ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTS.

AUSTRALIAN FOOD PLANTS STUDY GROUP. **ISSN 0811 5362.**

NEWSLETTER

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323 Philp Ave
Frenchville
Qld. 4701
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Dear Members and subscribers,

Well, Spring well and truly sprung, and after the coldest winter for years, we almost missed it and went straight into Summer. And Summer we are having!! Very, very hot; very, very humid; quite like old times actually. The air is heavy, everything is green, and the grass grows as you watch.

A word of warning: DON'T plant Cheeky Yam (*Dioscorea bulbifera*) in your home garden unless you have both an enormous amount of room, and plan to eat an enormous amount of the vegetable. In the current conditions it has resurrected itself and taken off with a vengeance, choking and smothering everything nearby, and eradicating it is proving very difficult indeed.

The cold winter resulted in a bumper crop of raspberries (*Rubus probus*) which was very welcome after the poor harvests of the previous couple of years, and both types of native violets (*Viola hederacea, H.betonifolia*) thrived. The flowers have made an interesting addition to salads. I have actually been given a jar of French Violet Petal jam, which is delicately flavoured and perfumed, but I haven't got round to trying my hand at jam making with the native ones yet.

We found the best Sandpaper Fig (*Ficus opposita*) fruit we've tasted for years at our SGAP breakup on 7th December, at the park out at Cammoo Caves. The barred caves and walks are now part of The Caves National Park. The large Fig tree is right at the edge of the picnic area, and it was heavily laden with large - a little smaller than a ping pong ball - black fruit, with a soft, sweet, green interior. Even the birds had not succeeded in stripping the tree, but we managed to pick and eat most of the reachable ripe fruit during the course of the afternoon, leaving the green fruit crowded along the branches a bit more room to develop.

As part of our very slow and never-ending garden tidy up we had to remove a seedling Peanut Tree (*Sterculia quadrifida*) that had been growing undetected for a couple of years. To my surprise, it had a

well-developed tap root like a very large brown carrot. The cream coloured flesh was very juicy and crisp, but not as hard as a carrot, and with more liquid. I couldn't find any information about edibility or otherwise, but most species of the related *Brachychiton* genus can be used as emergency sources of water and many are edible, so I gave it a go. No discernable smell, pleasant texture, but unfortunately, it tasted unpleasant. Not gag and spit it out unpleasant or acrid burning, but not nice. So, emergency survival only.

Ernie Rider sent copies of two recently published papers on new species. The first, from Bean and Albrecht, is *Solanum succosum*, closely allied to *S.chippendalei* but, unlike its highly valued cousin, not apparently regarded as edible by the Aborigines, and found in the Northern Territory and Queensland. However, the detailed descriptions, differentiation characteristics and ethnobotany of both species is very useful.

The second, by Guymer, describes *Capparis batianoffii*, found in the very restricted habitat of Gloucester Island off the Central Queensland coast. However, the fruit has not been seen, though as other species of *Capparis* are edible, it probably is too.

A reminder also, that the ASGAP Biennial Conference and Seminar is scheduled for September 2009 in Geelong. Study groups have been invited to mount displays there. However, I will not be attending the Conference due to other commitments, so if there is anyone who would be willing to put one together there for the Food Plant Study Group, I'd love to hear from you.

The months have flown past, and as usual, I seem to have too much to do in too little time. So I'll close by wishing you all the best for the Christmas Season and the coming year.

Regards,

Lenore Lindsay and Rockhampton SGAP.

E-mail: lenorelindsay@hotmail.com

EDIBLE SPECIMENS TABLED AT MEETINGS:

27/6/08: *Acronychia laevis, Alectryon tomentosus, Arytera divaricata, Bridelia leichhardtii, Cupaniopsis anacardioides* (fruits), *Callistemon polandii, Lysiphyllum hookeri* (nectar), *Diospyros humilis, D.geminata, Eugenia reinwardtiana, Lysiana filifolia, L.maritima, Murraya ovatifoliolata* (fruits), *Orthosiphon aristartus* (medicinal), *Phaius australis* (tubers), *Pouteria pohlmaniana, P.sericea* (fruit), *Sterculia quadrifida* (seeds), *Trophis scandens* (arils).

25/7/08: *Amyema bifurcata, A.cambadgei, A.congener, A.conspicua, A.miquellii, A.pendula, A.mackayense, A.quandang, Amylotheca dictyophleba, Callistemon* "Tinaroo Falls" (nectar), *Dendropthoe glabrescens, D.vitellina, Eugenia reinwardtiana, Dianella sp, Diplatia*

furcata, Diospyros geminata (fruit), *Ficus sp* (fruit, shoots, medicinal sap), *Geijera paniculata* (medicinal), *Grewia latifolia* (fruit), *Hibiscus heterophyllus* (buds, flowers, shoots, roots), *Lysiana filifolia, L.maritima, L.subfalcata, Notothixos incanus, N.subaureus, Viscum articulatum, V.bancroftii, V.whitei* (fruit).

22/8/08: *Alectryon tomentosus, Arytera divaricata* (fruit), *Callistemon* "Cameo Pink", *C.*"Cherry Time", *C.viminalis* Bob's Creek (nectar), *Diospyros geminata* (fruit), *Grevillea* "Honey Gem", *G.*"Peaches and Cream", *G.*"Strawberry Blonde", *G.venusta* (nectar), *Leptospermum polygalifolium* "Cardwell", *L.polygalifolium* Byfield (leaves as tea), *Livistona decora* (palm "cabbage"), *Prostanthera incisa* (2 forms), *P.lasianthus* (leaves).

26/9/08: *Acacia cambagei* (gum), *Callistemon viminalis, C.*"Tinaroo", *Melaleuca sp., M.dealbata* (nectar), *Santalum lanceolatum* (fruit), *Geijera parviflora* (medicinal).

24/10/08: *Acacia decora* (gum), *Backhousia citriodora* (leaves), *Brachychiton bidwillii* (seeds), *Callistemon sp.* (nectar), *Capparis lasiantha* (fruit), *Cassia brewsteri var tomentella* (seeds and pulp), *Cymbidium canaliculatum* (pseudobulbs), *Dianella caerulea, Diospyros humilis* (fruits), *Ficus opposita* (fruit, shoots, medicinal sap), *Grevillea banksii* (nectar), *Grewia latifolia* (fruit), *Hibiscus heterophyllus* pink and yellow forms (buds, flowers, shoots, roots), *Lomandra longifolia* (leaf bases), *Lysiphyllum hookeri* (nectar), *Nauclea orientalis, Planchonia careya, Pleiogynum timorense, Pouteria pohlmaniana, P.queenslandicus* (fruits), *Sterculia quadrifida* (seeds), *Syzygium australe, S.luehmannii* (fruit).

28/11/08: *Brachychiton bidwillii* (seeds), *Melaleuca leucadendra* (nectar), *Orthosiphon aristartus, Petalostigma triloculare* (medicinal).

EXCURSIONS:

1/6/08: Tondoon Eco-Fest: Rockhampton SGAP members supported Gladstone SGAP in their big display/demonstration tent.

6/7/08: Serpentenite vegetation at Mt Wheeler and Thompson's Point: *Alpinia cerulea* (fruit, roots), *Callistemon polandii* (nectar), *Rubus moluccana* (fruit), *Wahlenbergia communis* (flower), *Lomandra confertifolia, L.longifolia, L.multiflora, Xanthorrhea johnsonii* (leaf bases).

3/8/08: Frenchman's Creek Public Workshop in conjunction withGreening Australia: *Callistemon viminalis, Melaleuca fluviatilis* (nectar), *Pleiogynum timorense, Syzygium australe, Diospyros humilis* (fruit), *Ficus opposita* (fruit, shoots, medicinal sap), *Cycasophiolitica, Macrozamia miquellii* (treated seeds).

7/9/08: Coconut Point, Zilzie, with Emu Park Community Bushcare: *Sarcocornia quinqueflora, Suaeda australis, Sesuvium portulacastrum* (leaves), *Carpobrotus glaucescens* (fruit, leaves), *Myoporum acuminatum* (fruit), *Avicennia marina* (cooked seeds), *Cupaniopsis anacardioides* (fruit).

5/10/08: Canoona: *Alectryon connatus, A.subdentatus, A.tomentosus, Acronychia laevis, Diospyros geminata, D.humilis, Carissa ovata, Bridelia leichhardtii, Drypetes australasica, Grewia latifolia, Myoporum acuminatum, Cyclophyllum coprosmoides* (fruits), *Acacia disparrima* (root), *A.decora* (gum), *A.holosericea* (seed), *Ficus opposita* (fruit, shoots, medicinal sap), *Hibiscus* sp.(Glen Geddes), *H.heterophyllus, H.splendens* (buds, flowers, shoots, roots), *Geijera salicifolia* (medicinal), *Lantana camara*, Planchonia careya, Psychotria loniceroides, Psydrax odorata, Rapanea variabilis, Dianella sp., D.rara* (fruits), *Petalostigma pubescens* (medicinal), *Eustrephus latifolius* (tubers, arils), *Gahnia aspera* (seeds).

2/11/08: "Coominglah", Baralaba with Baralaba Landcare: *Acacia farnesiana, A.salicina, A.stenophylla* (seeds), *Alectryon connatus, A.diversifolius, Capparis canescens, C.loranthifolia, Carissa ovata, Citrus glauca, Diospyros humilis, Gossia bidwillii* (fruits), *Brachychiton australis, B.rupestris* (seeds, roots, shoots, mucilage from wood), *Clerodendrum floribundum* (root), *Ficus opposita* (fruit, shoots, medicinal sap), *Hibiscus heterophyllus* (buds, flowers, shoots, roots), *Geijera parviflora* (medicinal), *Lysiphyllum hookeri* (nectar), *Eucalyptus camaldulensis, E.coolabah* (seeds), *E.exserta* (nectar, leaves for flavouring & medicinal), *Melaleuca linariifolia, M.trichostachya* (nectar), *Pouteria cotonifolia, Psydrax odorata, Santalum lanceolatum, Capparis lasiantha* (fruit), *Cissus opaca* (tuber), *Tetragonia tetragonioides, Einadia hastata* (cooked leaves), *Wahlenbergia sp.* (flowers), *Amyema congener, Dianella caerulea* (fruit), *Opuntia tomentosa* (fruit, pads), *Cymbidium canaliculatum* (pseudobulbs), *Lomandra longifolia* (leaf bases).

7/12/08: Cammoo Caves: *Acacia aulacocarpa, Clerodendrum floribundum, Erythrina vespertilio* (roots), *Alectryon subdentatus, Capparis arborea, Carissa ovata, Cordia dichotoma, Cupaniopsis anacardioides, Diospyros australis, D.geminata, D.fasciculosa, Drypetes deplanchei, Exocarpus latifolius, Grewia latifolia, Lantana camara*, Mallotus discolor, Pipturis argenteus, Pleiogynium timorense, Pouteria pohlmaniana, Psydrax oleifolia, Rapanea variabilis, Siphonodon australis, Terminalia porphyrocarpa, Melodorum leichhardtii, Smilax australis, Tetrastigma nitens* (fruits), *Ficus opposita, F.rubiginosa, F.virens* (fruit, shoots, medicinal sap), *Hibiscus heterophyllus* (buds, flowers, shoots, roots), *Geijera parviflora* (medicinal), *Sterculia quadrifida* (seeds) *Geitonoplesium cymosum* (shoots), *Cayratia acris, Cissus oblonga, C.cardiophylla, C.reniformis* (fruit flesh), *Trophis scandens* (arils).

Ian Anderson has very kindly sent us a reprint of his article on Australian native figs which was published in the September 2007 issue of "Australian Plants". The full title is "The Occurrence and Cultivation of Native Figs (*Ficus sp.*) in Southeastern Australia. Species mentioned are *Ficus microcarpa* var *hillii, F.platypoda, F.rubiginosa, F.coronata* and *F.macrophylla.*

As most readers will already receive "Australian Plants" it doesn't seem appropriate to reprint the whole article, so if anyone hasn't seen the original and would like to have a copy, please let me know and I'll send you one. (Ed.)

LETTERS TO THE EDITOR

Monto, Qld. 4630.

Dear Lenore,

Just a short note mainly to thank you for the newsletters and also thanks so those who worked on getting the two trees to me.

This is a list of the bush tucker plants we have here. We started planting three years ago.

Acronychia oblongifolia.....3
Alectryon coriaceus.....2
Anethola anisata.....2
Antidesma erostre.....1
Austromyrtus hillii.....1
Backhousia angustifolia (native to this area).....1
Backhousia myrtifolia.....5
Citrus australasica.....42
Citrus glauca.....44
Curcuma australasica.....1
Davidsonia pruriens.....4
Diploglottis australis.....5
Diploglottis diphyllostegia..1
Diploglottis sp (unknown)....1
Elaeocarpus bancroftii.....1
Eupomatia laurina.....1
Ficus opposita (native around here).....Quite a few
Glycosmis trifoliata.....3
Cullen tenax.....2
Clausena smyrelliana.....2
Piper novae-hollandiae.....2
Pouteria pohlmaniana.....1
Podocarpus elatus.....14
Rubus probus.....3
Rubus parvifolius (native to this property).....3
Sterculia quadrifida (native to this property).....2
Syzygium australe.....12
Syzygium forte.....1
Syzygium oleosum.....6
Syzygium alliiligneum.....2
Diospyros australis.....2
Eremophila debilis.....2
Rhodamnia argentea.....1
Melodorum leichhardtii.....2
Aleurites moluccana.....1
Acronychia wilcoxiana.....2
Alpinia caerulea (Atherton form)..1
Unidentified local native ginger..5
Austromyrtus dulcis.....2
Backhousia citriodora.....3
Brachychiton bidwillii.....3
Citrus australis.....17
Citrus inodora.....3
Davidsonia jerseyana.....1
Decaspermum humile.....2
Diploglottis campbellii.....16
Diploglottis smithii.....2
Elaeagnus triflora.....3
Eugenia reinwardtiana.....5
Ficus coronata.....1
Mentha diemenica.....1
Clausena brevistyla.....2
Mischarytera lautereriana.....2
Pouteria australis.....7
Pleiogynium timorense.....20
Randia fitzalanii.....1
Rubus moluccanus.....1
Syzygium fibrosum.....1
Syzygium luehmannii.....5
Syzygium paniculatum.....6
Syzygium rubrimolle.....1
Diospyros pentamera.....1
Elaeocarpus grandis.....1
Acacia victoriae.....14
Araucaria bidwillii.....14

As well, we have 4 acres of rainforest trees (approximately 1800 trees of about 60 different varieties) started in November 1995. One of these that may be of interest is a planting of approximately 140 Ooline (*Cadellia pentastylis)* of which 4 grew seed this year.

Seed on hand:
Acacia harpophylla (Brigalow)
Erythrina vespertilio (Bat's Wing Coral Tree)
Pittosporum angustifolium (Gumbi Gumbi)

Seed or plants I would like to get:
Athertonia diversifolia (Atherton Almond)
Clausena smyrelliana (Coastal Wampi)
Hernandia bivalvis (Grease Nut)
Bombax ceiba (Silk Cotton Tree)
Harpullia arborea (Dwarf Tulip Wood)
Carissa ovata (Currant Bush) from your area as they have bigger fruit than the one round here.

This is very much an on-going operation. If anyone is going to be round here give me a call and come and see us.

Thank you again,
Alan F. Knight.

If anyone is going to be anywhere near Monto at any time and would like to call on Alan, please contact me and I will pass on his phone number. Rockhampton SGAP is hoping to arrange a weekend in Monto in early 2009 to see Alan's property, and the Bush Food plantings at the high school, as well as significant remnant vegetation in the area. The local Landcare Group is very active and committed, and we will be liaising with them. (Ed.)

NOTES AND E-MAILS

Colleen Keena has suggested that we ask members to send in their favourite bush food plant recipes for publication. I think it's a great idea, so will look forward to receiving many interesting items.

Pauline Guest has changed jobs, and is now working for Wattleseed Australia in Westonia, Western Australia.

The Queensland Bushfood Association has been approached by people wanting to buy large amounts of frozen *Davidsonia* fruit and dried Lemon Myrtle leaf. Website http://www.qldbushfood.com

Therese Moffatt of Amaris Botanicals wishes to purchase Finger Lime peel. therese@amarisbotanicals.com.au

Yvonne James, editor of "The Bushfood Bulletin", the newsletter of the Queensland Bushfood Association, reported in the Winter 2008 issue concerning the interest shown in their stall at the ABC Garden Expo in Brisbane. Most of the people she spoke to had at least heard of Lemon Myrtle, and quite a few had used it, especially in cheesecakes. The fruit that caused most interest was the Finger Lime, partly due to its being featured in the Sub-Tropical Gardening Magazine. She also enjoyed the cooking demonstration of a kangaroo dish with lemon myrtle sauce, cooked by chef Bryan of Tukka Restaurant.

RECIPES

Scallops with Finger Limes **(Maggie Beer on "The Cook and the Chef" ABC Television)**

12 scallops
butter and oil for frying
zest of 2 limes
juice of 1 lime
3 tablespoons extra virgin olive oil or macadamia oil
1 to 2 finger limes "podded" (about a dessertspoon of "pearls")
sea salt and freshly ground black pepper
sprigs of chervil for serving

1. Finely grate zest of half a lime over scallops and let sit until ready to cook.

2. Make vinaigrette by grating the zest of the rest of the limes, and the juice of one lime into a small bowl and season with pepper and salt. Add the oil and mix and leave to stand.

3. Heat a wide flat pan with butter, and a little oil to stop it burning. Salt the scallops and drop half into the pan to just sear, not crowding the pan and not cooking for long. Take off and drain on absorbent paper and sear the remaining scallops.

4. Put them all onto the serving plate, drizzle with the vinaigrette, and top with the finger lime pearls. Season with pepper and salt and garnish with sprigs of chervil. Serves 2.

Macadamia, White Chocolate and Raspberry Muffins **(Friends of the Rockhampton Botanic and Kershaw Gardens newsletter, August 2008)**

½ cup (95g) white chocolate buds
¾ cup (155g) caster sugar
2 cups (300g) SR flour
½ cup (80g) coarsely chopped macadamia nuts
1 cup (125g) native raspberries
1 egg, lightly whisked
½ cup (125ml) macadamia oil
¾ cup (185ml) buttermilk

1. Preheat oven to 200°C. Place paper cases in muffin tray.

2. Combine white chocolate, sugar, flour and macadamias in a large bowl.

3. Coarsely chop half the raspberries, and add all the raspberries to the mixture. Stir to combine. Make a well in the centre.

4. Whisk egg, oil and buttermilk in a jug. Pour into the flour mixture. Gently stir till just combined.

5. Spoon evenly among pans. Bake for 20min or until golden and cooked through. Remove and set aside for 5 min. Serve warm.

Lemon Myrtle Prawns **(Lien Yeomans on "The Foodlovers Guide to Australia" SBS Television)**

8 large green king or tiger prawns

8 teaspoons finely chopped lemon myrtle leaves
8 teaspoons chopped golden shallots
8 teaspoons minced garlic
4 teaspoons chilli sauce (recipe below)
2 teaspoons black pepper
300 ml fish sauce
400 ml light olive oil

1. Devein prawns with skewer and remove legs with scissors.

2. Combine rest of ingredients to make a marinade, cover prawns with it and leave to stand.

3. Grill and serve with a mayonnaise sauce made with egg yolk, olive oil, garlic, lemon juice and lemon myrtle leaf.

Chilli Sauce

250g fresh red chillies
250 ml palm vinegar
1 teaspoon garlic
1 teaspoon lemon grass
salt
black pepper

1. Chop ingredients finely, combine and stand to allow flavour to develop.

Sweet Davidson's Plum Sauce **(Graeme White & Veronica Cougan in "The Bushfood Bulletin" Winter 2008)**

6 Davidson's Plums, seeds removed, finely chopped
1 cup water
2 cups orange juice
¼ cup caster sugar
2 sticks cinnamon
1 cup port
½ cup honey

1. In a medium sized stainless steel saucepan, combine plums, sugar, water, juice and cinnamon. Place over a medium heat and gently simmer for 20 min.

2. Remove from heat, discard cinnamon sticks, and puree the sauce.

3. Return the sauce to the saucepan, add port and honey and simmer gently for 5 min or until the sauce has the desired smooth consistently.

The winged plum seeds make decorative additions to pot pourri.

Ooray Beef or Kangaroo with Lemon Myrtle Rice **(John R.King)**

1. 6 large or 12 small Davidson Plums
   ½ cup water

Cut the fruit up and simmer flesh in water for 5 min. When cool press into a strainer and collect the juice in a saucepan.

2. 250g gravy beef or kangaroo

Thinly slice and marinate in the Plum juice for a couple of hours or overnight (covered).

3. 5 cups water
   1 cup Jasmine rice
   6 dried Lemon Myrtle leaves

Put these in a separate saucepan. Bring to the boil and simmer for 15 min. Drain and reserve rice water.

4. 1 tablespoon macadamia oil

Add the oil to a wok, heat and start stir-frying the drained meat.

5. In a separate saucepan, combine marinade and 2 cups rice water. Reduce down on high heat to 1 or 2 cups of liquid. Start slowly and watch, as it will foam over at first, so heat needs to be adjusted as liquid reduces.

6. 1 clove garlic
   1 cup coconut cream
   2 tablespoons raw sugar
   1 tablespoons potato flour mixed with 1 tablespoon water

When reduced, add garlic, coconut cream and sugar. Stir and simmer for a few minutes, then add the flour/water, stir and simmer a few minutes to thicken and set aside.

7. Carrots, celery, shallot, capsicum, egg-plant or your choice of vegetables.

Prepare and add to wok in order of hardness and cook to your liking. Add a cup of thickened sauce and heat through.

8. Arrange rice and meat with vegetables and sauce on plates. Serves 2-3.

Watch out for a new RIRDC Report on Native Vegetables. This will outline progress towards commercialising several of south Western Australia's native plants as new root vegetables. The three species identified for further development as new vegetable crops are:

Platysace deflexa (Apiaceae)
Ipomoea calobra (Convolvulaceae)
Haemodorum spicatum (Haemodoraceae)

WILD BANANAS

Have you ever wondered why bananas don't have seeds? Well, some do. Wild bananas have seeds, as do ornamentals and species grown only for their strong fibre and food prepared from their corms and shoots. Most bananas with edible fruit don't have seeds: just as well perhaps, as banana seeds, when they occur, are comparatively large, hard and numerous.

The poor banana hasn't had sex for years. It is genetically old, and has been at an evolutionary standstill since the end of the last ice age. All cultivated bananas are seedless sterile mutants, propagated by cuttings and offshoots, and each modern variety of cultivated edible banana has come down the years almost unchanged from a separate seedless, and therefore sterile, forest mutant. Because of this lack of genetic diversity, many scientists believe it is ripe for disease like no other crop on earth since the Irish potato famine.

Without seeds, developing new strains is expensive and time-consuming, and plant breeders have tended to ignore bananas, for without sexual reproduction, there is no chance of new varieties arising. The dark lines in the flesh of the modern banana are all that is left of the original seeds.

Enter the native bananas of North Queensland.

The first is *Musa banksii* (syn *Musa acuminata* subsp *banksii*), found from about Ingham north. The second is the rare *Musa jackeyi* (syn *Musa hillii*), known only from Bellenden Ker and Cooktown (Johnstone River). The third, *Musa fitzalanii*, appears to have been collected only once, from the Daintree River.

They are usually found along the edges of rainforests or watercourses, or in clearings, and are easily distinguished from feral cultivated bananas by the interior of the fruit being mostly composed of seeds. Sir Joseph Banks noted in his diary that they were so small and full of seed as to be scarcely edible.

Musa banksii grows up to 6 metres tall, with a chocolate brown, dark red or greenish stem. It has a more or less pendulous fruit bunch, and the male bud or bell is usually yellow-green, though maroon forms do exist. Flowers are cream. The fruit is 85-135mm long, thinner for its length than, for example, a commercial Cavendish, with a rounded rather than pointed end and often a pronounced hook bend near the stem end as the fruit grows vertically towards the light. It ripens yellow, and contains numerous hard, dark seeds 4-5mm in diameter. Sap is watery or dirty cream. Suckering is usually prolific, and the plants sometimes form broad clumps. The sparse white flesh is edible and sweet, but hard to disentangle from the seeds. The bell, stem and inner leaf "stems" are reportedly also edible. Propagation is by seed.

Musa jackeyi grows to 10 metres, with a black stem and leaves about 2 metres long forming a tuft on the apex of the stem. It has an erect fruit bunch and a green male bud. Flowers are yellow. The fruit is 40-65mm long, 3 to 5 cornered. The sap is unusual, being a red colour reminiscent of cooked beetroot. The erect bunch and red sap are characteristics of the Australimusa group of bananas to which it

belongs, compared with Eumusa which includes most cultivated and wild bananas, seeded or otherwise.

Little information is available about *Musa fitzalanii.* Indeed, the World Conservation Monitoring Centre classifies it as extinct. The notes accompanying the type specimen describe the stems as about 20 feet(6.5m) high, robust and very green, with leaves about 12 feet(4m) long standing at nearly right angles to the stem. The fruit bunch is drooping, and the triangular fruit ripens yellow. The flower is French white with purplish tips. It is possible that this plant may be the same as *Musa charlioi* (Simmonds 1956), but this name is also given as a synonym for *Musa banksii* in the World Checklist of Monocotyledons. (Both *Musa jackeyi* and *Musa charlioi* were named in 1874 after the explorer Kennedy's Aboriginal companions).

The Queensland Department of Primary Industries has a close interest in the native bananas, as they are known to harbour some pests and diseases of bananas which could be of consequence to the commercial banana industry. Their reaction to Black Sigatoka and Panama Disease is of particular significance, as Black Sigatoka has reached the Torres Strait, and Panama Disease is undergoing a resurgence. The lack of genetic diversity in cultivated bananas makes them overwhelmingly susceptible to such diseases.

The Australian native bananas may provide important germplasm for banana breeding programmes as scientists attempt to introduce new genetic traits, particularly resistance to potentially lethal diseases. Bananas may present one of the strongest cases for using GM technology, as, rather than narrowing the genetic base of the species, it would be broadening it, and the sterility of the fruit means there is virtually no risk of any new genes spreading into the wild or elsewhere.

As an example of the problems encountered in trying to improve the disease resistence of bananas, the experience of the Honduran Foundation of Agricultural Research is classic.

Rarely, a sterile banana will experience a genetic accident that allows an almost normal seed to develop, giving breeders a tiny window to work with. The Honduran researchers tried to exploit this possibility to create disease resistant varieties.

Every day for a year workers hand-pollinated 10 hectares of commercial bananas (approximately 30000 plants) with pollen from wild fertile Asian bananas. At harvest, some 400 tonnes of ripe fruit was peeled and sieved in the hope of finding any seeds. Of the 15 seeds recovered, only 4 or 5 germinated. Further backcrossing with wild bananas yielded a new seedless variety resistant to both Black Sigatoka and Panama Disease.

But - neither Western consumers nor peasant growers like the new hybrid! They say it doesn't taste like a banana, but is more like an apple. Cuba is the major grower, having had its plantations wiped out by Black Sigatoka, and being unable to afford fungicides to combat it. Its domestic consumers eat the hybrid or nothing.

Commercial banana companies are now turning away from breeding research to developing new fungicides instead, in spite of the well

documented adverse effects of such chemicals on many workers in the industry.

While a consortium of scientists has announced plans to sequence the (wild) banana genome within 5 years, in the hope of being able to pinpoint the genes that help the wild varieties resist Black Sigatoka, the big banana companies have so far refused to get involved. They are fearful of alienating their customers by getting involved in potentially very expensive GM research. With limited funding, the scientists say they will concentrate on finding ways to improve the varieties on which Africans depend for their survival, rather than the product on the supermarket shelves.

Nevertheless, without such research, many scientists believe banana production worldwide will not only drop dramatically, causing widespread starvation, but the banana as we know it may become extinct.

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CORKWOOD or CORKY-BARK MANGROVE: *Carallia brachiata*

Corkwood or *Carallia brachiata* is a large shrub or small tree that grows up to about 15 metres in height. It has a spreading canopy, making it a suitable shade tree for shool grounds. The added bonus is that it is fast growing. In Australia, these plants are found naturally from about the Tropic north, but they also extend to some of the adjacent islands. It is in the same family as many other mangroves (Rhizophoraceae), but lives on dry land rather than in tidal zones.

It is resistant to salt spray and saline soils and makes quite a useful plant for coastal regions. It has many attractive features, such as the corky bark and the spreading branches. The leaves, which are thick and elliptical in shape, are dark green and glossy and measure about 12cm long and 4cm wide. Small greenish flowers appear from October to March in the leaf axils and on the old wood. These are followed by small, globular, red fruit about 6mm across, which ripen between April and July. The fruit is edible, and attractive to birds and other wildlife.

The Cookwood is a host for the Day Flying Moth. This species of moth is one of the few that flies about during the day. The caterpillars of these moths are yellow, and rear up when they are approached.

Alison Turner (Reproduced from "Going Potty" October 1996)

MYSTERIES OF NARDOO

In the SGAP Qld Region BULLETIN of December 2007, Kerry Rathie shared some interesting information about Nardoo (*Marsilea* spp.) which came to light at a Fern Study Group meeting at which the leader, Dr Peter Bostock, spoke about aquatic ferns.

Most of the older generation of Australians know the story of how the explorers Burke and Wills starved to death on Nardoo. They saw the Aborigines grinding up the dry sporocarps (the fern equivalent of a flowering plant's fruit with seeds inside) to make a sort of flour, which was then baked into a type of cake and eaten without harm. The sporocarps contain high levels of thiaminase, a heat resistant enzyme which breaks down Vitamin A, and the resultant vitamin deficiency weakened the explorers. The Aborigines were unharmed, presumably because their diet contained many other components. (There is also a theory that the Aboriginal practice of wet-grinding the sporocarps, in contrast to the dry-grinding of the explorers, reduced the toxic principle).

Peter has been looking at both Australian and overseas *Marsilea* species, and now doubts whether the Australian species have been correctly classified. While they are growing in their 'normal' habitats of shallow water or wet mud, they are very long-lived, but do not spore. If under harsh conditions, the leaves and the whole plant can be very small, but under lush conditions they can be large and tall. *M.drummondii* leaves can be over 5cm in diameter. Juvenile nardoo can have just a pinnate leaf, with 2 pinnae rather than the '4 leaf clover' arrangement, caused by folding, of the adult leaves. Degrees of hairiness and other vegetative features seem to vary mainly with the local environment.

The sporocarps do allow accurate identification, but are not produced until the ferns are slowly and steadily drying out. Most identifications have been made on unreliable 'leaf'and 'stem' features. *Marsilea* and its family are nearly unique among true ferns in producing two types of spore which germinate to give male or female gametophytes. The megasporocarps tend to stay attached to the fern,and they contain megaspores which produce prothalli (usually largely enclosed by the megaspore wall) with female gametes, while the mobile and smaller microsporocarps contain spores which germinate to give mobile male gametes. Brief wetting causes no germination, but a little under 24 hours of continuous moisture, in some species, can cause germination of a spore that can otherwise lie dormant for 100 years, maybe more.

Rapid prothallus growth, gamete production, and rapid asexual growth of what laymen see as the fern, can lead to *Marsilea* having a minimum generation length of only two weeks. Or, in a reliably wet spot, average generation length could be decades, maybe centuries.

In his 'Flora of Australia' article on the Marsiliaceae (in Vol.48,pp.166-173), and in his earlier book with Clements, David Jones talks of scales as well as hairs on *Marsilea*, but Peter can see only hairs; some long, some short, some lax. The members agreed.

M.hirsuta is the commonest species round Brisbane.

ANFIL (Australian Native Food Industry Limited) reports that the FSANZ Novel Food Committee has assessed that Kakadu Plum and Sweet Quandong can be considered non-traditional since they both have a demonstrated history of consumption in Australia. This means that they won't need to be subjected to the complex assessment of 'novel food' status in order to gain export clearance. Lemon Aspen and Desert Limes have also recently been similarly categorised, partly due to information received in response to Jock Douglas's appearance on the ABC. (Ann McHugh and I both responded to this appeal- Ed)

The essential oil of the leaf of *Syzygium luehmannii* is said to contain limonene, myrcene and pinene. While the fruit is the usual part of the plant used, the leaves may also be used occasionally. Ground seeds are also used as a spice. (From a paper by M.& E.Hegarty)

Ernie Ryder has passed on comments from an on-line discussion on the reported toxicity of Hawaiian Macadamia nuts to dogs. Most respondents disbelieved the report, citing examples of dogs who ate the nuts with relish, and pigs with prodigious appetites for the delicacies. The final consensus seemed to be that it was most likely due to an allergy, and that much more verified testing would be necessary to establish any other finding.

Most *Macadamia ternifolia* nuts are bitter and considered toxic to humans, but one writer said he knew of one hybrid of it with *M.integrifolia* which is used semi-commercially. It has decorative sprays of red-pink flowers and a tasty kernal. However, if dogs ate *M.ternifolia* they could well get sick quickly.

Another factor could be the original extremely limited genetic base of Hawaiian nut plantations - from 4-5 original seedlings. The genetics may have concentrated the production of the canine affective principle; although fresh genetic material has been obtained from Queensland recently to expand the genetic base in order to improve nut quality and to guard against potentially catastrophic uniform disease susceptibility. Australian plantations have a much broader genetic base, being expanded from wild individuals as they are found (mainly around Gympie) to be suitable. *M.tetraphylla* has a rough shell and is also completely edible. Quite a bit is eaten by back-yarders - it was used as grafting stock at one stage. (I certainly remember eating the smaller, knobbly nuts as a child. Ed.)

Most *Macadamia* species worldwide are highly toxic.