

ANPSA PALM & CYCAD STUDY GROUP nEWSLETTER

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Dilatory newsletter editor : I got snowed under by other things, so 2010 passed me by. I shall update my records to show everyone as paid up for 2010. The largest distraction was the Brisbane & Toowoomba floods, & my wife being involved in long-distance management of her parents' affairs, as one died & one moved to a Sydney retirement village. Our local branch of SGAP, as it is still called in Qld, put on an 8-day State SGAP Conference in September 2010, with a following weekend on South Stradbroke Island for about half the participants. This seemed to go very well, but took time in planning & all the usual running about choosing gardens & patches of bushland to visit. More recently Annabel broke her right leg, & I had to learn some household tasks I had managed to dodge for many years.

Cycads moved from Darwin: Among the cycads my brother moved from Darwin to Kurwongbah on the north side of Brisbane were quite a few natives, which have settled in quite well for the most part. Some *Cycas armstrongii* plants are currently leafless, but others are leafed up, as are several *C. maconochiei* & a lone *C. angulata* with a short (30 cm) but massive trunk. Smaller plants of *C. media*, *C. coultssiana* & *C. cairnsiana* seem fine. The last of these is hard to keep going in Greenbank, as is *C. platyphylla*, & I lose about 80 % in their first 3 years, so have moved their pots to warmer gardens over recent winters. The alleged 'Bathurst Island' cycad is still leafless. May well revive next summer, as I have had several *C. megacarpa* & *C. maconochiei* plants stay leafless for a year or two before returning to normal. I had plants of *C. calcicola* & *C. conferta* & *C. arnhemica* survive for a few years, going back all the time. Just not enough stinking hot days in Greenbank for their tastes. *C. apoa* from New Guinea is a bit the same way. Doesn't quite die, but rarely looks happy. Specimens of several exotic cycads are thriving, including *Cycas panzhihuaensis*, *C. chamberlainii*, *C. rumphii*, *C. taitungensis*, *C. pectinata*, *C. riuminiana*, *C. wadei* (Greenbank was too cold for it to be happy there), *Dioon spinulosum*, *D. mejiae*, *D. merolae*, *D. rzedowskii* (needs shade & Calcium), *D. califanoi*, *D. edule* (various subspecies) & a number of small-growing *Zamia* species. All *Ceratozamia* species are happy at both sites.

New Books: John Dowe's book on the palms of Australia & of Christmas, Lord Howe & Norfolk Islands, came out in 2010, with 304 pages & 300 images. It is a paperback, published by CSIRO, & a bit dear at its RRP of \$140 (from Aust. Plants Vic. it is \$ 105 for APS/SGAP members, plus postage). A good book all the same.

Casualties from the July 2007 freeze : Everything I thought was dead then has proved permanently so, including my 10 *Cycas angulata*, my sole *C. arnhemica*, & all *Archontophoenix* & *Laccospadix* not moved into my wet patch (watered every 2 days in hot weather, for the benefit of my non-hardy ferns), except for *A. cunninghamii* & *A. purpurea* palms over 15 years old.

Cycad transplants to Kurongbah from Greenbank : I am planning to move to Toowoomba in the next 12 months or so, if the market for houses on acreage here improves a bit. My anaesthetist son & his GP wife seem indelibly attached to that city, & as it contains all 3 of my grandchildren plus built-in medical oversight when I am older, I have yielded to wifely & offspring pressure. I have been digging up & moving most of my larger cycads to my brother's 10 acres on a peninsula jutting into Lake Kurwongbah, as I won't have room for most of the big ones at Toowoomba, & my wife has vetoed the *Encephalartos* as their spines are likely to shred the aforesaid grandchildren, whose bike-riding & other activities are marked by enthusiasm rather than precision at present. I have moved several *Macrozamia moorei* with 2 metre trunks, 20 or so *Encephalartos* species about 25 years old, a *Cycas canalis* with a 1.5 m trunk that I collected in the N.T. about 1985, & lots of smaller *Cycas*, *Dioon* & *Macrozamia* species. My 30-yr old *Macrozamia macdonnellii* & lots of smaller *Macrozamia*, *Bowenia*, *Zamia* & *Ceratozamia* species have been potted up with no signs of ill effects to date.

News snippets: Palm & other plant remains in Egyptian & Nubian tombs have, via radiocarbon dating, enabled archaeologists to put dates on some of the mysterious dynasties of Kush, the African neighbours of ancient Egypt who were in some cases closer to Egypt in culture & technology than had been known until quite recently. Also, some Egyptian dynasties started earlier than expected, with Djoser's (Old Kingdom) reign starting between 2691 & 2625 BC, & the New Kingdom (which included Tutankhamon & Akhenaton, perhaps the first monotheist monarch in the world) started between 1570 & 1544 BC (Science). Getting some fairly firm dates for Egypt is important, as the order of reigns is known with some precision, & ancient Egypt produced diplomatic mail & inscriptions in profusion, which in turn allows dates for events in places like Syria, Cyprus, Phoenicia, Babylon, Mitanni, Troy & the Hittite Empire (in modern Turkey) to be calibrated. Biblical scholars get little joy out of Egyptian records as the Israelites were too minor a people to have much recorded about them. I suspect if we could go back in time for a look at Solomon's Temple & palace we would not be greatly impressed.

Palm oil, trans fatty acids & related matters : One of the great controversies of our time is now raging about palm oil. Trans fats are synthetic lipids extracted from partially hydrogenated vegetable oil, produced by chemically altering the oil to harden it & stop it from degrading at high temperatures, as in fish-&-chips frying vats. They also raise levels of LDL cholesterol (often called the 'bad' cholesterol) in the body, & lower the level of 'good' HDL cholesterol. In 2003 Denmark banned oils with more than 2 % trans fats, & some countries have followed this lead, but not Australia or the US. Deaths from heart disease in Denmark have dropped by 20 % since 2003. McDonalds in Denmark switched to mono-unsaturated fats like Canola oil, but the firm claims some consumers dislike the taste, a claim denied by Danish cardiologists.

Palm oil is cheap & readily available, & margarines & cooking oils based on it are major components of many Australian diets. The common & cheaper brands of biscuits, cakes etc. usually contain it, under the usual 'local & imported.....' weasel statement. Unfortunately, palm oil (from *Elaeis guineensis* most commonly, but also from *E. oleifera*, the American oil palm), contains 50 % saturated fats. *E. oleifera* is the more tropical species, & needs copious water & soil with some humus, & so is used less commercially than the African oil palm. Riffle & Craft's book, 'An Encyclopaedia of Cultivated Palms', states the former 'may have the potential of being immortal unless destroyed by mechanical factors', as the trunks start out prostrate & end up under 7 m tall x 30 cm thick, with the whole trunk forming aerial roots. So the stem avoids the stresses of great vertical height, which usually dooms other single-trunked palms. Personally, I avoid trans fatty acids as much as is conveniently possible, & would avoid more if temptations like chocolate biscuits were better labeled. Two medicos in my extended family go to great lengths to avoid them, culling all bought biscuits, pies & pastry from their diets.

Most environmentalists condemn all palm oil plantations, as native forest cleared for palms has led to a great loss of habitat for animals in general & orang-utans & human hunter-gatherer ethnic minorities in particular, throughout S-E Asia, while the grab-the timber-then-bulldoze-&-burn policy followed by many companies has started fires in the underlying peat (&, surprisingly often, barely-buried coal seams) that often burn for as long as decades. There is a huge loss of organic carbon, built up over millennia, & the 'Asian brown haze' resulting is a serious threat to human health in many countries. Erosion is often severe. China buys most of the timber & finances much of the activity. Malaysia & Indonesia are the 2 largest palm oil producers, with 85.3 % of world production, but Laos & Burma are busily destroying their forests too, at an ever-increasing rate, mostly in mountainous areas where erosion will be catastrophic. Cambodia & Vietnam have turned their generally flatter land into rice paddies long ago, & in Vietnam's case cities are springing up everywhere, built using timber from Laos & Burma. In July 2010 CSR sold its sugar & sustainables division, Sucrogen, to Singapore agribusiness firm Wilmar International, the world's largest processor & merchandiser of palm oil (Sydney M.H., 23-7-2010). Australian consumption of palm oil in food is around 10 kg per person annually. Strong lobbying in Europe by groups like Greenpeace has caused firms like Nestle, Unilever & Kraft to suspend palm oil purchases there (but not here).

Not all palm oil development is, nor need be, harmful. To crib a few figures from a Malaysian advertising/fact section in the April 2011 issue of 'Scientific American', it is a highly productive crop, & can produce 4.13 tons of oil/ha versus 0.75 for canola, 0.58 for sunflower, & 0.40 for soybean. Also, byproducts include 0.5 tons of palm kernel cake used as animal feed. Palm oil is widely used in soap, detergents, light lubricating oils & biodiesel. Also, being perennial, relatively pest free & adapted to poor

soils, less erosion is caused by tilling, & less chemical pollution incurred. This gives scope for less total land use for food & industrial oil & biofuel purposes. Using prime agricultural land for maize & sugarcane crops for fuel alcohol production in N & S America is, to my mind, a far worse crime. The food foregone, & resultant astronomical grain etc. prices in many poor countries, are tantamount to near-genocide.

The same issue of Scientific American reports (p.M9) on research on tocotrienols, a potent form of vitamin E found abundantly in palm oil, but not in other edible oils like soybean, olive & sunflower. 'Vitamin E consists of 8 molecules ---4 known as tocopherols & 4 tocotrienols. Most vitamin E preparations in the market contain only one form, namely alpha-tocopherol which is found in most edible oils'.

The tocotrienols have several unique biological activities, & 'can prevent programmed death of brain cells under stress by suppressing key cell signals'. US experiments on mice genetically modified to be prone to strokes have shown they can minimize damage to brain cells. Double-blind human trials studying volunteers with MRI receiving tocotrienols or placebos over 2 years will finish in late 2011. It is hoped that tocotrienol extracts may lower risk of strokes & heart disease.

Best wishes to all.
Kerry.