AUSTRALIAN NATIVE PLANTS SOCIETY AUSTRALIA

HAKEA STUDY GROUP NEWSLETTER No. 63

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Dear members

I start this newsletter at the beginning of 2017. It took me to the end of the year to catch up with the weeding, mulching and planting. The long wet and cold winter/ spring finally abated at the end of November and then the days were fine enough to get into the garden and catch up with all the activities that needed to be done. Even today, the 2nd. of January the temperature is only 16 degrees C and cloudy and far from feeling like summer. Elliminyt being at the foot of the Otway Ranges comes under the influence of the weather of these ranges. At the other end of the spectrum, five weeks later many places are experiencing record heat temperatures while parts of Western Australia are having heavy rain.

The extremely wet second half of 2016 caused many parts of the garden to become water logged and in some low lying areas the Hakeas stood in water for weeks. In the finish I bought myself a trenching spade and began to dig trenches out to the Council drain. This did get rid of the surface water but the damage had been done. At the end of November I started to see my losses. Hakeas psilorrhyncha, pendens, conchifolia, obtusa, decurrens ssp. decurrens, pritzillii, platysperma and horrida had perished. When I pulled up the plant the roots were rotten from being in water. In the built up beds I had no losses, so I am now in the process of building up low lying beds where I can to be at least 400mm above the natural ground level. We may not see another wet year like 2016 for a long time, but I have learnt my lesson and not taking any second chances. However there were some surprises in that some Hakeas withstood the water logging despite being considered needing well drained conditions. Hakeas undulata, scoparia ssp. trycherica, prostrata, smilicifolia, lissocarpha and ilicifolia all survived.

Propagating.

Because of the cold weather and the urgency to complete other gardening tasks, I did not get around to putting Hakea seed down until the beginning of December. I sowed 30 species in punnets filled with vermiculite. A week later the Hakea eyreana's were up and a further week later anadenia and varia. In the following two weeks purpurea and erecta appeared but the rest have shown no sign of germinating. The night time temperature has been down as low as 6 degrees C and this would not have been conducive to germination. Also most of the Hakeas in the wild would not be germinating at this time of the year, so perhaps other factors such as day – night duration come into play.

In the period between Christmas and New Year I sowed a further 20 species in vermiculite. Most nights were now getting warmer and the days also. In four days Hakea platysperma had germinated and also newbeyana. Gradually the remainder are germinating and at the middle of

February all but three have germinated.

After waiting patiently for eighteen months a friend has finally been able to collect and send me seed of Hakea divaricata. It has been used as a street tree in some parts of Alice Springs and the seed is usually just let fall to the ground with no hope of germinating up against footpaths and kerbs.

Hakea ceratophylla.

I sent cuttings of the very fine leaf form from the Denmark- Albany area to Robyn Barker at the Adelaide Herbarium. She has confirmed that it is Hakea ceratophylla but was very interested if it will come true to form from seed. It may be that the swampy conditions it is growing in have caused the plants there to have nearly terete leaves. The Herbarium did not have a sample of this fine leaf form, so it further adds to the information on the leaf diversity of this Hakea.

Hakea asperma.

This is a recently named species from east of Benambra in the Victorian Alps. To date no seed has been found and it is considered a clone of about 2000 plants in the location where it grows. I have been fortunate to receive a large number of struck cuttings which I have potted on. My aim is to spread these around members to see how hardy it is under various soil types and climates. I suspect it will be difficult to grow in inland areas where summer temperatures are high, however in places such as Armidale in NSW it should flourish where they have mild summers and cold winters. The Hakea has fine terete green leaves like Hakea lissosperma which also grows in the alpine area.

Hakea ochroptera.

At a recent garden visit to our property, a comment was made as to the suitability of this Hakea as a hedge plant. It has bright soft green terete leaves and develops into a fairly dense plant, although older specimens in the wild develop large trunks with the canopy further up. In its natural habitat it grows on rocky outcrops at about 800m above sea level in high rainfall areas near Dorrigo in NSW. I think it would go well as a hedge provided it had good drainage and adequate moisture. Seed is hard to come by as it is a protected species, however there are now quite a few plants in members' gardens, so seed may be easier to obtain.

Weeping of new growth .

I have observed on some of the terete leaf Hakeas the weeping of new growth. At first I was a bit alarmed, however as time went on the new growth straightened up. In a matter of two days the plant would put on 100 to 150mm of new growth. I think in these cases the new growth was put on so rapidly that the tip of the branch did not have time to build up its strength to support the new growth.

News from members.

Following our Hakea excursion in WA some of the participants have had a renewed interest in propagation and have been sowing seed of various Hakea species. Tom Constant from WA has been sowing Hakea seed in local sandy soil in September and has been having quite a bit of success. Barry Teague from Victoria has sown individual seeds into 300 tubes in October-November. So far germination has not been good due to perhaps the high daily temperatures.

Cathy Powers has asked me why some Hakeas put out a lot of flowers but set very few seeds. The answer to this question is not straightforward. Hakea species have evolved over thousands of

years and in doing so the structure of the flower, colour, and time of flowering are all up to suit the pollinator. The pollinator could be birds, insects, butterflies or mammals. In responding to Cathy's question I also asked Alex George for his comments which I am most grateful for.
Some of the aspects to be considered are:
The survival mode of the plant. If the plant has a lignotuber then after fire it can reshoot from the base. In this case it is not important for the plant to set many seeds.
Alex' comments are that a number of families that have species with lignotubers seem to set fewer fruit or at least viable seed. For example Banksia sphaerocarpa in which fruit set is very low and in some that appear well formed there is no viable seed-they are like tissue paper. It is through having gained the ability to sprout after fire, such plants have lost the need for seed reproduction. In the wild you seldom see seedlings or young plants with the resprouting of Banksia sphaerocarpa plants.
The size of the seed capsule. Hakea platysperma for instance sets a very large seed capsule and this requires considerable energy from the plant and hence the plant only produces a few seeds from each flowering. The seed capsule is probably large to discourage cockatoos from getting at the seed. Brian Lamont has written a paper on fruit size but unfortunately I do not have access to his paper.
Age of plant. Young plants are still putting a lot of energy into growing and hence may abort forming seed.
The presence of the right pollinator. In our gardens the plant is removed from its natural environment and pollinators. It could be that the right pollinator is not present.
Alex says that it stands to reason that there should be a good sized population to ensure crossing and good seed set. I am sure I have seen solitary specimens of various species but at this moment cannot think of an example. In my garden I have a single plant of Hakea psilorrhyncha (originally 3 but 2 have died) that flowers well but sets no fruit.
Climatic conditions. If it has been a dry season then the plant may decide to flower poorly and curtail fruit production to conserve its strength.
Alex says some plants appear to sacrifice foliage or even a branch to ensure survival when things get critical. Editor: I remember years ago looking at a reserve near Corrigan with Margaret Pieroni in a drought and looking at all the brown plants with hardly a green leaf and thinking that there was a total disaster at hand. A few years later I returned in a good year to see everything had recovered and much flowering occurring.
To help with members' observations I will list those Hakea species that are considered to have lignotubers: H archaeoides, trineura, lorea group, stenophylla, florulenta, leuccoptera group.
Resprouters: actities, decurrens species,bicornata,commutata, megalosperma, bakeriana, amplexicaulis, prostrata, spathulata, cristrata, longiflora, rostrata, cyclocarpa, candolleana, incrassata, brownii, flabellifolia, orthorrhyncha, nitda, varia, clavata, aculeata. laevipes, conchifolia, myrtoides, repullulens, grammatophylla, cinerea, eneabba,

Financial report.

Balance forward. 1November 2016	3277-58
Income from membership	240-00
Expenditure	
Printing and posting of newsletter No. 62	128-26
Balance forward. 31st. January, 2017	3389-32

I thank members for the renewal of membership where due. We have 95 members and three honorary.

Runoff from solid fences.

We probably do not think of solid fences causing excessive runoff from rain. One of the experiences I had last spring was just how much water a 1.8m high metal fence can create. The fence being on the east side of the property gets most of the rain from the northern and western side which is where the predominant rainfall comes from. The raised bed on the east side with its side drain is some 1.0m in from the metal fence. I was concerned about the amount of water flowing down this drain after heavy rain. As an experiment I dug another shallow drain about 0.5m in from the fence and observed just how much water it collected. I was surprised to see it run full and then came to the conclusion that all the rain water hitting the metal fence was causing the nearby soil to be receiving double the amount of water that the rest of the garden was receiving. Of course the neighbours' property on the other side was receiving a lot less moisture for about 1.5m out. In urban areas solid fences predominate and perhaps we need to consider the rainfall effect on the adjacent garden when planting our native plants.

I have just been proof checking some of the sulcata group Hakeas that I have in the garden. The microscope shows up a wonderful world of leaf shape and structure and verifies the species of Hakea. I cut off a small part of the leaf with a sharp razor blade or secateurs and stand it up under the microscope using a bit of plasticine to keep it erect.

Alex George is kindly sending me a small quantity of seed of Hakea chromatropa. If you would like to grow this plant, there will be a limit of four seeds per member.

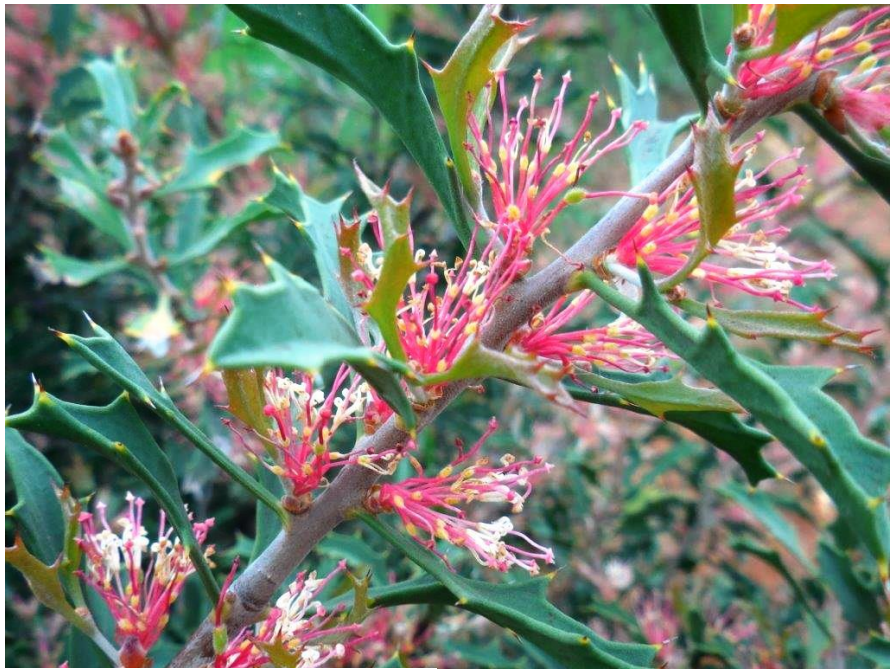
Now is the time to start looking at bud formation (refer to Alex George's comments in a previous newsletter) and also to look as to whether your plants which flowered in 2016 have produced fruit capsules and in what quantity. There is always things to observe with our Hakeas.

It will soon be time to start your autumn plantings of Hakeas and if you have not been propagating, I hope the local plant sales have some for you. Remember too to look out for the Grevillea looper caterpillar, it can do a lot of damage to seedlings.

Photo credits are from Jennifer Young and Royce Raleigh.

Cheers, Paul.

Hakea lasianthoides, Walyungah form



Hakea chromatropa

Hakea rigida

Hakea aculeata