

ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTS

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MEMBERSHIP MATTERS: Welcome to new members Grovely Tafe (Brisbane), & Richard M. Blauman of Florida (U.S.A.).

COMPUTER: This newsletter is being typed on my elder son's machine, as the hard disc died on my old 386, & I am about to give myself a big upgrade. As I don't have the manuals, the format alters half way & I'm not sure what I did to cause it, & shan't bother to find out.

MISIDENTIFICATIONS: I had trouble with two groups of Brachychitons, both visually quite dissimilar to each other, that had flowers that kept keying out as *B. bidwillii*, so during November I took several flowering potplants along to Gordon Guymer (author of the 1988 revision of the genus, & head of the Qld. Herbarium) for identification. Both are indeed forms of *bidwillii*, he is sure.

The only slightly-lobed-leaf shrub, alleged to have originated from a collection near Weipa many years ago, & on this basis tentatively identified as *B. vitifolius* by Peter Vaughan, is according to Gordon the northern inland or Leichhardt form of *bidwillii*. Merv Hodge, of Logan Reserve south of Brisbane, has raised several very floriferous colour forms of this; pinks & reds with & without white throats. The true *B. vitifolius* I have recently seen, & it has a leaf unmistakably different, with the veins distinctly impressed (sunk) when seen from above. A group of nameless N. Qld. seedlings I am growing, which came from SGAP-Qld's seed bank about 4 years ago, look to also be the Leichhardt form.

The second shrub, with very lobed leaves indeed, which we were tentatively calling the red-flowering *B. chillagoensis*, is the northern coastal form of *bidwillii*. It has slightly smaller flowers than the Leichhardt form at its best, but like it is extremely floriferous & flowers right down to ground level. The vast majority of S.E. Qld. plants of *B. bidwillii* are shy flowerers & often gangly in shape. The true *B. chillagoensis* has orange flowers, & I am told usually not in profusion. I only know of one plant in Brisbane.

RECENT COLLECTIONS: My wife & I spent 3 weeks in the Top End, based on Darwin, during mid-October to early November. Prior to going bush I had a chat to Dr. Greg Leach, who is head of the N.T. Herbarium as well as (since a recent takeover from the

city council) the Darwin Botanical Gardens, & Dr. Ian Cowie from the herbarium who is working on a revision of *Helicteres* & some related Sterculiaceae for a future volume of the Flora of Australia. Both were very helpful, offering things like printouts of all known collection locations, & granting permission to collect from National Parks. Greg is planning extensive collecting (using Federal grant money I think he said) in the sandstone escarpment areas of Kakadu N.P. & Arnhem Land, & intends to set up living collections on a sandy ridge in the Botanic Gardens.

Ian showed me their good recent herbarium specimens of *Helicteres* et al., & their largely terrible specimens of *Brachychitons*. I gave them respectable specimens of the species mentioned later after we returned to Darwin (the herbarium is actually at Palmerston). Some specimens of interest among the northern Sterculiaceae were *Melochia umbellata*, a tree to 15m from the Kimberleys with pink/mauve flowers, orange anthers & large leaves, various shrubby *Melhanias* from south of Katherine & in the V.R.D. (Victoria River District; the part of the N.T. adjacent to W.A. (The Eastern Kimberleys at that point), & *Hildegardia australiensis* from Kakadu. This tree (to 25m) was found about 5 years ago, & other members of the genus occur in Indonesia, India & Cuba. It has an unusual green hue to its trunk, & *Argyrodendron*-like samaras (winged nuts) as seeds. Two endemic sandstone spp. which don't quite fit in *Melochia* occur at Katherine Gorge & Waterfall Creek. A colourful herb to 2m called *Pentapetes phoenicea* has bright red flowers of fair size, serrated hibiscus-like leaves, & is fairly common on the Finnis River flood plains. At Black Jungle (I do like a lot of these N.T. names; a unique silver-leaved form of the climbing aroid, *Raphidophora australasica*, also comes from here) some plants have narrow leaves & some ovate.

Three *Helicteres* of some horticultural interest are (1) the little prostrate one like a pink-flowered African violet, common round Darwin & on the Cox Peninsula; I've also seen it near Katherine, where it wasn't supposed to be. (2) *H. isora*, a bush to 2 or 3 m, with unique twisted seedpods & blue flowers which age to orange; it is in cultivation in Asia. (3) *H. dentata* var. "flagellaris" (a temporary "tag" name only), with a large inflorescence for a *Helicteres*.

Many of these *Helicteres* spp. are very tricky to identify, having tiny leaves during the Dry, & large lush leaves, often differently shaped, less hairy, & so on, during the latter part of the Wet season. So Ian has to collect several times from the same plants at different times to know what's what

At Kakadu there is a form of *Keraudrenia corollata* with big leaves; also a *Keraudrenia* at Mt. Mulligan.

BACK TO BRACHYCHITONS. We left Darwin on Oct. 31st. at 4 am, & booked into a Kununurra motel (East Kimberleys) that night at midnight Darwin time. En route I looked at a few of my favourite cycad sites, including a 7-headed 40 feet high *Cycas armstrongi*, by far the largest known in that species. We were particularly in search of the two *Brachychiton* spp. with the largest flowers, both in their own right & as parents of future hybrids, namely *B. spectabilis* & *B. viscidulus*. Both spp. had been reported by Guyer as "well worthy of cultivation as an ornamental", & as profuse flowerers, & we knew of none in cultivation. As West Australian quarantine laws allow no plant material to enter, we decided on a brief

visit to the East Kimberleys first. *B. diversifolius* trees were scattered all the way from Katherine to W.A.

The second W.A. *Brachychiton* sp. we saw was around the artificial Lake Argyll, formed by the damming of the Ord River. Lake Argyll, some 8 times the capacity of Sydney Harbour, is in very rocky terrain, & *B. viscidulus* was growing on 45-degree hillsides with more-than-perfect drainage. It was accompanied by an exceedingly prickly form of spinifex grass. No rain had yet fallen in the East Kimberleys or VRD, although it was green around Darwin. We saw no fresh flowers, only fallen ones, either here or in Jasper Gorge. Obviously Guymer was right about *viscidulus* being a profuse flowerer, for the small trees (c5x6m) were festooned by pods, in groups of 30 or so from a central point (obviously an inflorescence). Fresh seed was abundant. Tall eucalypts & other tall trees were sparse, but small trees of *Terminalia canescens* were fairly common. We had afternoon tea in the Lake Argyll carpark/recreation area, beneath some huge trees. Just beyond this level area, another 45 degree boulder-strewn slope commenced, liberally carpeted with the blue form of *Cycas pruinosa*, & scattered small trees of Emu Apple (*Owenia vernicosa*). A happy conjunction of two of the most ornamental plants of northern Australia. At this site all the *C. pruinosa* were blue, & at others all green, & elsewhere a mixture of the two colours.

The next morning we went for a drive 20 km or so towards Broome, collecting only seeds of a yellow *Grevillea refracta*, then headed back east along the Victoria Highway. Incidentally, I'd never heard anyone mention the scenery between Kununurra & Katherine, but there are interesting rock formations almost all the way, many with large colour differences between horizontal strata; reds, purples, pinks & pastels. And of course the ubiquitous ever-photogenic baobab (*Adansonia gregorii*) trees along the western half of the highway. Commencing about 5 km east of Kununurra, & extending into the Territory, were scattered plants of *Brachychiton tuberculatus*, growing in level white sand with several other small trees, and occasional tall trees of *Eucalyptus tetradonta* & *E. grandifolia*. The *B. tuberculatus* trees were c 5x4m, & very distinctive due to their big rounded (c 15cm diameter) hairy silvery leaves, paler on the underside. We could only find old pods containing a few blackened seeds (or, more commonly, none) per pod. The raised lumps or tubercles that give the species its name were obvious on all pods.

After entering the N.T., we headed north into the fairly-recently-proclaimed Keep River National Park. Passing the W.A. border the previous day, the attendant told us the shade temperature was 45 degrees C., & said Keep River would be hotter. So this day we tried it early. We did quite a bit of walking, firstly up Keep River Gorge. The sandy river itself was dry, but some black-soil waterholes in a parallel gully held water & some Johnstone River crocodiles. We fervently hoped the big "Salties" were absent, as trees (most commonly paperbark *Melaleucas* & *Exoecaria parvifolia*, Gutta-percha trees) were fairly thick, & the local cane grass about 12 feet tall. In rocky patches we saw our first blue-leaved *Livistona* sp. Victoria River, found only in this N.P. & in the Gregory National Park (which includes Jasper Gorge, our next main stop). Some of the *Livistonas* were in flower or had immature fruit; saw no ripe fruit. In Brisbane this gorgeous palm is slow growing;

ten year old seedlings at my place have about 7 leaves & stand less than a metre tall. Farther along the gorge there is a permanent large waterhole & aboriginal rock paintings, but we didn't see the latter. Some 25 or so km away, still in the park, we could drive right up to the rock formations at Gurrandaling. These are weathered flattish-topped little hillocks, virtually identical to (but less numerous than) the better-known rocks of the Bungle Bungles (in the Kimberleys). Same varied colours & horizontal strata of different compositions. Around their bases, more blue Livistonas, mostly pretty small.

Then we headed back to the highway, & east towards Victoria River. At one stage we stopped to collect baobab seeds, & I spied a colony of the desiccated fern *Platyzoma microphyllum* about 50 feet across beneath a huge baobab. I stuck 10 rhizomes in a bucket of water, & planted them in my coarse cycad mix back in Brisbane. I then read Jones & Clemesha's book, "Australian ferns & fern allies", which notes it "resents disturbance & seems impossible to grow". Luckily ferns can't read & 4 of the rhizomes are growing nicely, one of them with several fronds now a foot high. We turned off the highway and followed 65 km of gravel road to the gorge. The road then runs more or less through the centre of the gorge for many km, with occasional creek crossings. The gorge varies from little over 100m wide, to more commonly a km or more, with near-vertical sides, usually deep red, & festooned with tall thin *Livistona* sp. Victoria River, this time in vast profusion. Also lots of *Terminalias*, & an attractive dense *Angophora*. *Brachychiton spectabilis* trees, c 6x5m, were scattered in sandy loam patches among the sandstone boulders. There was also a *Gardenia* sp. of similar size, with yellow-orange papery bark & twisted limbs, like *G. megasperma*, but smaller flowers & a denser habit. Leaves looked like *G. fucata*, but more petals. Had N.T. Herbarium baffled, & unfortunately my grafts (onto *G. florida*) & cuttings failed. The *B. spectabilis* had smaller leaves than *B. viscidulus*, but just as many pods, all with fresh seed. Most pods were in groups of 10 or so, with partial fusion of the basal parts of most adjacent pods. Leaves are light green, & deltate in shape; shovel-blade shaped in young leaves. Unlike the intensely sticky (inside & outside) pods of *B. viscidulus*, these were smooth & brown. As night fell, we were serenaded by what sounded like 50 dingoes. We had seen a group of 4 earlier. The gorge walls, fairly close at that point, doubtless added to the acoustics. They put on a good show for 20 minutes or so. We spent the night at the Victoria River motel.

Next day, a brief search failed to reveal the stand of *B. spectabilis* near the Victoria River bridge, & we headed back towards Katherine, collecting seeds from trees of *B. diversifolius* every so often. Around 95 to 85 km west of Katherine, we stopped a few times & collected pods, seeds, grafting material etc. from a gangly *Brachychiton* with leaves like *B. megaphyllum*, but taller than most *megaphyllum*, although perhaps not more than the 8m maximum given by Guymer. The pods, however, were well beyond the range (6.5-11cm long by 3-4.8cm wide) quoted by Guymer, their average size being 17 x 5 cm. I gave Guymer some pods on my return to Brisbane. We finally saw two trees in flower, & the colour was the orange-apricot that I've seen in newly opened *megaphyllum*, before they turn to pink-red. Size was similar to *megaphyllum*, & the nectary number of 10 fits in with

megaphyllus. For something to call it, I'm naming it *B. sp. aff. megaphyllus*, although a subspecies or variety is more likely.

We spent a couple of hours in Katherine talking to one of my old cycad mates, then headed to Edith Falls (c10km off the Sturt Highway, which goes to Darwin) for a swim ; cool, but crawling with tourists, a species we had not seen for days. Then back to Darwin via a small detour to look at Pine Creek town & its associated large opencut goldmine & lakes. We got back by mid afternoon, having driven 2200 km in 3 days, with at least half of each day spent on foot.

I also collected lots of fresh *B. megaphyllus* seed around Darwin, mostly from an area near Holmes Jungle which is about to become a rifle range. Most plants had mature seed, but some were in flower ; none had old pods on, so they must fall off. I must have inspected over 500 plants, none over 4m high, & most under 3m, although usually multi-trunked.

GERMINATION RESULTS: On returning to Brisbane, I gave seeds of the N.T. spp. to local members, & mailed some off. Merv Hodge planted 50 or so seeds per sp., & I initially planted the 35 remaining *B. tuberculatus*, 50 *B. diversifolius*, 200 *B. spectabilis*, 100 *B. viscidulus*, & 50 *B. sp. aff. megaphyllus*. Merv also planted *B. megaphyllus*. He put 1 seed per small tube, & placed these in trays inside his plastic-coated fogging (Sydney Uni electrostatic gee-whiz type) zone, with constant moisture & a temperature of 40 degrees or more at the hottest time of the day. I put 1 seed per square native tube, in full sun, & sprinkled once or twice daily. Merv got no *B. tuberculatus* up, & I got one after 21 days, & it died a day later. I'll tabulate first germinations for the other spp.

	Time in Days	
	MERV	KERRY
<i>B. diversifolius</i>	3	14
<i>B. viscidulus</i>	4	25
<i>B. spectabilis</i>	4	20
<i>B. sp. aff. megaphyllus</i>	5	24
<i>B. megaphyllus</i>	5	--

I sowed 25 *B. diversifolius* seeds from each of 2 sites; only one group has germinated so far (as at 11-1-96). The rest, & the seeds given to Merv, have shown a very high germination; 98% for the *spectabilis*. All the *diversifolius* emerged before the first *spectabilis*, at my place, & the *spectabilis* were also tightly bunched. After 30 days the *diversifolius* made their first pair of true leaves. I doubt if moisture had any effect on the above results, & put it down to temperature, & in particular the lack of normal overnight cooling levels under Merv's conditions. We have just had a week of constant rain, following 2 weeks with rain about every second day, & I've just noted a heavy mortality in the *B. spectabilis* seedlings, & even heavier in the *B. viscidulus*. All *B. diversifolius* seedlings look fine.

SEEDS AVAILABLE: *B. diversifolius*, *discolor*, *acerifolius*, *megaphyllus*, sp. aff. *megaphyllus* (a little), *spectabilis*, *viscidulus*.
Keraudrenia hillii. Send a s.a.envelope & stamps if you want some.

FINANCIAL MATTERS: Cash in Building Society, \$ 37-48 , plus \$15 from SGAP-S.A.Region waiting to go in. Thanks to them for the \$10 donation. All recent expenditure has been on newsletter costs, & costs of mailing seed. Luckily I get free photocopying (but not paper) if I go to the office of my local M.P. I take a bundle of flowers to his secretary as extra insurance, & SGAP advertising.

SLIDE COLLECTION: Recorded all the N.T./Kimberleys spp. mentioned above, in habitat, plus quite a few small Sterculiaceae members, several still unidentified, during the ASGAP tours in Victoria during September.

GRAFTED PLANTS: Vegetative material brought back from the above trip resulted in successful grafts, all on to *acerifolius*, of *B. diversifolius* & *B. spectabilis*. The other spp. failed ; probably roasted by the heat while travelling.