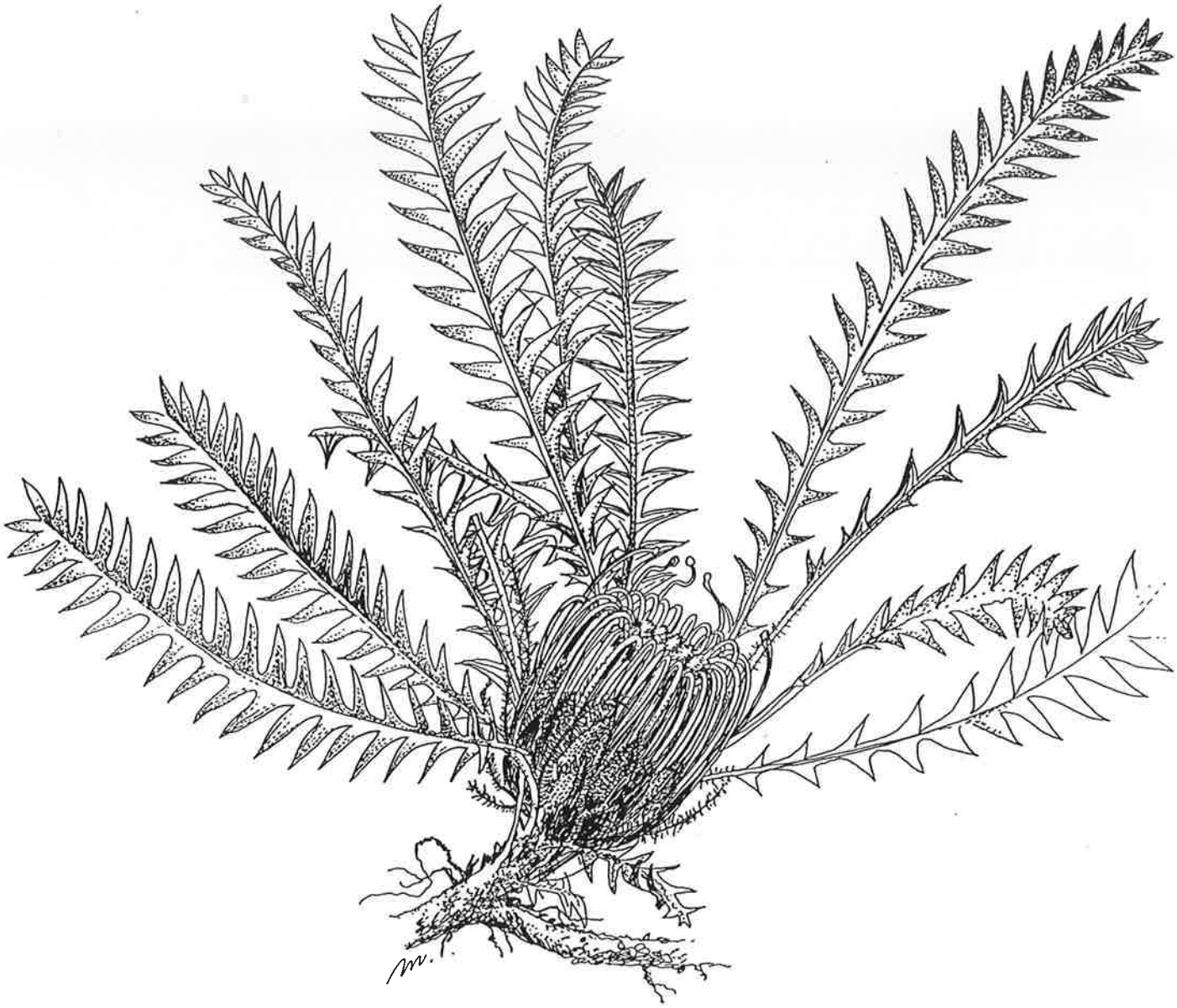
DRYANDRA STUDY GROUP

NEWSLETTER NO. 32



Dryandra lindleyana subsp. *sylvestris*

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SOCIETY FOR GROWING AUSTRALIAN PLANTS

DRYANDRA STUDY GROUP

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Welcome to our first Newsletter for 1997. I hope that your garden is faring a little better than mine. Our January was the hottest and driest on record and February is shaping up the same way. I know that Perth has also had many very hot days and I wonder how everyone's dryandras are surviving. I've lost a lot of small seedlings (maybe Autumn is the best time to grow dryandras, even in southern Victoria) although everything in the garden apart from one ***D.nervosa*** has so far survived. I'd be interested in reports on how your dryandras have handled this summer, in particular information on species which appear to be especially reliable.

I have not paginated this newsletter in the usual way because of the various sections you might wish to remove. Margaret has prepared an excellent summary of the main characteristics of that (now) very confusing group of dryandras in subgenus Niveae. Together with the leaf prints, this should help make recognition of many of these species a little easier. New member David Lightfoot has given us another index to compliment the excellent species index prepared by David Randall. Thanks, David, I'm sure that everyone will find it helpful. Just looking through it, I was surprised at just how many topics we'd covered in the 31 issues of the Newsletter up to now.

The remaining pages are additions or changes for the Key published in Newsletter No. 30 and Occasional Publication No. 3. Despite all Margaret's and Alex's best efforts, a couple of minor omissions were found on page 1 and two descriptions were transposed on p.4. It is probably easiest to replace pages 1 and 2 of your key with these new pages and paste the small correction onto page 4. I have also included a single page 'How to use keys' prepared by Margaret, which might assist members to understand the key. It is worthwhile practicing with a flowering specimen of a known species to see if you can key it out. It is a great thrill the first time that you succeed and subsequent trys are usually easier once you get the hang of the process.

We need your help

I am busily preparing descriptions of species for the Dryandra book. The taxonomic treatment is based on Alex George's revision and Margaret is editing and adding ecological and other information. We need cultivation information on many of the newly described species, some of which have been grown for years under other names or under Ted Griffin or Alex George numbers. These are asterisked in the list below. If you have any details - germination, garden performance, other comments - on any of these species could you please send me a note. Any extra material will help make the final book more useful and complete.

Happy Dryandra growing,

Tony

Tony Cavanagh
Newsletter Editor

If you have any information on any of the asterisked species below, please send Tony a note.

Some Confusing Taxa in Subgenus Niveae

In this group, the flowers arise from a receptacle which is markedly convex. They are situated around a central hole which contains the nectar, hence the common name "honey pots."

Species discussed here are: *Dryandra lindleyana, D. arctotidis, D. tortifolia, D. brownii, D. stenoprion, D. cypholoba* and *D. nivea.*

Dryandra lindleyana.

The species has underground or erect stems that re-sprout after fire. Previously included in *D. nivea*, it can be most easily distinguished by this character. *D. nivea* is killed by fire as it has no lignotuber. *D. lindleyana* is extremely variable, 5 subspecies have been described, one with two varieties.

Flowers in all of the species discussed are very similar. The superficial differences being mainly in colouration, size and number per inflorescence. For the purposes of this article I haven't given a lot of descriptive detail of floral characteristics. In *D. lindleyana* as in several other taxa in this group populations may contain a variety of colours and colour combinations from plant to plant.

Dryandra lindleyana subsp. *lindleyana* var. *lindleyana.*

This prostrate species with underground stems re-sprouts readily after fire. It occurs near the coast from Geraldton to Cape Naturaliste including bushland and coastal situations in the Perth metropolitan area. I was told recently that one of the early botanist explorers walked over it, unable to avoid trampling plants. I was interested to learn this, as it would seem to bear out my observation that the species is declining rapidly in suburban bushland due to too-frequent burning. It sets very little, or no seed, unlike var. *mellicula* which also occurs naturally in suburbia.

I would think that var. *lindleyana* would strike easily from cuttings, especially from new growth after fire.

Leaves vary in length, width and size of lobes. Flowers, 50-70 per head vary in colour. Styles may be yellow, yellow with red, golden brown, dull pink to rich dark red. The colour of the limb (its hairs) may be cream, yellow brown to rich golden brown. Involucral bracts, 15-35 mm long, glabrous to densely pubescent with densely ciliate margins may be yellow-green, yellow or golden brown.

As previously mentioned this is a more or less coastal species growing in sand often over limestone or in banksia woodland.

The seed capsule is dark brown. As with all of the taxa described here it has one seed per capsule and the separator is papery.

I have seen this species grown successfully in South Australia and Victoria where it has been known as *Dryandra nivea.* It grows naturally in bushland near my home and a plant in my garden is growing well and has flowered. It flowers in July-August.

Dryandra lindleyana subsp. *lindleyana* var. *mellicula*

mellicula - from the Latin *melliculus* (a little honey) a reference to the common name, "honey pots."

This variety has mostly erect stems. It is the only one in the species which is not prostrate. It is, nethertheless, low growing. This growth habit and the more coarsely-lobed leaves distinguish it from var. *lindleyana.* It grows in laterite gravel on the Darling Plateau and Scarp, east of Perth and south to Cape Naturaliste. It is occasionally found in sand in woodland.

Flowers are similar to var. *lindleyana.* Flowering is from July to September.

Because of its more or less erect habit this variety was previously considered to be "typical" *D. nivea.* However, being lignotuberous and hence fire tolerant puts it into the *lindleyana* type.

Suburbs in the Darling Range east of Perth are the natural habitat of this variety and plants in gardens there, flower and set seed readily.

A plant in my garden flowers well but has not set seed.

Dryandra lindleyana subsp. *pollosta*

Pollosta - from Greek *pollostos* (smallest, least) because of the small leaf lobes.

This subspecies has very narrow leaves with small lobes similar to *D. nivea* from which it differs because of its prostrate habit. With short underground stems, it forms clumps to 1 m across.

It occurs in sand in woodlands or laterite and sand in heathland from the Moore River National Park, west of Gillingarra and to Moora and Watheroo National Park. South of its distribution it apparently grades into subsp. *lindleyana.*

Flowers are similar to subsp. *lindleyana* but with fewer per head. It flowers in August.

I don't know of this subspecies in cultivation. It is a very attractive plant with a neat habit, in the wild.

Dryandra lindleyana subsp. *media*

Media - refers to the intermediate morphology of the subspecies.

The leaves of this subspecies are wide, 7-10 mm. They are a bluish green colour similar to *D. cypholoba* but can be distinguished by their stiff and non-curling lobes.

The underground stems are fairly short and plants form clumps to 50 cm across.

It grows in sand between Eneabba and Mingenew.

Flowers are yellow with golden brown bracts and appear in July to August.

I have propagated this very attractive plant and it seems to be fairly hardy. The leaf and flower colours contrast beautifully. *D. cypholoba* is similarly coloured.

Dryandra lindleyana subsp. *agricola*

As the name suggests - Latin *ager* (a field) + *cola* (growing in), this subspecies is found in the agricultural (wheat belt) area of the south west. Only a few populations are known, at present, between Corrigin and Traysurin.

The leaves, 8-13 mm wide, are fairly short to 17 cm, rigid and a dark bluish green colour.

It grows in sandy loam and laterite in heathland. Short stems are mostly underground forming small clumped plants.

The flowers are all yellow. The late flowering period, September-October is distinctive. The seed follicles are smaller and blunter than other subspecies.

I have this subspecies growing. It is doing well but has not flowered in about 7 years.

Dryandra lindleyana subsp. *sylvestris*

Sylvestris - Latin *sylvestris* (of woods or forests)

Again, the name indicates the habitat of this subspecies. It grows in jarrah-marri forest on the Darling Plateau. Plants in southern populations have shorter leaves with narrower lobes and form dense clumps resembling, except for the colour, *D. nana.* The latter has blue-green leaves. In the forest south west of Perth, plants are often more sprawling with leaves of varying lengths and widths on the same plant. Leaf lobes tend to be wider. Where I have observed this feature, along Albany Highway, the forest is regularly burned. This may have a bearing on the plant form as it has to re-sprout almost every year.

Normal plants have short underground stems and form small clumps.

Flowers are similar to subspecies *lindleyana* with all colour variations present.

It is distinguishable by the wide, bright green leaves and late, September-October flowering period.

I do not know of this subspecies in cultivation. The fine-leafed, dense clumping form is very attractive.

Dryandra arctotidis

The leaf lobes of this species are very narrow and almost parallel -sided, not triangular. (pinnatipartite). They are angled to the midrib forming a V in cross-section. Leaves are 8-15 cm long.

This is a prostrate plant with mostly underground stems forming clumps to 70 cm across.

Flowers are similar to *D. lindleyana* but are typically all yellow. In populations where it grows with *D. brownii*, however, colour variations occur and leaf lobes are sometimes wider, suggesting that a certain amount of hybridization happens. *D. arctotidis* possibly also hybridizes with *D. lindleyana* which would account for small "tufted" plants with narrow, triangular lobes which occur towards the northern limits of *D. arctotidis*.

D. arctotidis occurs from to Ongerup, in the Stirling Ranges and south towards Albany, growing in sand or sand over gravel. Flowering is in September.

It can be distinguished from *D. tortifolia* by the shorter leaves, southern location, and earlier flowering and flower colour.

I have a plant of this species in my garden. It is not thriving and has not flowered. In the past many other taxa including subspecies of *D. lindleyana* and in particular *D. brownii* have been confused with *D. arctotidis*. This is ironic considering that *D. arctotidis* grows naturally from where the commercial seed and plant suppliers who were apparently responsible for the mis-naming, operate.

Dryandra tortifolia

This species is very similar to *D. arctotidis* of which it was previously a variety.

The leaves are 10-17 cm long and sometimes twist at the top so that the upper part is more or less horizontal.

With underground stems, it usually forms a larger clump than *D. arctotidis*, to 1 m across. It grows in sand and sand over laterite in heathland between Cataby and Eneabba.

Flowers, similar to *D. arctotidis*, have yellow to red styles and white hairs on the limb. It flowers in October.

Dryandra brownii

This is a dense shrub to 70 cm high, without a lignotuber, hence killed by fire and non-suckering.

The very attractive leaves are dark blue-green, 15-35 cm long and generally wider than *D. lindleyana*. Plants growing in the eastern Stirling Ranges have wider leaves up to 25 mm. Leaf-lobes are more obtuse than triangular (pinnatisect)

Where this species grows with *D. arctotidis* various colour forms occur, suggesting some hybridization. In "pure" populations the flower colour is dull pink. Flowers are larger than most in subgenus niveae.

It occurs from Cranbrook to the Fitzgerald River National Park. Common in the Stirling Ranges, it has been previously mis-identified as *D. nivea*. Some collections, however, have narrower leaves with more triangular-shaped lobes. Perhaps there are intermediate or hybrid plants.

Flowering is in August.

This is one of the most attractive and widely grown in the group. I often found it growing in gardens in South Australia and Victoria. It was purchased as *D. arctotidis* whether as plants or seed. I believe it has flowered in the eastern states. I had a plant for several years which never flowered. The foliage alone is compensation, however.

Dryandra stenoprion

Greek *steno* (narrow) + *prion* (a saw)
This species has stiff leaves with a thick, yellow midrib. The leaf lobes are revolute towards the top of the leaf where they overlap those below.

It has underground stems and forms clumps to 75 cm across.

Occurring in association with *D. tortifolia* and *D. nana* it has been found to hybridize with both of these species.

Flower colours are unusual. The bracts are golden brown, the style is golden yellow and the limb purplish brown or mauve. All-yellow flowers also occur but are not typical.

It grows in sand or sand and laterite from Badgingarra to Eneabba and flowers from June to August.

It is distinguishable by its stiff leaves with revolute, overlapping lobes at leaf apices and distinctive flower colour.

I had a plant of this species which formed an attractive, neat clump 30 cms across. It was about to flower for the first time when it suddenly died.

Dryandra cypholoba

From the Greek *kyphos* (bent, humped) and *lobos* (a lobe) because of the recurved, hump-like leaf lobes, a distinguishing feature of this species.

The leaves are an attractive pale blue-green with wide triangular lobes which curve back.

It has underground stems and forms clumps to 50 cm wide.

Flowers are bright yellow with a pale pinkish brown or yellow limb, appearing in August.

The distribution of this species is fairly restricted - from west of Arrino to Alexander Morrison National Park. It grows in sand and gravelly loam.

Seed capsules are smaller and blunter than those of *D. lindleyana.*

Distinguishable from *D. lindleyana* subsp. *media* by the softer leaves with recurved lobes.

Dryandra nivea

D. nivea differs from the previous species in its growth habit. Only *D. brownii* shares its feature of being non-lignotuberous and hence killed by fire.

D. nivea subsp. *nivea,* subsp. *ulginosa* and D. "Morangup" are among the dryandras with an unusual (unique to dryandras?) "mounding" growth habit. There doesn't seem to be a word for it. "Dichotomously much-branched" is how Alex George describes it. This growth form is shared by, among others, *D. drummondii* and *D. subpinnatifida* var *imberbis*. (see diagram)

D. nivea subsp. *nivea*

Nivea (snowy) refers to the pale underside of the leaves.
The distinctive form of this species makes a neat, dense shrub to 1 m. The flowers are very numerous, albeit almost hidden among the leaf bases.

Leaves are 20-35 cm long, very narrow with many small, triangular lobes.

It is common and widespread from Lake Indoon to Ongerup and almost to Israelite Bay in various soil types but usually, in association with other dryandras, in laterite.

Flowers are generally smaller than most of the lignotuberous species. All colour forms and variations occur including all-yellow.

Flowering is from July to September.

Seed capsules are similar in shape to those of *D. lindleyana* subsp. *lindleyana,* but smaller.

I have seen beautiful specimens of this species in gardens in Victoria. So far I have not succeeded in growing it here. It flowers and seeds very well in gardens near the Grampians in Victoria.

Dryandra nivea subsp. *ulginosa*

From Latin *uliginosus* (full of moisture, hence marshy) referring to the winter-wet habitat.

This is a dense shrub to 1.5 m tall. Its growth habit is the same as subsp. *nivea* but the much longer, to 45 cm, leaves make this subsp. a much bigger plant. Its preferred habitat is winter-wet clay pans in a few locations east of Busselton, in the Whicher Range and Scott River Plain.

Flowering is in September and it can be distinguished from subsp. *nivea* by the longer leaves with coarser lobes. I have not seen mature specimens of this species in cultivation. At Kings Park, because it is fairly rare in the wild several plants have been planted in the botanic garden.

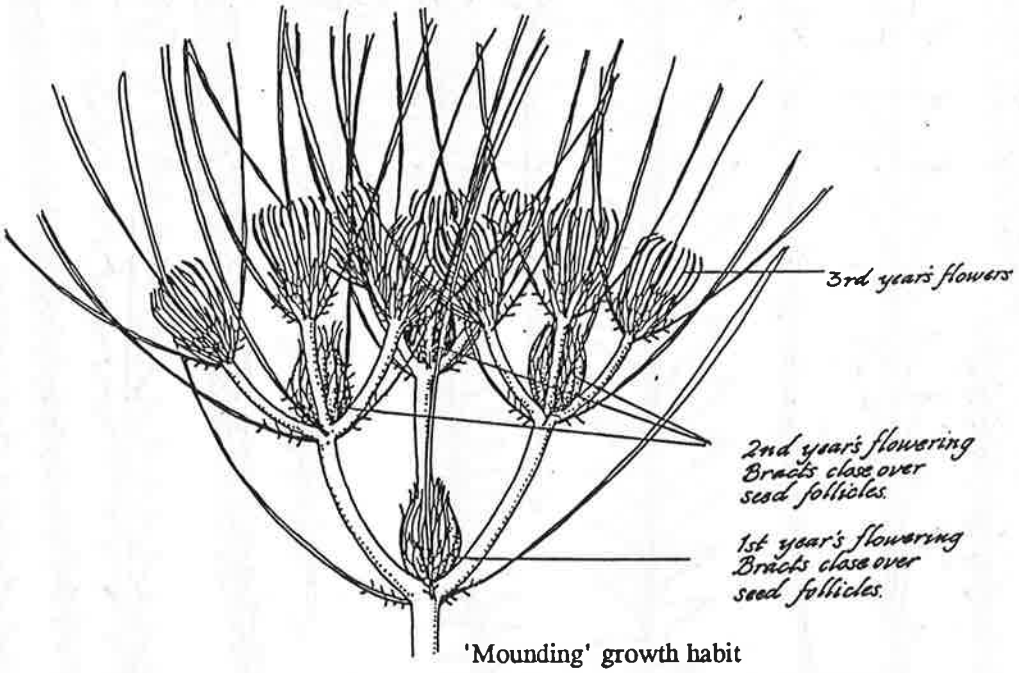
Dryandra sp. "Morangup"

This dryandra is known from only one location at present. It grows in a winter-wet gravel loam situation but the population extends to a higher, laterite rise.

The leaves are bright green to 35 cm long, wider and with larger, blunter lobes than subsp. *nivea*.

The flowers are completely hidden at the base of the leaves, but numerous. They are fairly small with fewer per head than subsp. *nivea*. Throughout the population they are uniform in colour. The style is deep pink and the limb is pure white. The almost glabrous bracts are yellow-green. It is unusual also in the flowering period which is in April.

On my last visit to the site I noticed hybrid plants on the edge of the population where there had been roadworks disturbance. They are *D. lindleyana* x 'Morangup'. The resulting plants have the same "mounding" growth but narrower leaves with more sharply triangular lobes.



'Mounding' growth habit
diagram depicts *D. subpinnatifida* var. *imberbis*

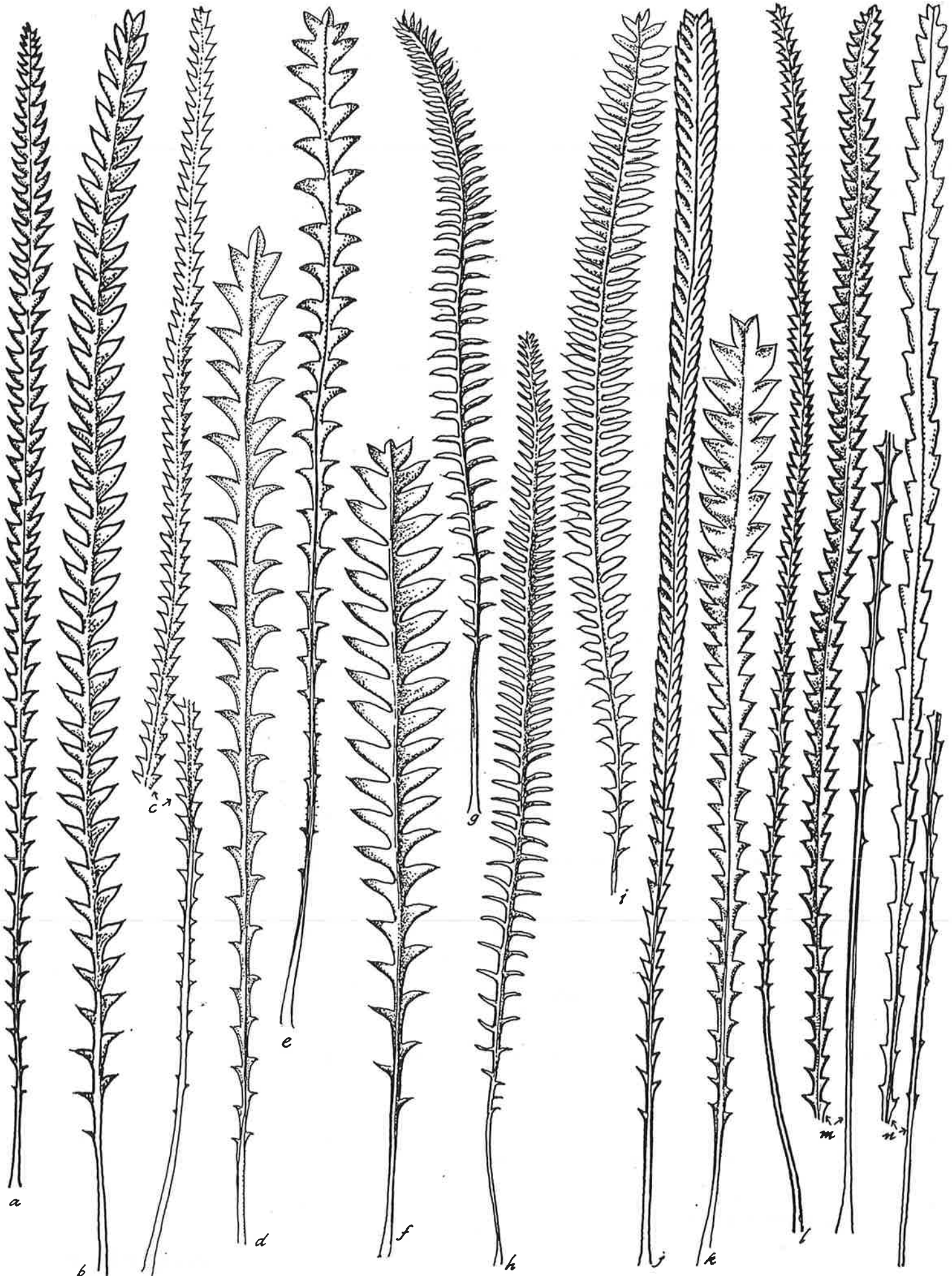
Plants in subgenus niveae hybridize readily and there are several in gardens and in the wild which have not been identified with certainty. Further study may be able to sort these out. I have 3 such "intermediate" plants in my garden.

We would very much appreciate records and comments on these dryandras, now that (I hope!) you will be more easily able to identify them.

In my garden I have a beautiful plant 1m x 1m which has the growth habit of *D. brownii* but with short, dark green leaves with triangular lobes. It was bought as *D. arctotidis*, (one of three so labelled and all different). In about ten years it has not yet flowered. At Cranbourne there is an identical plant which also has not flowered.

We would particularly like to know whether anyone has tried growing the lignotuberous species from cuttings and with what results.

Margaret Pieroni
December 1996



a. *D. lindleyana* subsp. *lindeyana* var. *lindleyana*, b. *D. lindleyana* subsp. *lindleyana* var. *mellicula*, c. *D. lindleyana* subsp. *pollosta*, d. *D. lindeyana* subsp. *media*, e. *D. lindleyana* subsp. *agricola*, f. *D. lindleyana* subsp. *sylvestris*, g. *D. arctotidis*, h. *D. tortifolia*, i. *D. brownii*, j. *D. stenoprion*, k. *D. cypholoba*, l. *D. nivea* subsp. *nivea*, m. *D. nivea* subsp. *ulginosa*, n. *D.* sp. *'Morangup'*.

Dryandra Study Group Newsletters
Contents

How To Use Keys

Start with 1. In the case of the dryandra key the next 1 isn't until page 15.

If 1 fits go to the next number 2. If this fits go to the next number, 3 and so on. When the description doesn't apply, you find the next occurrence of the same number. If it fits follow on as before.

I have used a plant in flower from my garden as an example. Flowers are necessary to identify using the key. Leaf drawings help where there are no flowers available.

The key goes off into all the 'honey pot' types after the first 4, so the number after the second 4 (page 3) is 13 with 5 ^ 's. This, I think explains the number of ^'s.

The rule is, if the answer is yes - follow on, if no, find the same number further on (there may be more than one more in some keys). When that fits follow on. Keep doing this until the identity is found.

Don't worry if you find it difficult to figure out. Most of us have had to do a course in using a key and botanists have told me they prefer to see a picture. 'When all else fails (i.e. when there's no illustration) try the key!'.

A Dryandra From My Garden

Start with 1

1	- yes, go to 2
2	- yes, go to 3
1st 3	- no, (more than 17 flowers)
2nd 3	- yes, go to 4
1st 4	- no (flowers not in circle with central hole) go to next 4 (page 3)
2nd 4	- yes, follow on
1st 13 (5 ^'s)	no, go to next 13
2nd 13 (page 6)	- yes, follow on
1st 27	- no, go to next 27
2nd 27	- yes, follow on
1st 28	- no
2nd 28	- yes, follow on
1st 29	- no, go to next 29 (page 7)
2nd 29	- yes, follow on
1st 35	- no, go to next 35
2nd 35	- yes, follow on
37	- yes follow on
1st 38	- no, (limb shorter), go to next 38 (page 8)
2nd 38	- yes, follow on
40	- yes, follow on
1st 41	- no, go to next 41
2nd 41	- yes = *D. fraseri var fraseri.*

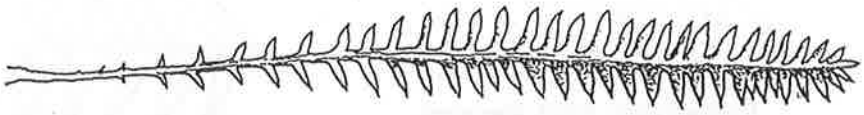
Margaret Pieroni
July 1996

KEY TO DRYANDRA

^1 Pistil exceeding perianth by 1 mm or more (for alternative see p.15)

^^2 Involucral bracts shorter than pistil (of the outer flowers in taxa in which the inner flowers are shorter than the outer) (for alternative see p.13)

^^^3 Pistil crook-shaped, 68–79 mm long; pollen presenter prominent, ovoid; tepals flared widely at apex of basal tube; flowers 12–17 per head (Badgingarra district) **81. D. nana**

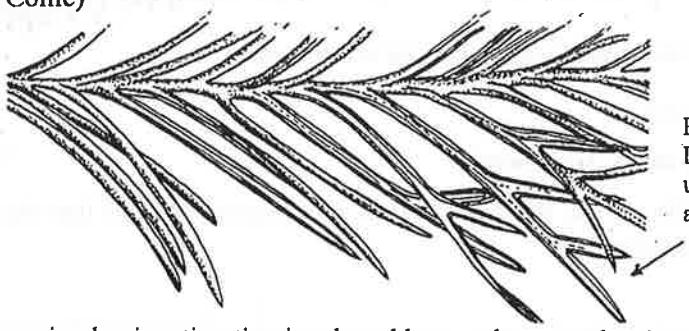


Prostrate plant
Leaves 4–19 cm long,
blue-green

^^^3: Pistil straight to curved but not crook-shaped, usually less than 60 mm long; pollen presenter narrowly cylindrical; tepals not flared; flowers 20–250 per head

^^^^4 Receptacle prominently convex; flowers at anthesis forming a circle leaving a central hole (for alternative see p.3)

^^^^^5 Leaves pinnatipartite, usually with at least some lobes also pinnatipartite; involucral bracts acuminate; perianth loosely hirsute with sticky hairs (between Woodanilling, Cranbrook & Collie) **82. D. preissii**

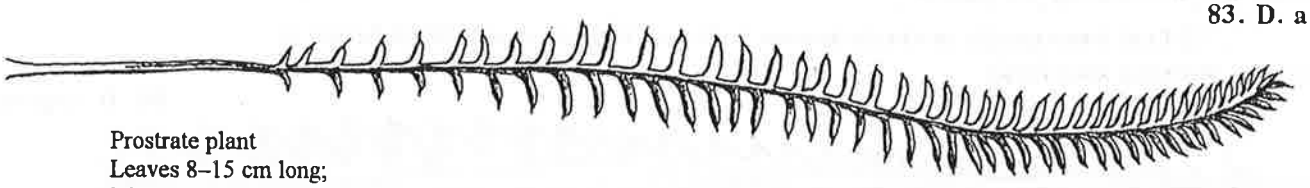


Prostrate plant
Leaves 7–15 cm long;
upper lobes often lobed
again (bipinnate)

^^^^^5: Leaves simply pinnatipartite; involucral bracts obtuse to shortly acute; perianth villous, hirsute or pubescent with non-sticky hairs

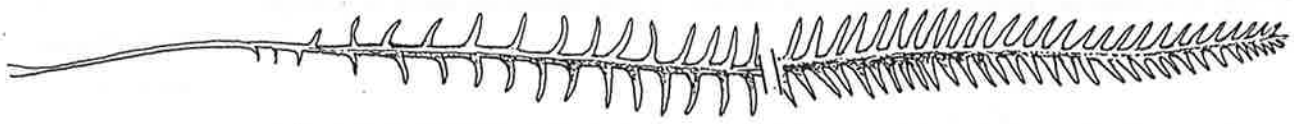
^^^^^6 Leaf lobes linear

^^^^^^^7 Leaf lobes not twisted, held vertically (Kojonup to Ongerup, Stirling Ra. & Albany) **83. D. arctotidis**



Prostrate plant
Leaves 8–15 cm long;
lobes angled to midrib forming a 'V'

^^^^^^^7: Leaf lobes twisted so that upper half of lamina is ± horizontal (Eneabba to Cataby) **84. D. tortifolia**



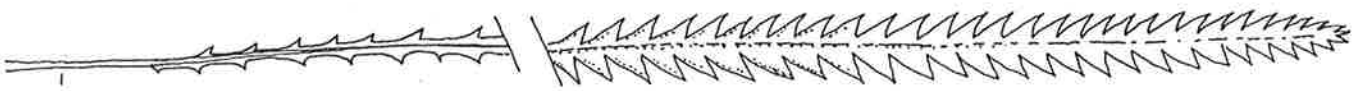
Prostrate
plant
Leaves
10–17 cm long

^^^^^^6: Leaf lobes oblong or triangular

^^^^^^^8 Leaf lobes oblong or narrowly triangular

^^^^^^^^9 Plant with underground stems, fire-tolerant; leaf lobes 15–35 each side (Bannister and Wandering to Manjimup) **87. D. lindleyana**

87a1. D. lindleyana subsp. lindleyana var. lindleyana



Stems prostrate, mainly underground. Leaves 10–20 cm long, 3–8 mm wide. Coastal areas, Geraldton to Cape Naturaliste.

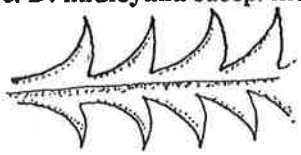
87a2. D. lindleyana subsp. lindleyana var mellicula

Stems prostrate to erect. Darling Scarp.

87b. D. lindleyana subsp. pollosta

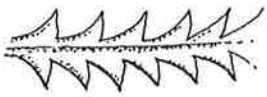
Prostrate plant. Leaves 13–20 cm long. Moora to Watheroo.

87c. D. lindleyana subsp. media



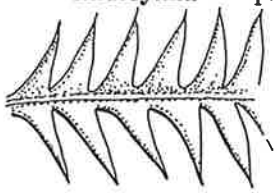
Prostrate plant. Leaves rigid, 15–20 cm long. Eneabba to Mingenew.

87d. D. lindleyana subsp. agricola



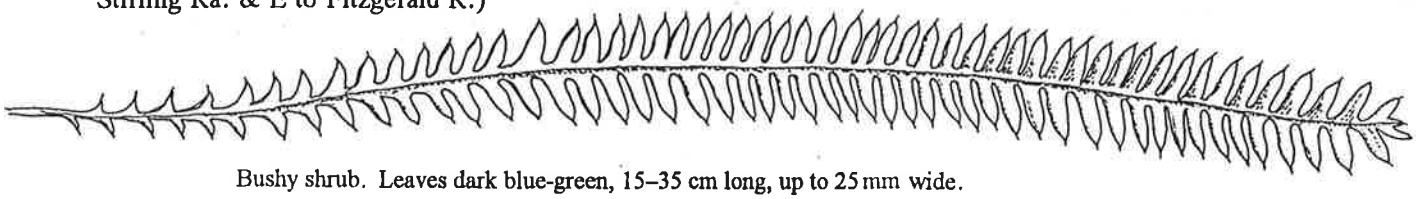
Prostrate plant. Rigid, blue-green leaves. Corrigin to Traysurin.

87e. D. lindleyana subsp. sylvestris



Stems undergound. Leaves 6–16 cm long. In Jarrah–Marri forest.

^^^^^^^^9: Plant with stems above ground, fire-sensitive; leaf lobes 40–75 each side (Albany to Stirling Ra. & E to Fitzgerald R.) **88. D. brownii**

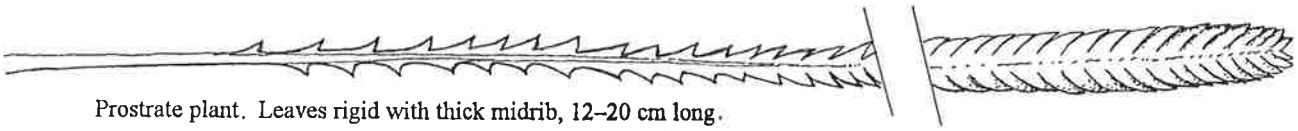


Bushy shrub. Leaves dark blue-green, 15–35 cm long, up to 25 mm wide.

^^^^^^^8: Leaf lobes broadly triangular

^^^^^^^^10 Plant with underground stems, fire-tolerant

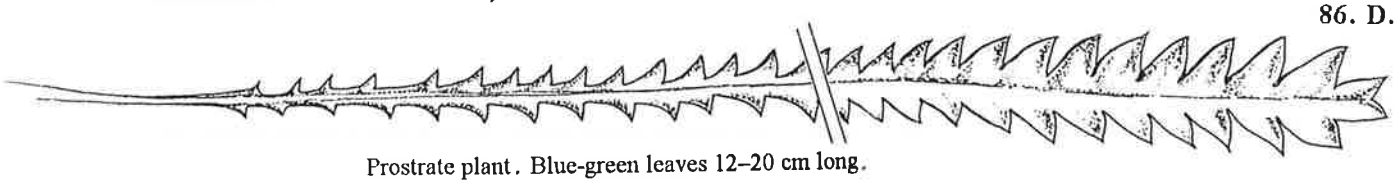
^^^^^^^^^11 Leaf lobes 1–3 mm wide at base, the lower (basal) margin more revolute than the upper, slightly overlapping (near Badgingarra) **85. D. stenoprion**



Prostrate plant. Leaves rigid with thick midrib, 12–20 cm long.

^^^^^^^^^11: Leaf lobes 2–8 mm wide at base, both margins shortly and ± equally recurved to revolute, not overlapping; widespread

^^^^^^^^^^12 Leaf lobes usually markedly convex (recurved towards apex) (W of Arrino to Alexander Morrison Natl Park) **86. D. cypholoba**



Prostrate plant. Blue-green leaves 12–20 cm long.

^^^^^^^^^^12: Leaf lobes not or slightly convex (Geraldton to Cape Naturaliste and E to Corrigin and Traysurin) **87. D. lindleyana** see above

^^^^^^^^10: Plant with above-ground stems, fire-sensitive (Lake Indoon to Nyabing & E to Cape Arid, on the Scott R. plain & E of Busselton) **89. D. nivea**

89a. D. nivea subsp. nivea

Mounded shrub to 1 m. Narrow leaves 20–30 cm long.

^^^^^^^^^^^^20 Leaves with 60–110 lobes each side (near Busselton, Stirling Ra. to Albany) **37. D. baxteri**

Dense, bushy shrub. Non-prickly leaves.

^^^^^^^^^^^^20: Leaves with 25–45 lobes each side (Tarin Rock, Ravensthorpe) **38. D. foliosissima**

Dense, bushy shrub. Leaves to 25 cm long. **Large, 18–21 mm long, hairy follicles.**