

Hello Everyone,

With summer and hot weather upon us, it is not the time to undertake heavy gardening jobs, but is a wonderful opportunity to stroll around and assess the effects of your past and recent plantings. Take your secateurs and trim off the sundry branches causing congestion and perhaps make plans to move some plants to more favourable locations.

Looking critically at my own garden once again I note that my two plants of *H. orthorhyncha* (each about eight years old) have failed to flower. One is in a crowded position with other hakeas all of which have flowered, the other is in the back garden in an open site in full sun facing north. Both are looking very healthy and strong. One of the reasons given for grafting plants is that apart from establishing better root systems, they flower reliably, but this is not necessarily so if the grafting is done at the dicotyledon stage. I was given five grafted hakeas about nine years ago, some grafted on to *H. salicifolia* and some on *H. nodosa*. The results have been interesting. All species were in the *multilineata* group: *multilineata*, *francisiana* and *bucculenta*. One *francisiana* and the *multilineata* bloomed at 5-6 years old, the second *francisiana* a little longer and eventually one *bucculenta* did at eight years and the other *bucculenta* still hasn't developed buds that promise flowers. If the grafting is done with cuttings from shrubs with proven flowering capacity the results must be more satisfactory.

SEED FERTILITY.

Even though I have proved from my own collection of seeds in W.A. that seed from many species is still fertile when eleven years old, I continually upgrade the seed in the Seed Bank from reliable sources: Nindethana, W.A.W.S, and W.A.W.S. Eastern Hills Group, keeping the limit to 4-5 years old maximum. However, occasionally members have difficulty with germination and this report came from Frank Prichard of Lockhart, N.S.W. He began by commenting that he didn't have much luck with the seeds I had sent, noting that some seemed very dry and even cracking and there was nil germination of *ceratophylla*, *lehmaniana trifurcata*, *coriacea*, *cycloptera*, *smilacifolia* and *stenophylla*. He went on "Most of the plants of other varieties which germinated died when they were about 150-200mm high (all in pots). I had the town water tested and found it had a very high ph. I subsequently grew some hakeas from fresh seed from Galore Reserve and watered them only with rainwater or water from creeks and farm dams. This seems to solve the problem of plants in pots dying."

Much of the seed I receive looks very dry and sometimes with white marks suggesting more than usual age. Also sometimes within a species the seeds will vary considerably in wing size, depth and length of seed yet always the proportions between the largest and the smallest will be the same. For many years I have used a plastic container which allows me to raise forty-eight seedlings in individual compartments to test the fertility of these variations. Occasionally larger seeds have produced very robust seedlings and some very small seeds of the same species have produced weak seedlings but the exceptions were so numerous I concluded a definite result could not be achieved. I do not knowingly despatch cracked seed, so if this occurs please let me know.

I do not know ^{how} to avoid buying wrongly labelled plants, I can only hope that in time it will happen less often. Many years ago I bought *H. ambigua*, a species I have never found in the wild and was curious about. As it grew I was suspicious that the veining and shape of the leaves resembled

H. cucullata too closely but an "expert" friend assured me that it was the same as his which was *ambigua*. Suffice to say it bloomed at last in spring and it was *cucullata*!

This is what *H. ambigua* should look like, together with the other hakeas in the *falcata* group.

THE HAKEA FALCATA GROUP

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Figure 4. Terminal branchlets of (A) *Hakea ambigua* (Keighery 8134, PERTH), (B) *H. falcata* (1 xi 1985, Keighery & Keighery, PERTH), (C) *H. cygna* subsp. *cygna* (Keighery 7987, PERTH), (D) *H. erecta* (Keighery 8275).

New Species, New Combinations and Other Name Changes in Hakea (Proteaceae), is the name of a paper recently published by Robyn Barker and covers the work she has undertaken in the revision of the genus. There is too much information to include here so I will list the new species and reproduce full descriptions in the June newsletter.

There are two new taxa within the *H. OBLIQUA* R.Br. complex. *H. obliqua* (also known as *H. brooksiana* (*brookeana*) F.Muell., see Blackall & Grieve 1988) applies to the species from the Esperance region. The new northern species is *H. psilorrhyncha*, the name being derived from two Greek words *psilos*, smooth, and *rhyngchos*, snout, referring to the beak of the fruit. Other members of this complex are *H. polyanthems* Diels, *H. obliqua* ssp. *parviflora* and *H. obliqua* aff. ssp. *parviflora*.

HAKEA PENDENS A new species in the H. verrucosa F. Muell group

This species has been known for some time in cultivation, although its occurrence in the wild appears to be restricted. It is unique in the genus and very distinctive by its pendent flowers, hence the name. The most closely related species are apparently *H. verrucosa*, W.A., *H. purpurea*, Qland, *H. bakeriana*, N.S.W., and possibly *H. rhombales*, N.T., S.A., W.A. With each of these species *H. pendens* shares the characteristics of large pink or red flowers (often with a white stage) in which the perianth parts do not split fully into 4, but instead only split along the dorsal suture to release the style. It is possible that this characteristic may not truly indicate close relationships but merely be a pollination syndrome the most likely pollinator being birds. In the case of *H. rhombales*, which differs from this group in a number of other respects, the flowers are unpleasantly scented, a characteristic not usually associated with bird pollination. Parker Range W.A. See June Newsletter for full description.

HAKEA HORRIDA A new species within the H. varia R.Br. complex

H. horrida is distinctive in the *H. varia* complex as well as in the genus *Hakea* by its leaf shape. It is the only species to have leaves which are deeply pinnasect. It is also one of the few species in the genus to lack a gland at the base of the ovary, a characteristic it shares with *H. ilicifolia* R.Br., also in the *H. varia* complex.

HAKEA NEWBEYANA, HAKEA BICORNATA Two new species in the H. strumosa Meissn. group

This group of species is defined by terete leaves, axillary, cauliflorous or terminal inflorescences with the rachis forming on rachises from the previous year, the rachis short and hirsute and supporting 4-12 paired flowers, the perianth glabrous or sparingly hirsute, usually curved in bud and splitting into four free parts. The pollen presenter varies from oblique to almost lateral to subperpendicular, while the gland is always a small flap at the front of the torus. The fruit is always woody and horned and retained on the bush on a thickened rachis. Species included in this group are *H. cycloptera*, *H. vittata* S.A., *H. strumosa*, *H. commutata*, *H. circumalata* together with these new species, W.A.

Within the group of species composing the *H. strumosa* group, *H. newbeyana* differs from them all by its straight buds, conical pollen presenter and yellow flowers.

Hakea bicornata seems to be most closely related to *H. newbeyana*. Both species differ from the rest of the group by the seed wing not completely encircling the seed body although it does extend down both sides of the seed body. Both species also have pedicels and perianths which are glabrous and yellow or cream-white, flowers which are not yellow overall. *H. newbeyana* and *H. bicornata* differ from each other predominately in their fruit structure, that of *H. bicornata* being much smaller than *H. newbeyana* and also possessing a pair of long slender horns in contrast to the often obscure horns in *H. newbeyana*.

HAKEA PANDANICARPA and HAKEA CRASSIFOLIA

These two taxa have been reduced to subspecies and as *H. crassifolia* is the later name, it has now become ssp. *crassifolia* of *H. pandanica*.

NAME CHANGES

Hakea spathulata (Benth) R.M.Barker was formerly *H. auriculata* var. *spathulata*.
Hakea denticulata R.Br. instead of *H. rubriflora* Lamont.
Hakea drupacea (Gaertn.f.) Roemer & Schultes instead of *H. suaveolens* R.Br.
Hakea lasiocarpa R.Br. instead of *H. dolichostyla* Diels.

There will be more extracts from this paper in coming newsletters. I wish to thank Robyn for forwarding this information and her clear concise explanations. Please do not write to the Seed Bank seeking these new species, I think some of us will have them already unknowingly, and it will take some time for the commercial seed suppliers to catch up. Good luck with your detecting.

Hazel Blackney