retained their scapes, which had already shed their seed. From the number of leaves and the size of the plants they were tentatively ascribed to subspecies *magna*, although some colonies might have been subspecies *erythrorhiza*. The closely spaced colonies of these plants indicates either that some asexual reproduction occurs or that the seed generally does not travel far from the parent plant. To determine the identity of this taxon it would have been necessary to looking at the root system and by checking the timing of flowering with respect to maturation of the rosette. Whatever its identity it is a large and beautiful plant in leaf.

Drosera gigantea subsp. *gigantea*

Scattered plants of the erect growing tuberous *Drosera gigantea* subsp. *gigantea* were seen in two locations in the area. One was in a creek bed in water to 10 cm deep, and adjacent parts of the bank where plants to 40 cm tall were seen. These were in bud with many branches, few of which had mature leaves. The second site was in deep sand several hundred metres from the nearest creek bed. Some of these plants were already in flower and many had started to go dormant. These bore the shrivelled remains of aborted inflorescences. At the second site a few plants had deep red stems.

Drosera glanduligera

Flowering rosettes of the annual *Drosera glanduligera* were found in the area. They grew on the south facing slope of a laterite plateau in sandy soil in the company of *D. marchantii* subsp. *prophylla*, and also grew in deep sand with *D. gigantea* subsp. *gigantea*. The golden green rosettes grew to 3 cm in diameter and had up to 3 scapes.

Drosera macrantha subsp. *macrantha*

Scattered plants of the climbing tuberous sundew, *Drosera macrantha* subsp. *macrantha*, were found growing on laterite plateaus and also in deep sand. At the time of the visit the species had finished flowering and was starting to die down. This species was recognised by the relatively thick (2–3 mm diameter) stem, generally golden green colour, presence of glandular hairs on the upper part of the stem, (including the inflorescence and leaf pedicels), and circular down-facing leaves borne in threes, the central one of which had a long pedicel, up to approximately 8 cm long.

Drosera marchantii subsp. *prophylla*

Scattered plants of the erect growing tuberous sundew *Drosera marchantii* subsp. *prophylla* were found growing on the flanks of laterite hills growing in sand and laterite. The plants had finished flowering, and a few had already shed their seed. The golden green plants grew approximately 25 cm tall, had conspicuously inflated bases which were covered by a numerous linear scale-like leaves, had few-flowered inflorescences with flowers held on relatively long scapes, had leaves held singly on the stem, and often grew in small groups of up to four plants. These plant groups probably derived from natural division of the tuber.

Drosera menziesii subsp. *menziesii*

A few plants of the slender climbing tuberous sundew *Drosera menziesii* subsp. *menziesii* were found near the creek, and were also found in greater abundance in deep sand near Moore River. The plants were in flower at the time of the visit and had red, slender glabrous climbing stems up to 30 cm tall. The round leaves were borne along the stem in threes, and the pedicels were generally less than 2 cm long. The deep pink-petalled flowers were fragrant and had hairy sepals.

Drosera menziesii subsp. *thysanosepala*

A large number of the slender climbing tuberous sundew *Drosera menziesii* subsp. *thysanosepala* were found growing in kwongan vegetation on the upper parts of laterite plateaus in sandy ironstone soil. The plants were very red in colour, lacked hairs (except for the sepal margins), and had leaves in threes alternating up the stem. The pale pink flowers were open (even though it was overcast), were sweet smelling and almost circular in outline. I observed a hover fly visiting one flower, perhaps feeding on pollen. It may act as a pollinator.

Drosera miniata

Abundant plants of the pygmy sundew *Drosera miniata* were found on the upper portions of the laterite plateaus. They grew in soil composed of ironstone and a variable content of sand. In sandier soils they sometimes grew with *D. eneabba*. The flat rosettes grew up to 1.5 cm in diameter, which were often hard to see. The most conspicuous feature of this species were the open flowers, to approximately 8 mm in diameter, which had iridescent orange petals with dark red, almost black veins radiating out from the center. The black ovary was surmounted by three thread-like styles. The dark red coloured stamens were not a conspicuous feature of the open flowers.

Drosera miniata often grew with *D. barbigera* and the two often flowered together. It was interesting to note that the flowers of both species were very similar in coloration and size, yet there were no signs of hybrids between these species.

Drosera pallida

A few plants of the climbing tuberous sundew *Drosera pallida* were found growing near the top of several laterite hills. This species had finished flowering and was starting to die down at the time of the visit but was identified from the other climbing sundews by the following: a glabrous stem usually 2 mm diameter; glabrous sepals; a general lime green colour to the plants; rounded, down facing lamina, borne in threes with pedicels often 2–4 cm long. Observations from June 1996 (Hislop, 1996) suggest this species may be locally common on laterite-derived soils.

Drosera stolonifera subsp. *humilis*

A few plants of the tuberous sundew *Drosera stolonifera* subsp. *humilis* were found at the farm, growing in sandy soil on the mid-slope of a laterite hill and on an adjacent property on flat ground near a creek. These many branched plants had stems to approximately 12 cm long and had no signs of the remains of inflorescences. The whorled leaves had petioles which were circular in cross section. The upper corners of the triangular lamina folded up towards each other. The slender stolon grew along the ground surface for up to 3 cm after it had emerged from above the tuber.

D. stolonifera subsp. *porrecta*

An abundance of the tuberous sundew *Drosera stolonifera* subsp. *porrecta* grew on the property on the flanks and upper portions of the laterite hills. The plants emerged vertically above the tuber and immediately formed two rosettes of short petioled leaves. The plants varied in the amount of branching which occurred above the two basal rosettes. Plants produced between one and five erect stems up to 20 cm tall. The mature leaves were borne in whorls, had furrowed petioles. Although they were triangular in outline, the upper corners were folded back so that they were almost in contact, which resulted in an almost circular appearance to the leaf blade outline. Many of the branching plants had flowered and had shed most of their seed. The inflorescences emerged from the top of the upper basal rosettes at the base of the branches. Most plants grew singly although a few had divided once.

Two other species of *Drosera* have been found on the property but were not seen during this visit. The erect tuberous sundew *Drosera microphylla* had been seen in flower on laterite hills on the property in early winter. The plants had orange petals. The pygmy sundew *D. echinoblastus*, also orange-petalled, was seen flowering in abundance in late October along the creek lines (Hislop, 1995; 1996).

The area near Mt. Lesueur has a remarkably diverse flora, as indicated by the range of carnivorous plants which were seen there. It is a botanist's delight to spend time in the area.

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