

DODONAEA STUDY GROUP

NEWSLETTER NO. 26 - MARCH, 1993

ISSN 0811 - 5354

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DODONAEA
VISCOSA SSP. ANGUSTISSIMA

Dear Members,

I am sitting in a deck chair under a great and very old *Dodonaea viscosa* ssp. *spatulata*, which is superbly wind pruned and shelters wallabies, possums at night, an echidna and many blue wrens and their jennies, as well as honey-eaters and other small birds. Don and I are camped in a secluded camp site along Richardsons Beach at Coles Bay on Tasmanias east coast for 10 days, so this seemed a good time to start a draft of our newsletter. Our secluded site looks out across the beach to the picturesque Coles Bay and to our left are the massive red granite peaks known as 'The Hazards'. We are facing west, which is really unique for an east coast shoreline and last night we experienced a lovely cloudy sunset followed by hours of sheet lightning and thunder. This is a rare experience for Tassie and we felt privileged to have witnessed this display in such a lovely setting. There wasn't much sleep for some hours to come as the rain pelted down on our Kombi roof.

I received letters from a number of our members, who like the new format of our newsletter and some commented that the smaller size was more easily stored. Contributions to the next newsletter should be received by late Setember this year - please!!

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IN THE GARDEN

Late last year I visited a really lovely garden in Balwyn, Victoria called 'Maranoa Gardens'. I have been there many times before, in fact, my love of Australian plants, possibly started there when I was taken on a visit by my sister in the late 1960's. On that visit I was fascinated by a shrub labelled *Dodonaea adenophora*, which we now know as *D. sinuolata*. I managed to buy a plant soon after and it is still doing well in my previous garden. My delight in these gardens, which are planted out with Australian plants, was mildly dimmed because the only two *Dodonaeas* that I saw were wrongly named. Our Tasmanian endemic *D. filiformis* was labelled *D. filifolia* and *D. biloba* was labelled *D. procumbens*. I wrote to the Superintendent and received a nice letter in reply with an invitation to contact him when next I was in Melbourne.

Irene Champion writes that the Mackay Branch recently got some seed of *D. platyptera* and she already has some up. Irene reports that Rockhampton Botanical Gardens had a good fruiting shrub a couple of years ago but all fruits were sterile. (See notes on this in the Research section)

Doris Gunn writes that Dods are not doing so well in her garden. I seem to remember that her soil is alkaline so I have sent her seed of *D. aptera*. There are other Dods from areas with high ph. soils that could be worth trying. Doris notes that each year in October the Geelong Group are 'treated to a branch of wonderful Dod. from Pat Belen's garden with the most wonderful wine-red hops and ferny foliage. Doris believes that it is either *D. boroniifolia* or *D. multijuga*. It makes a stunning display and excites much comment!

IN THE BUSH

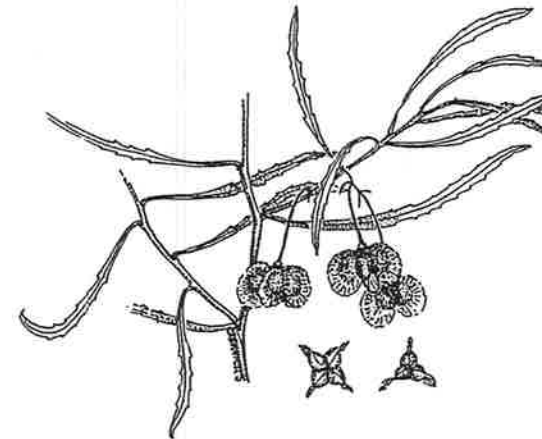
Ida Jackson wrote of seeing *D. microzyga* ssp. *microzyga* growing in a dry creek at the Breakaways north of Coober Pedy and they fell in love with it. It was a magnificent plant glowing with colour - and never a ripe seed on it! So she requested seed. (We hope she is successful - who says Dods aren't colourful?).

In a more recent letter Ida reports on a project that she wrote of some time ago. 'A couple of years ago, I wrote to you about a revegetation project in which we were engaged at Kelly Hill C.P. We went back there recently. One area is roughly 30m x 10 m - most unpromising terrain with a surface of laterite and cement where they had washed out the cement mixer they were using in improving the approach to the Tourist Cave. Garth broke up the surface and we carted in compost and leaf litter from the surrounding scrub. This was supplemented by mulch piled at the sides of the roads by the E.T.S.A. road crew when they lopped branches endangering power lines. We planted mallees and Casuarinas and Banksias. Then we sowed seed of *Dodonaea viscosa* ssp. *angustissima*, *Hakea rostrata*, *H. muellerina*, *Hardenbergia violacea*, *Calytrix tetragona*, *Eucalyptus diversifolia*, *Allocasuarina striata*, *Acacia myrsinoides*, *A. paradoxa*. I remember you said that you had never heard of a Dod. being used for direct seeding in a revegetation project. We now have a fine area of *Dodonaea viscosa* ssp. *angustissima* plus a few Hakeas, some *Hardenbergia*, some *Banksia*, some *Calytrix* and one *Acacia paradoxa*. Nature has also kindly contributed a lovely *Ixodia achillaeoides*!. Congratulations once again to Ida and her husband Garth for the wonderful work they do in conserving the flora of Kangaroo Island. I nearly missed a further note in Ida's letter which mentions that the area is still fenced to keep out kangaroos and wallabies. The Dods are 10 - 20 cm high and look very healthy.

Doris Gunn reports that the Geelong Group grew about 200 plants of *D. viscosa* for the Greening of Buckley Falls at Geelong, where there is a marvellous effort by the 'Friends (of Buckley Falls)' and Water Board to reclothe the area with local plants.

Doris travelled with a group to Kangaroo Island last September and saw some lovely coloured *D. viscosa* on roadsides and plenty of 'this little groundcover'. (Pity they didn't bump into Ida - maybe Ida helped plant some of these gems).

In the 'Wildflower Society of Western Australia Newsletter' for November, 1992, I read with interest an article entitled "An August Trek to the 'Blooming Desert'". This was a trek in early August from Eyre on the Great Australian Bite northwards through Rawlinna to Plumridge Lakes Nature Reserve in the Great Victoria Desert 125°00', 29°30' about 500 km west of the South Australian border. Amongst the many interesting plants recorded on this trip was *Dodonaea filifolia* 'which gave a splash of colour with its deep red membranous capsules'.



DODONAEA PTARMICAEFOLIA TURCZ.

Marion Simmons' delightful illustration of this species prompted me to include a description of this Dod. - a very special thanks to Marion.

The specific name refers to the similarity of the leaves to *Achillea ptarmica* (syn *Ptarmica*). *D. ptarmicaefolia* is a very compact and erect shrub, which reputedly grows from 1 - 3.5 and sometimes to 4 metres, but mine have so far not exceeded 1.5m and they have grown very quickly into an attractively shaped shrubs. The stems have an attractively streaked bark, although this is well hidden as the foliage is dense to the ground.

The leaves are narrow, between 2 and 5 cm long with regularly toothed margins, but the lower 1/3rd is usually entire and tapers to the stem. *D. lobata* has sometimes been confused with this species, but the tiny lobes on the margins differentiate it from the serrate margins of *D. ptarmicaefolia*.

The capsules usually have 3 and sometimes 4 transverse wings, which turn purple-red or red-brown at maturity. This display should be seen from October to January. My plants have mostly been grown from seed from Nindethana Seeds in W.A. None of my plants have produced large numbers of capsules, so have not been very colourful. I would appreciate cuttings if anyone has a good form, as I do like this plant. However my plant in my new garden at Kingston, has at present, masses of flowers, so may produce a better display in this new situation. Hiding in the dense foliage I found a medium sized grey and white butterfly- I wonder what he is feeding on?

These plants appear to be frost hardy. It grows naturally in south-western Western Australia between Tammin area in the north-west to Peak Charles in the east. I imagine that some of these areas would be prone to frost. *D. ptarmicaefolia* is a good coloniser in undisturbed places and usually grows in sandy loams or granitic sands. In cultivation it would need good drainage and full sun or part shade. If not already doing so, I would recommend that members try this delightful shrub.

RESEARCH - cont.

One paragraph that I read in the 'Encyclopaedia of Australian Plants' by Rodger Elliot and David Jones in the section on Dodonaeas explains very well the reproductive system of the Dods and I am copying it for your information:

"Flowers of dodonaeas are generally insignificant and can be bisexual or unisexual. The male and female flowers are usually on separate plants. It is unusual for plants to have only bisexual flowers. Only plants with female or bisexual flowers produce capsules, and it is not necessary for them to be fertilized for the capsules to develop (see Volume 1, page 199, Parthenocarpy). Such capsules will not contain viable seeds and will frequently ripen earlier on the plant than the fertile capsules"

The term 'Parthenocarpy' is one I had not heard before, so I looked up page 199 and found that this explanation of the term very interesting, as it obviously applies to our Dods as well as the other species mentioned:

"Parthenocarpy - Seedless fruits are not uncommon in some species such as *Acmena australis*, *Cupaniopsis* spp., *Harpullia pendula*, *Pittosporum phillyreoides* and *Syzygium lehmannii*. This condition is known as parthenocarpy, and results from the hormone levels in the plant at flowering time. If fertilization has been ineffective, the seeds abort, and in normal trees these undeveloped fruit fall soon after flowering. Sometimes however the placenta of the fruit acts as a site of hormone activity, and an apparently normal fruit develops. Usually normal fruits are present on a tree along with parthenocarpic fruits, but some trees of *Syzygium lehmannii* produce only parthenocarpic fruit. On a tree with mixed normal and parthenocarpic fruits, the parthenocarpic fruits can usually be distinguished because they ripen earlier, are smaller, and are usually less brightly coloured."

Although I read through the first volume of the 'Encyclopaedia' when I first bought it, I would recommend members to go back and re-read this very informative volume.

When Volume 3 was published, the revision of the genus *Dodonaea* by Judy West had not gone to press and many of the new names of *Dodonaea* species are not included. If you have bought this volume and have not the new names for the Dods, please contact me and I will send you a copy of these which can be placed in the *Dodonaea* section of your volume.

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FINANCE

	Receipts		Expenditure
Brought forward	106.45	Postage	13.80
Subscriptions	25.00	Copying	18.00
Donations	10.00	FID + SID tax	4
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	141.45		31.84
Balance	\$109.61		

Thanks to S.A. Region for their donation and also to the Regions and study groups who have sent newsletters to me. Members may have noticed that I numbered the last newsletter No.24 and it should have been No. 25!!

This new format means that I must fill at least 7 pages!! Your help to keep this up would be appreciated.

RESEARCH

Birgitte Sorensen has sent a short update on the progress of the project that she is working on and which was recorded in our last newsletter:

The flowering and fruiting season of *Dodonaea subglandulifera* was prolonged due to a cool, wet year. Flowers were present as early as March 1992, a couple of months earlier than usual. Populations in the Murray Mallee and near Wallaroo had produced lush, new growth due to above average rainfalls in the regions.

Seed set experiments were set up to investigate the proportion of flowers that develop capsules and set seed. Two sites were set up in the Murray Mallee. At both sites, a third of the flowers had developed capsules. At one site up to 78% of the capsules had developed seed, though many of the seed were infested with grubs. Consequently, less than half of the seed were viable.

During early winter, we had planted *D. subglandulifera* seedlings at Yookamurra Sanctuary and Brookfield Conservation Park. Both sites are in the Murray Mallee, with similar soil and vegetation types to natural populations of *D. subglandulifera*. A similar experiment was set up in 1991, but most of the seedlings did not survive due to a dry season. Yookamurra is fully enclosed by an electrified fence that excludes foxes, cats, sheep, goats and rabbits. During a visit in late November, all but one seedling had survived at Yookamurra. Unfortunately, half the seedlings at Brookfield had been dug out by rabbits or goats. Of those that remained, many had been grazed. Generally, plants are considered to be 'safe and protected' in a conservation park. Unfortunately in many cases they are not protected from feral grazers.

Germination and cutting experiments are continuing at Black Hill Flora Centre. (We would be interested to hear of the results of these experiments also in the future please Birgitte.)

Geoff Butler, President of Canberra Region SGAP, who works at the Australian National Botanic Gardens, wrote suggesting that if I was doing a seed viability test, it would be firstly, worth writing to the International Board of Plant Resources of the Food and Agriculture Organisation of the United Nations in Rome, Italy. It appears that they have produced some excellent publications on seed storage and viability testing. I wrote in December, 1992 and this week received a reply but whoever translated my letter obviously got it wrong as what they sent me was a 'Publications List'. None of the publications listed seem to deal with tests on the viability of seed, but many deal with the methods of storing and many other allied topics. I shall have to ask at our University herbarium to see if I can find out the correct techniques for testing the viability of Dod seed.

Ida Jackson has suggested that we might take on a programme similar to the Banksia Atlas project that SGAP members assisted with a few years ago. It is a very interesting idea. I'm not sure where we could get funding or who would have the expertise and be willing to organize the project. Do any members have ideas on this suggestion?

I keep getting reports on Dods being susceptible to scale and sooty mould. I have had this problem myself on some species. Does anyone know why Dods are susceptible? Applications of white oil seem to get rid of the problem. In the 'Encyclopaedia of Australian Plants' Volume 3 by R. Elliot and D. Jones in the foreword to the genus *Dodonaea* the following paragraph deals with this problem. 'In cultivation, the major disadvantage with some *dodonaeas* (usually those that have extremely sticky branchlets and leaves)

is that they are readily attacked by scale. Early identification of such attacks and spraying with white oil is generally sufficient to combat the problem. Foliage and branches can become covered with sooty mould if the scale is not killed early in its development. Chewing-pests do not present a threat to foliage growth. There may be the odd attack by stem-borers on some species. (I had borers in a *D. filiformis* at Austins Ferry). And in Volume 1 of the 'Encyclopaedia' under 'Pests and Diseases' these pests are described: 'Scales are sucking insects which conceal themselves beneath waxy leathery or cottony shells or secretions. They often cluster in colonies and may cause serious damage to plants. Sooty mould usually grows on the sugary exudates secreted by the insects and they are frequently attended by ants. None of this tells us why Dods are susceptible or how to prevent the attack in the first place! Can anyone help to solve this riddle?

Elizabeth George made a comment on the last newsletter that made me think that we should be emphasising in our reports and descriptions (Elizabeth's words) 'the characteristics of real Dods, their attractiveness and suitability and desirability for horticulture'. Would each of our active members please take the time to write such a description of the most successful *Dodonaea* in their garden - I would like to make this a feature in the next newsletter and would need this contribution by late September, Please!!

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 Jo Walker, 21 Poppet Road, Wambuin, N.S.W. 2620.
 Wildflower Society of Western Australia, P.O. Box 64, Nedlands, W.A. 6009.

NEWSLETTERS ALSO SENT TO:

Australian National Botanic Gardens, P.O. Box 1777, Canberra ACT 2601.
 "Australian Plant" Editor, 860 Henry Lawson Drive, Picnic Point, NSW. 2213.
 Jan Sked, Federal Study Group Co-ordinator, P.O. Box 41, Lawnton. Qld. 4501. (Financial)
 State Library of Tasmania, 91 Murray Street, Hobart. 7000.
 Judy West, Division of Plant Industry, CSIRO, P.O. Box 1600, Canberra City. 2601.

SPREADING THE WORD

Irene Champion sent me a copy of the S.G.A.P. Mackay Branch Newsletter NO. 127 for July - August, 1992. The following article was included and I have the permission of Irene and artist Helga Alcock to reproduce this article in our newsletter. Helga has also produced sets of delightful greeting cards and has used this design on some of them.

PLANTS of MANGROVE MARGINS and the FORESHORE. No 2.

*Dodonaea
viscosa ssp.
viscosa*

Family
SAPINDACEAE

Common Name
Native Hops



Dodonaea viscosa is a widespread plant which occurs throughout Australia and in many overseas countries. In Australia the papery capsules of Native Hops were used by early settlers as a substitute for real hops in beer making. The species has been used as a sand binder and in marshland reclamation in other countries. *Dodonaea viscosa* is very variable and has seven subspecies, two of which have been recorded in the Mackay district - *D. viscosa* subsp. *viscosa* and *D. viscosa* ssp. *burmanniana*. The latter occurs on Mt Blackwood. A particularly attractive, large shrub that was covered in bright red fruit was photographed beside the tower road in July 1984. *D. viscosa* ssp. *viscosa* has been collected in coastal areas including off shore islands. It is a bushy shrub to about 2 m high with bright green, discolorous leaves, from 7-12.5 cm long x 2-4 cm wide, which are shiny on both surfaces. Tiny yellow flowers are borne in terminal sprays and are followed by 2-winged (or sometimes 3-winged) capsules. These may be pale green or pink to reddish in colour. Fertile fruit contain small, dark coloured seeds.

Distribution: Occurs on sandy soil in littoral habitats in north-eastern Queensland, also New Guinea and tropical areas of America, Africa and Asia.

Ref: J. G. West, *Dodonaea*, *Flora of Australia* 25: 114-163 (1985)

Illustration by Helga Alcock
Description by Irene Champion