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For easy photocopying.)

Why my weather obsession this newsletter : Because weather seems to explain the unprecedented flowering behaviour (or lack thereof) of many plants this year. Details later. The effects could be mainly due to the prevalence of cool weather, rather than the drought (followed by flood) conditions, as large trees were as often affected as small plants of the same genotype. The overall lack of normal hot summer & autumn conditions also affected flowering in other genera, inducing flowers in some southern wattles, for instance, that normally do not even set buds.

The joys of computer meltdown : This newsletter would have been completed several months earlier had my computer not fatally crashed, requiring a new mother board among other trifles. The firm doing this heart transplant wiped my hard disc in the process, which did not initially greatly concern me as I had (I thought) recently backed up everything on the computer on to a second & even larger hard disc. I had done this backup using Microsoft's Backup facility, which did indeed make a copy of all my files & programs. What no-one told me was that Backup does not make a copy of the Windows Registry, so that the files are there but they don't know who to talk to or how to communicate to other programs or the internet. I could not discard everything & just get a new computer, as there were lots of programs on it that are not available commercially, like my linguist/historian son's Lao-English & Khmer-English dictionaries, & some specialised statistics programs for genetic analyses. So I cursed Microsoft & their famously non-informative handbooks, & paid a firm specialising in data rescue to show me how to retrieve my files in a useful form, & then spent a month on & off retrieving & connecting & de-compressing stuff.

Weather conditions & flowering behaviour : 2008-09 should have been a uniformly hot year, if one believes the more simplistic forecasts of the global-warming commentariat. In real life the globe cooled by half a degree or so, & nothing seems to have heated much since 1998. Here in my part of S-E Qld the ten-year drought finally broke on 16-11-08, & that day Oxley Creek at the bottom of my 11 acres ran for the first time in five years, & continued to run almost all the time up to the present. During the week of the horrendous 'Black Saturday' bushfires in Victoria, several coastal Qld towns had over 1 m of rain, with Townsville receiving 191 mm next week, & flood rains over all of northern & N-W Qld, which lead to water now entering Lake Eyre. Northern NSW was flooded in late March, & again in early & mid-May. The Sunshine Coast received over 400 mm in 10 hours in early April, & it never stopped raining in N-W Qld. On 20-5-09 it rained 428 mm at Bribie Island, 300-540 mm over the Sunshine Coast, 300 mm here with similar falls through Brisbane, followed by light rain over the next week. The biggest rain since 1974. The rain depression then inundated the Gold Coast & coastal NSW to beyond Kempsey. Violent winds (which I escaped as they did not go far inland) & high seas caused vast beach erosion on the two coasts, & doubtless also on many northern NSW beaches. A friend of a friend at Maleny who bought cattle in N-W Qld just after Christmas is just about to take delivery. They, & countless thousands more, were trapped in the inland sea which covered 60% of N-W Qld. Total northern flood damage will much exceed the financial costs of the Victorian bushfires.

Here, 2008 was a year of cool summer & autumn, & 2009 likewise, despite record high temperatures in S.A. & Victoria in January & February. No day in the 40s, very few over 32, & lots in the 20s. The winter of 2008 was fairly mild here, after an early record monthly low of 1 degree in late April. The first frost was late, on the last day of July, followed by 11 frosts of -3 or less up to August the 20th. However, in Sydney July saw the first snow since 1832, plus snow at Cooktown & on the Atherton Tableland.

To return to global warming. I don't doubt it exists, or did until recently, but believe it could quite easily reverse tomorrow, as the evidence for human causation is very shaky. CO₂, in the past, has risen after temperature rises, & hence is unlikely to be the prime cause, although the physics of gases makes it undeniably a cause. Natural variability in past eras has dwarfed any recent changes, & the causes

are still largely unknown ----- solar radiation variation, volcanoes, etc., etc. In the relatively recent past, the years-long '1902' drought lasted as long as the current one, & was probably more severe, but affected fewer people due to the lower human population, minimal irrigation & vastly smaller cities. And then for nearly a century the Australian climate veered wetter again, while CO₂ rose (especially with industrialisation spurting after 1940). Thirty & 40 years ago most climatic doom-mongers writing in journals like 'New Scientist' were worried by the fact that the present warm period of some 10000 years was already longer than the average inter-glacial period, & that therefore we were probably overdue for another ice age. This is almost certainly still broadly true, just the timing is unknown (like the looming 'Big Quakes' in California & Istanbul), & would be far worse than mild global warming. Think of almost all Europe, N America & China under deep glaciers. So, at the least, any measures against global warming need to be designed to be reversible, at least in principle. Heat shields in space could be risky. Apart from them, there are at least 4 other technological 'fixes' for global warming that will all work but be horrendously expensive, but far cheaper than losing all low-lying cities & beach areas. One relatively cheap fix has recently been banned by environmentalist pressures at the U.N., possibly wisely, more probably not. This is to 'fertilise' areas of the oceans which are currently fairly barren of plankton, with iron compounds &/or sulphur, which are the limiting nutrients in these areas. Huge algal blooms would result, calcium-containing organisms would eat them, later die, & a new limestone layer form at the bottom of the ocean, locking up vast amounts of carbon. The inevitable drawback is disruption of food chains of fish & seabirds etc, perhaps enhancing fishing opportunities, perhaps not. In any case, if ocean levels rise appreciably, votes in places like the Maldives & Tuvalu, not to mention Bangladesh & Burma, would I am sure be to take the risk. Countries like Holland & Italy (think Venice) are more likely to be able to sway the U.N. in the near future. Since large ocean rises are unlikely in the near future, there is time to do the necessary science on effects like ocean acidification. Chinese & Indian industrialisation has led to massive river pollution already, with fans of 'dead' water well over a hundred miles out to sea from several big Asian rivers.

I was listening on ABC radio a day or so ago to a professor from WA, an expert on water quality whose name I failed to catch, who said he had done some sums & if all lakes on earth were heavily fertilised, the resultant algal blooms would cancel out all current anthropogenic CO₂ production.

I have been looking at the NASA website recently, which has partly solved one mystery for me, namely why most of the electronic & print media have been blithely ignoring the fact that the earth has been cooling slightly since 1998, & that Antarctica (& more recently the Arctic) has been gaining ice, not losing it. The NASA site has linked to it numerous pre-written articles on global warming, glacier meltdowns & so on, complete with nice photos taken both on earth & from satellites. All the articles were written in 2007 or earlier, using information usually much older again, & lazy journalists & politicians can easily get the disaster scenarios that sell newspapers & make gripping sound bites. In Australia the only honourable exceptions have been 'The Australian', & (some of the time) the ABC. Sea-level rises depend on melting of ice on land, as ice floats on water, so Arctic ice melting is irrelevant to that situation. Greenland & most of Antarctica are solid rock.

To quote from the 'Weekend Australian' of 19-4-09, 'Ice is expanding in much of Antarctica. contrary to the widespread public belief that global warming is melting the continental ice cap.

.....Antarctica has 90% of the Earth's ice & 80% of its fresh water. Extensive melting of Antarctic ice sheets would be required to raise sea levels substantially, & ice is melting in parts of west Antarctica. The destabilisation of the Wilkins ice shelf generated international headlines this month. However,

the picture is very different in east Antarctica, which includes the territory claimed by Australia. East Antarctica is four times the size of west Antarctica & parts of it are cooling. The Scientific Committee on Antarctic Research report prepared for last week's meeting of Antarctic Treaty nations in Washington noted the South Pole had shown "significant cooling in recent decades".

Australian Antarctic Division glaciology program head Ian Allison said sea ice losses in west Antarctica over the past 30 years had been more than offset by increases in the Ross Sea region, just one sector of east Antarctica. "Sea ice conditions have remained stable in Antarctica generally," Dr. Allison said.

Last week, federal Environment Minister Peter Garrett said experts predicted sea level rises of up to 6 m from Antarctic melting by 2100, but the worst case scenario foreshadowed by the SCAR report was a 1.25 m rise. Mr. Garrett insisted global warming was causing ice losses throughout Antarctica.....Dr. Allison said there was not any evidence of significant change in the mass of ice shelves in east Antarctica nor any indication that its ice cap was melting.. "The only significant calvings in Antarctica have been in the west", he said. And he cautioned that calvings of the magnitude seen recently in west Antarctica might not be unusual. "Ice shelves in general have episodic carvings & there can be large icebergs breaking off -I'm

talking 100 km or 200 km long – every 10 or 20 or 50 years.” Ice core drilling in the fast ice off Australia’s Davis Station in east Antarctica by the Antarctic Climate & Eco-systems Co-Operative Research Centre shows that last year, the ice had a maximum thickness of 1.89 m, its densest in 10 years. The average thickness of the ice at Davis since the 1950s is 167 m.’

It is a pity that Peter Garrett, not to mention Penny Wong & Kevin O’Rourke, don’t listen to their own scientists on simple matters of fact. Even semi-retired pop singers can listen to their numerate advisers, even if they lack the relevant skills themselves. Ditto re lawyers, politicians & economists. After recent world economic events, perhaps few people believe bankers & economists often get their sums right. Our Treasury boffins, the same crowd who regularly get their budget forecasts wrong by 10%, are happy to predict only minute effects of emissions taxes (for that is what they are) on the Australian economy 10 & 20 years in the future, with most relevant parameters for their equations missing.

Most politicians in all major western countries seem quite happy to project current trends 50 or more years ahead re climate change & its causes & correlates, blithely ignoring both changes in likely technology & in human attitudes. In this century, as in the past one, ‘The past is not a good indicator of the future’. Clean coal is expensive now, but not at some future date when the byproducts are captured & converted to useful products like industrial feedstocks. No need to sequester them. Similarly for the vast tar sand petroleum reserves of Canada & Qld; the sulphur & phosphorus ‘contaminants’ are potentially a major fertiliser bonanza. And in the last 5 years alone we have learned to do photosynthesis in a test tube, run fuel cells without expensive metals as catalysts, & vastly improved the efficiency of fuel cells, batteries & solar power collectors, just to name a few items. Already solar power collectors in desert areas of the globe could provide all our energy needs via a network of Direct Current lines (see the new network in Germany & Scandinavia as an example). Politics & dollars are the temporary stoppers. It would all be different in a war, not that I want one. Forty years ago computers were huge, slow & expensive, the internet was 2 decades off being invented, ditto most medical machinery, cars were unreliable & satellite communications still science fiction, & no-one predicted the sudden collapse of communism. Make your own list of 50 other unexpected changes, both bad & good. And I don’t think change has ended for the human race.

Plant flowering behaviour : With 4 exceptions, all my *Brachychiton*s flowered more poorly last spring/summer than usual, but many did a little better than last year.. Many did not flower at all ----- flame trees (8), *populneus* (2 large trees), *discolor* (1 large tree), *grandiflorus* & its hybrids, *muellerianus* & its hybrids,, *viscidulus*, *megaphyllus*, Jerilderie Red (may be a bit young), Butts Red (2 large trees), sp. Ormeau (1 large tree), & sp. Exmoor Station.

All the above have flowered at least once in the past, at my place. Every large plant of Clarabelle, Griffith Pink & Belladonna has flowered every year except last year, & they all flowered this year, but very briefly in the case of Griffith Pink & Belladonna. Flame trees & *discolor* are variable from year to year..

My plants of *collinus*, *rupestris*, *compactus*, *albidus*, *chillagoensis*, *diversifolius* & *australis* are too small to have flowered as yet. The plants which flowered well were *B. garrawayae* (I only have one plant) from Cape York, 1 of the 8 clones of ‘Jasper Belle’ (*spectabilis* x *bidwillii* ‘Beau Belle’), all or almost all of the 45 clones of ‘Robin Hood’ (*acerifolius* ‘Ian’ x *bidwillii* ‘Large Red’), & *B. x excellens* ‘Rosalind’ (*discolor* x *bidwillii*, 1 large tree).

One clone of Jasper Belle has not flowered for 3 years, & 6 others only flowered briefly. These other clones performed better at Merv Hodge’s place, which is warmer than mine, but were still far inferior to his best clone. My best clone, the only one which will be propagated by me, flowered well here for 3 months from mid-September 2007 to Feb. 2008, was in bud again by 1-4-08, in flower by mid-April & by early May to late July was at a peak for numbers of flowers, but they were individually small. There were hordes of little ones, one third the size of the spring-summer ones. The cool weather slowed the development of each flower so that they took weeks to progress from buds to senescence, instead of the usual five days or so. The -3 & -2 frosts in August knocked off most of the buds, but not all, & the open flowers were unharmed. As it warmed up the flower size increased, being back to normal by mid-September, & a dense flowering continued until mid-January 2009, with the last flowers on Jan. 20th. Two months later flowering resumed, with lots of the small ‘autumn-winter’ blooms, & has continued until the present (late May). No other *Brachychiton* was even in bud at my place during autumn & winter of 2008, & only *B. garrawayae* was in bud in May 2009. My best clone of Jasper Belle I am individually naming as ‘Jasper Lode’, as it is so different to my other clones of Jasper Belle, & as I will probably PBR it. Some of

the other Jasper Belles have been sold by Merv or I in minute quantities. These other clones flowered only briefly in 2008, starting in July.

The first Robin Hoods began to flower in mid-July 2008, were not affected by the frosts, were at peak flowering in October & November, & had finished by late January 2009, the same time that they ceased flowering in 2008.

The straight *bidwillii*s gave a mixed flowering picture during last spring-summer. Several shrubs of *B. 'Red Belle'*, which I have called 'Large Red' up to now, flowered very well at Merv's, being at peak flowering from October to December but lasting till late January 2009, with an occasional flower thru to late March. My own plants did not flower, & they gave a poor performance the previous year also, although some flowered briefly. At both properties, *bidwillii* 'Beau Belle' flowered briefly & poorly, quite unlike its usual performance. *B. bidwillii* 'Cormy' flowered well, over a similar period to 'Red Belle'. "Cormy" was named because it flowered cormiflorously, 'on the trunk', at its first flowering as a 2-year-old, from all its 1.5 m of trunk, as well as on its twigs, the previous year. Its flowers are about 2/3 the size of those of Beau Belle, which is likely to be its parent. All other forms of *bidwillii* flowered for only about 2 weeks at my place.

B. garrawayae from Cape York started to flower in early October 2008, was at its peak a week later, & flowered well until early December when it finished. As of late May 2009 it is covered in buds & is obviously going to flower in June, four months earlier than in the previous two years.

B. spectabilis flowered well during November, & moderately through December; the best flowering yet. Clarabelle flowered quite well through November & December '08.

Rosalind, a *B. x excellens*, only had a few flowers, over a 2.5 week period starting in late November. Griffith Pink was similar. Both have *discolor* as one parent. None of the tropical species, not mentioned already, had any flowers.

The drought last year carried off all my plants of *Thomasia*, *Guichenotia* & *Lysiosepalum*. None of my plants of *Lasiopetalum*, *Keraudrenia* or *Seringia* flowered this year. The more distant Malvaceae relatives *Hibiscus*, *Alyogyne* & *Abutilon* flowered normally if watered.

Seed Set : Jasper Lode had quite a few female flowers in spring, & 5 pods were set to either its own pollen, or to *garrawayae*. In earlier years only a couple of female flowers, or none, were produced. A little later 10 or so pods were set, some to Clarabelle & some to *spectabilis*, but all of this group were aborted as flowering began to slow down. Whether they would have carried on, if pollinated earlier in the season, I know not. The seeds looked perfect from the first 5 pods, but fewer than expected seedlings have resulted. Each pod was sown separately, & 3 pods yielded no seedlings, & one gave one only. Maybe some more will germinate in spring. I grow them in pots on top of a table that rodents cannot climb or jump onto, as mice & rats are very fond of brachy seeds, & can smell them in newly sown pots. I am not entirely sure which male parent produced which pod, but leaf shapes should reveal all a little later. I pollinated quite a few female flowers of *garrawayae* to itself, but no pods looked like setting. Clarabelle flowers pollinated to *spectabilis* led to pods which aborted at about 1/3 of normal size. I have yet to see a pod on my own Belladonna or Jerilderie Red plants, though both can set seed.

Yearly summary : A newish SGAP requirement.

Horticultural details have been recorded on many new promising hybrids, & unusual flowering durations noted on many *Brachychiton* species & hybrids. Cultivars in demand include Beau Belle, Jasper Belle, Belladonna, Clarabelle, Red Belle,

B. spectabilis & the Robin Hood clones. A Toowoomba nursery has started to multiply Griffith Pink because it is so cold-tolerant.

A list is given of new hybrid seedlings raised (n/1 no. 34), plus observations on 'new' hybrids & a white colour variant of *B. megaphyllus*. Also some speculations re global warming & related matters.

Best wishes to all for the new financial year, & may it rain when you want it.

Kerry.