

June
2011

General Meeting

8.00pm Wednesday
8th June

Community Centre,
Annandale Shopping
Centre

Committee Meeting

7.30pm Monday
4th July 2011

2 Hoya Court
Annandale

Dates to Remember

Future Outings

June 12th to Mt Zero
with Betsy Jackes.

July 17th and Sept 18th
to the Burra Range.

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Abelmoschus moschatus
subsp. *tuberosus*

The Native Gardener

Newsletter of the
Society for Growing Australian
Plants
Townsville Branch Inc.

PO Box 363, Aitkenvale, Qld. 4814.
sgaptownsville.org.au

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Committee			

Wednesday 11th May 8pm

Betsy Jackes

will give an introduction to the

Mt Zero/Taravale Reserve

prior to our outing on Sunday 11th June and

Russell Cumming

will show photographs of the area

plus

Keith's 'tech-spot' on 'Seed Formation and Germination'

Bald Rock Outing 22nd May 2011

Bald Rock track is located in Townsville Town Common and is easily accessed by dirt road from the entrance close by the Pallarenda Golf Course. It has been the location for several SGAP outings over the years, and even a short walk on the track will lead you from salt pans and mangroves at the base, through a vine thicket formed by the shadow of Bald Rock itself, and on to the Eucalypt woodland above.

So there is plenty of variation to be seen and on past visits we had managed to list 125 species. A knowledgeable and keen group of 9 walkers managed to identify another 35 species during the course of the morning and not without a few surprises. A tree, which occurs at the beginning of the track and which has evaded earlier attempts at identification was determined to be *Wrightia versicolor*. A little known species of monsoon forests and vine thickets, which Cooper describes as having yellow or orange flowers.

The loud trumpeting of Brolgas in the wetland below us encouraged us up the hill, to find *Micromelum minutum* in full, scented bloom. And a mature tree, with shoots from the base covered in long spines, gave us pause until it was identified as *Premna dallachyana*, which Russell has seen similarly spiteful on Mt Elliot. Grasses and herbs were of course in great profusion after the wet season, and I will mention *Mnesithea rottboellioides*, which attains 2 metres with a showy plume of a spike covered in black seeds.

Showing up at the very southern end of its range *Ichnocarpus frutescens* was also seen. A tall climber, which has the habit of becoming shrubby, it has small cream flowers followed by slender follicles.

Plants of Bald Rock

Scientific Name	Family	Common Name
<i>Abrus precatorius</i>	Fabaceae	Crab's Eye Vine, Giddee Giddee
<i>Acacia flavescens</i>	Mimosaceae	
<i>Acacia simsii</i>	Mimosaceae	
<i>Acacia spirorbis</i>	Mimosaceae	
<i>Aeschynomene indica</i> *	Fabaceae	Budda Pea
<i>Aidia racemosa</i>	Rubiaceae	Archer Cherry
<i>Alectryon connatus</i>	Sapindaceae	Alectryon
<i>Alectryon tomentosus</i>	Sapindaceae	Hairy Alectryon
<i>Alloteropsis cimicina</i>	Poaceae	
<i>Alphitonia excelsa</i>	Rhamnaceae	Red Ash
<i>Alyxia ruscifolia</i>	Apocynaceae	Moonya
<i>Amyema conspicua</i>	Loranthaceae	
<i>Ancistrachne uncinulata</i>	Poaceae	Hooky Grasses
<i>Anisomeles malabarica</i>	Lamiaceae	
<i>Antidesma parvifolium</i>	Phyllanthaceae	Currant Bush
<i>Aristida gracilipes</i>	Poaceae	
<i>Aristida utilis</i>	Poaceae	Wire grass
<i>Arthrargrostis deschampsoides</i>	Poaceae	
<i>Brachychiton australis</i>	Sterculaceae	Bottle Tree

Plants of Bald Rock (continued)

Scientific Name	Family	Common Name
<i>Cajanus reticulatus</i>	Fabaceae	
<i>Canarium australianum</i>	Bursaraceae	Melville Island White Beech
<i>Canavalia papuana</i>	Fabaceae	
<i>Capparis arborea</i>	Capparaceae	Caper
<i>Capparis canescens</i>	Capparaceae	Wild Orange
<u><i>Capparis sepiaria</i></u>	Capparaceae	Wild Orange, Bumble
<i>Carissa ovata</i>	Apocynaceae	Currant Bush
<i>Cayratia trifolia</i>	Vitaceae	Pepper Vine
<i>Cheilanthes nudiuscula</i>	Pteridaceae	
<i>Chloris lobata</i>	Poaceae	
<i>Chrysopogon fallax</i>	Poaceae	Golden Beard Grass
<i>Cissus opaca</i>	Vitaceae	Native Grape
<i>Cissus reniformis</i>	Vitaceae	Native Grape
<i>Claoxylon tenerifolium</i>	Euphorbiaceae	Queensland Brittlewood
<i>Clerodendrum floribundum</i>	Lamiaceae	
<i>Cochlospermum gillivraei</i>	Cochlospermaceae	Kapok
<i>Commelina diffusa</i>	Commelinaceae	
<i>Commelina ensifolia</i>	Commelinaceae	
<i>Corymbia intermedia</i>	Myrtaceae	Pink Bloodwood
<i>Corymbia tessellaris</i>	Myrtaceae	Moreton Bay ash
<i>Crotalaria calycina</i>	Fabaceae	Rattlepod
<i>Crotalaria montana</i>	Fabaceae	Rattlepod
<i>Crotalaria pallida</i>	Fabaceae	Streaked Rattlepod
<i>Cupaniopsis anacardioides</i>	Sapindaceae	Tuckeroo
<i>Cymbopogon bombycinus</i>	Poaceae	Native Lemon Grass, Silky Heads
<i>Cynanchum carnosum</i>	Apocynaceae	Mangrove Wax Flower Vine
<i>Cyonatis axillaris</i>	Commelinaceae	
<i>Cyperus iria</i>	Cyperaceae	
<i>Cyperus perangustus</i>	Cyperaceae	
<i>Dactyloctenium radulans</i>	Poaceae	Button Grass
<i>Deeringia amaranthoides</i>	Amaranthaceae	
<i>Dendrophoe glabrescens</i>	Loranthaceae	Mistletoe
<i>Desmodium filiforme</i>	Fabaceae	
<i>Digitaria minima</i>	Poaceae	
<i>Diplocyclos palmatus</i>	Cucurbitaceae	Striped Cucumber
<i>Dodonaea lanceolata</i>	Sapindaceae	
<i>Dodonaea viscosa ssp burmanniana</i>	Sapindaceae	Hop Bush
<i>Drypetes deplanchei</i>	Euphorbiaceae	Yellow Tulipwood
<i>Eclipta prostrata</i>	Asteraceae	
<i>Elaeodendron melanocarpum</i>	Celastraceae	Olive Plum
<i>Eleutheranthera ruderalis</i> *	Asteraceae	Ogiera
<i>Enneapogon lindleyanus</i>	Poaceae	Nine-awn Grass
<i>Eragrostis spartinooides</i>	Poaceae	
<i>Eucalyptus crebra</i>	Myrtaceae	Narrow-leafed Ironbark
<i>Eucalyptus platyphylla</i>	Myrtaceae	Poplar Gum
<i>Euroschinus falcatus</i>	Anacardiaceae	Chinaman's Cedar, Pink Poplar
<i>Fimbristylis dichotoma</i>	Cyperaceae	

Plants of Bald Rock (continued)

Scientific Name	Family	Common Name
<i>Fitzalania heteropetala</i>	Annonaceae	Orange Annona
<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>	Phyllanthaceae	White Currant
<i>Garuga floribunda</i>	Bursaraceae	Garuga
<i>Geijera salicifolia</i>	Rutaceae	Wilga
<i>Gossia bidwillii</i>	Myrtaceae	Python Tree, Refrigerator Tree
<i>Grewia asiatica</i>	Sparrmanniaceae	
<i>Grewia australis</i>	Sparrmanniaceae	Emu Berry
<i>Grewia retusifolia</i>	Sparrmanniaceae	Emu Bush
<i>Heteropogon contortus</i>	Poaceae	Black Spear Grass
<i>Heteropogon contortus</i>	Poaceae	Black Spear Grass
<i>Heteropogon triticeus</i>	Poaceae	
<i>Hibiscus tiliaceus</i>	Malvaceae	Cottonwood, Cotton Tree
<i>Hoya australis</i>	Apocynaceae	Wax Flower
<i>Hypoestes floribunda</i>	Acanthaceae	
<i>Hyptis suaveolens</i>	Lamiaceae	Hyptis
<i>Ichnocarpus frutescens</i>	Apocynaceae	
<i>Indigofera hirsuta</i>	Fabaceae	
<i>Indigofera pratensis</i>	Fabaceae	Forest Indigo
<u><i>Jacquemontia paniculata</i></u>	Convolvulaceae	
<i>Jagera pseudorhus</i>	Sapindaceae	Foam Bark
<i>Jasminum didymum</i> subsp. <i>racemosum</i>	Oleaceae	Coastal Jasmine
<i>Jasminum simplicifolium</i>	Oleaceae	
<i>Larsenaikia ochreatea</i>	Rubiaceae	Native Gardenia
<i>Leptochloa decipiens</i>	Poaceae	
<i>Litsea glutinosa</i>	Lauraceae	Bollywood
<i>Lomandra longifolia</i>	Laxmanniaceae	Narrow Leaved Mat Rush
<i>Lophostemon grandiflorus</i>	Myrtaceae	Northern Swamp Box
<i>Maclura cochinchinensis</i>	Moraceae	Cockspur Thorn
<i>Macroptilium lathyroides</i>	Fabaceae	Phasey Bean
<i>Mallotus nesophilus</i>	Euphorbiaceae	Yellow Ball Flower
<i>Mallotus phillipensis</i>	Euphorbiaceae	Red Kamala
<i>Maytenus disperma</i>	Celastraceae	Orange Boxwood
<i>Melaleuca nervosa</i>	Myrtaceae	Paperbark
<i>Melodorum leichhardtii</i>	Annonaceae	Zig-Zag Vine
<i>Memecylon pauciflorum</i>	Melastromataceae	
<i>Micromelum minutum</i>	Rutaceae	Lime Berry
<i>Millettia pinnata</i>	Fabaceae	Pongamia
<i>Mnesithea formosa</i>	Poaceae	
<i>Mnesithea rottboellioides</i>	Poaceae	
<i>Murraya ovatifoliolata</i>	Rutaceae	Mock Orange
<i>Myoporum acuminatum</i>	Myoporaceae	Boobialla, Water Bush
<i>Neptunia major</i>	Mimosaceae	
<i>Nymphaea gigantea</i>	Nymphaeaceae	Giant Waterlily
<i>Oplismenus burmannii</i>	Poaceae	
<i>Pandanus cookii</i>	Pandanaceae	Pandanua
<i>Paraserianthes toona</i>	Mimosaceae	Mackay Cedar, Acacia Cedar
<i>Parsonsia lanceolata</i>	Apocynaceae	Parsonsia
<i>Paspalidium distans</i>	Poaceae	

Plants of Bald Rock (continued)

Scientific Name	Family	Common Name
<i>Passiflora aurantia</i>	Passifloraceae	Native Passionfruit
<i>Passiflora foetida</i>	Passifloraceae	Stinking Passion Flower
<i>Peripleura scabra</i>	Asteraceae	Tall Fuzzweed
<i>Phyllanthus novae-hollandiae</i>	Phyllanthaceae	Phyllanthus
<i>Phyllanthus virgatus</i>	Phyllanthaceae	
<i>Picnospora lutescens</i>	Fabaceae	Cream flower
<i>Pimelea sericostachya</i>	Thymelaeaceae	
<i>Planchonella cotinifolia</i>	Sapotaceae	
<i>Planchonia careya</i>	Lecythidaceae	Cocky Apple
<i>Pleiogynium timorense</i>	Anacardiaceae	Burdekin Plum
<i>Polymeria calycina</i>	Convovulaceae	
<i>Polyscias elegans</i>	Araliaceae	Silver Basswood, Celerywood
<i>Premna dallachyana</i>	Lamiaceae	
<i>Pseudersanthemum variable</i>	Acanthaceae	Pastel flower
<i>Psydrax attenuata</i>	Rubiaceae	
<i>Pterocaulon fasciatum</i>	Asteraceae	
<i>Sarcostemma viminalis</i> subsp. <i>brunonianum</i>	Apocynaceae	Caustic Vine
<i>Sarga plumosum</i>	Poaceae	Plume Sorghum
<i>Scleria mackaviensis</i>	Cyperaceae	
<i>Scleria sphacelata</i>	Cyperaceae	
<u><i>Secamone elliptica</i></u>	Apocynaceae	Cork Vine, Milky Cork Vine
<i>Senna gaudichaudii</i>	Caesalpinaceae	
<i>Setaria australiensis</i>	Poaceae	Scrub Pigeon Grass
<i>Sida hackettiana</i>	Malvaceae	Spiked Sida
<i>Smilax australis</i>	Smilacaceae	
<i>Stephania japonica</i>	Menispermaceae	
<i>Sterculia quadrifida</i>	Sterculaceae	Peanut Tree
<i>Tabernaemontana orientalis</i>	Apocynaceae	Eastern Gondola Bush
<i>Tacca leontopetaloides</i>	Taccaceae	Polynesian Arrowroot
<i>Tephrosia brachydon</i>	Fabaceae	
<i>Tephrosia juncea</i>	Fabaceae	
<i>Tephrosia phillipes</i>	Fabaceae	
<i>Terminalia porphyrocarpa</i>	Combretaceae	
<i>Thecanthes cornucopiae</i>	Thymeliaceae	Northern Rice Flower
<i>Themeda triandra</i>	Poaceae	Kangaroo Grass
<i>Tinospora smilacina</i>	Menispermaceae	Arrow Head Vine
<i>Tridax procumbens</i> *	Asteraceae	Tridax Daisy
<i>Triodia stenostachya</i>	Poaceae	Spinifex
<i>Trophis scandens</i>	Moraceae	Burnie Vine
<i>Turraea pubescens</i>	Meliaceae	Turraea
<i>Urochloa pubigera</i>	Poaceae	Arm Grass
<i>Wrightia versicolor</i>	Apocynaceae	



Memecylon pauciflorum

MELASTOMATACEAE

Memecylon, Poor-Flower Tree

Memecylon from the Greek word *Memekylon* a name used by Dioscorides and Pliny for the edible fruit of *Arbutus andrachne* (strawberry tree) – refers to the fruit; *pauciflorum* from the Latin *paucus* few and *florum* flowered.

Particularly in dry conditions it would be easy to confuse this plant with *Eugenia reinwardtiana*, as they often grow in the same habitat. The lateral veins on *Memecylon* are hard to distinguish whilst those of *Eugenia* are not, and *Memecylon* does not exhibit oil dots.

In flower it is much easier to distinguish the two as *Eugenia* has solitary white flowers, whilst *Memecylon* has blue/purple (although white have been recorded), and they are arranged in umbels, (the pedicels all arising from the same point and are the same length.)

Memecylon fruits conspicuously, in green/brown and ultimately black berries whilst *Eugenia* produces green, and then bright red berries



Unlike the *Eugenia*, where the fruit is quickly taken by birds the green fruit of *Memecylon* often lasts a long time, and is a distinctive and attractive feature of the plant.

In form, *Memecylon* grows as a dense bush, often quite small in exposed sites, but when sheltered can attain a height of some 6metres, with a substantial trunk of 30cms diameter. It has an extensive range from WA across to NEQ and then down the coast to south-eastern Queensland. Growing between 0-400m elevation this plant can be found as an understory tree/bush in monsoon forest, open forest and littoral forest.

The genus, *Memecylon* has about 2-300 members throughout the Old World Tropics, from Africa, Asia to Melanesia, Australia and the Pacific Islands. There are 3 species in Australia; *M. hylandii* and *M. arnhemensis* being the other two, neither of which occur in the Townsville district.

Grow from fresh seed or cuttings.

Keith's Tech Spot - Plant Cell Division



- In this spot we are going to look at the flowering plants we are most familiar with. . These are Angiosperms – from the Greek....
- *angeion* – a vessel
- *sperma* – a seed
- meaning that the seed is enclosed in a vessel or fruit.



- Plants are composed of cells – in the same fashion as animals, and indeed including humans – but they have some remarkable abilities....
- Just think how a portion of a stem or leaf can grow roots when we want to multiply plants for our garden..... Or how some climbing plants will grow roots from the stem to attach to rocks etc.

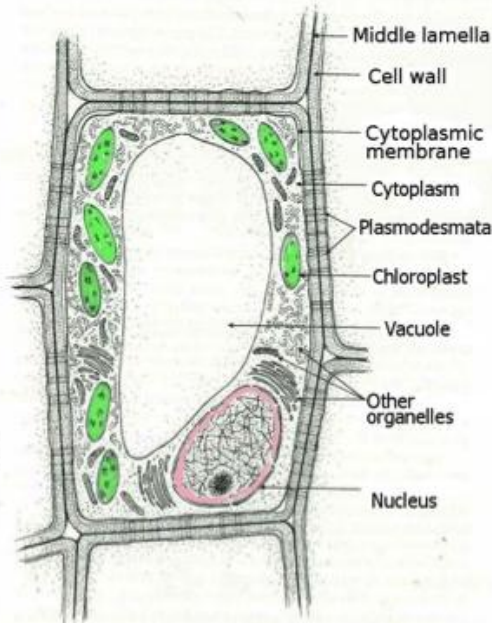
This is a typical plant cell – it is able to divide and duplicate itself, thereby increasing the size of the organism.

The outer wall of the cell is composed of cellulose and is generally rigid, giving strength and support to the plant.

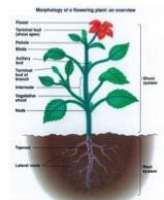
Adjacent cells are glued together with pectin (jam makers will be familiar with this), but cells can communicate with each other through small holes and threads. This communication and water movement etc. is variable according to the position and function of the cell.

The main items in the cell are the nucleus (like the heart, it controls most functions), chloroplasts which manufacture food by photosynthesis and organelles which carry out many other functions.

The vacuole or 'empty space' contains water and also serves as a waste dump.



- It must be remembered that the cell we saw on the previous slide is an 'typical', or 'normal', cell, if there is such a thing. Plant cells are developed with certain functions in mind depending on their location and purpose.
- A leaf cell will have as a major function the process of photosynthesis, and will therefore have a greater number of chloroplasts – a water conductive cell will have greater permeability of the connecting walls – and a structural stem cell will be of a more robust nature with rigid walls.
- Growth (and therefore cell division) will be concentrated of course in several key areas, and specialised growth cells will develop in these areas.....



- Root tips
- Branch tips
- Axillary branches
- Flowering /fruiting shoots.

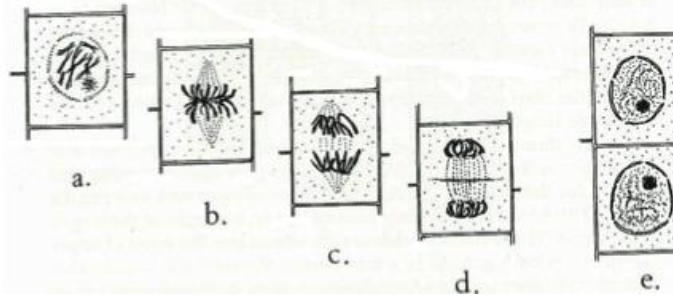
• Cell Division

New cells are formed by division of existing cells. This process is called MITOSIS; 2 new cells are formed which are identical to the original cell. The nucleus contains the DNA of the cell, and at the time of division this DNA (and associated chemicals) form into long structures called chromosomes.

The chromosomes replicate themselves but remain attached together by a 'blob' called the centromere. The replicated parts are called chromatids, and they in due course become the daughter chromosomes.

The following diagram shows the steps taken to complete division.

- Prophase
- Metaphase
- Anaphase
- Telophase
- Two daughter cells



Prophase

Chromosomes (red) become shorter, nucleoli (blue) soon disappear

Metaphase

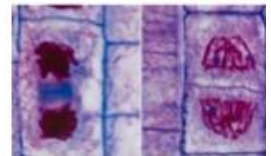
Chromosomes move to the centre of the cell and replicate into chromatids. The centromere at this stage joins the chromatids together but there are threads attached which will draw the chromatids toward the end of the cell when the centromere divides.

Anaphase

There are now two identical sets of daughter chromosomes at separate ends of the cell

Telophase

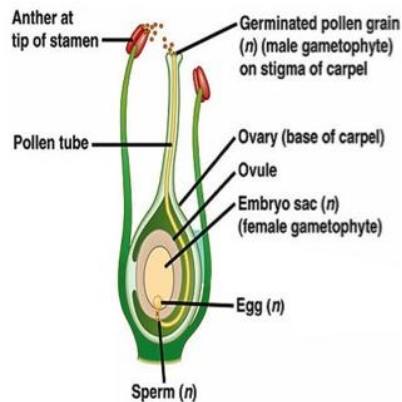
A nuclear membrane forms around each group of chromosomes and the nucleoli reappear. A new cell wall appears across the centre and we now have two cells identical in genetic makeup to the original.



So.....now you probably think you know all about cell division, but.....

Lets consider pollination where a sperm cell fuses with an egg cell, and we therefore end up with double the number of chromosomes in the zygote.

Imagine the problems if this was to carry on for several generations! Here plants and animals have a unique process for maintaining a constant chromosomal content.



Some things we should understand at this point –

1. Most organisms which reproduce sexually (but not all) – are what are known as diploid; that is, each normal cell carries two of each different chromosome for that species. Any departure from that results in changes –
2. eg. Human cells have 23 different chromosomes – therefore each cell carries 46 chromosomes – 2 of each. As a result of some malfunction in genetic makeup a Downs Syndrome child has one additional unattached chromosome; resulting in an untreatable genetic condition.
3. The adaptation which diploid organisms undertake to maintain chromosomal regularity is similar to Mitosis but involves an extra divisional step, and is known as MEIOSIS.
4. When egg and sperm cells are being created the two copies of each chromosome are separated by an additional division, thus creating cells with half the number of chromosomes. Subsequent fusion of egg and sperm then results in a cell with the normal number of chromosomes.
5. Note the term organism – both plants and animals are mostly diploid, and a similar principle of cell division applies – there are some differences however in the physical operation of the sexual fusion process.

Diagram of Meiosis

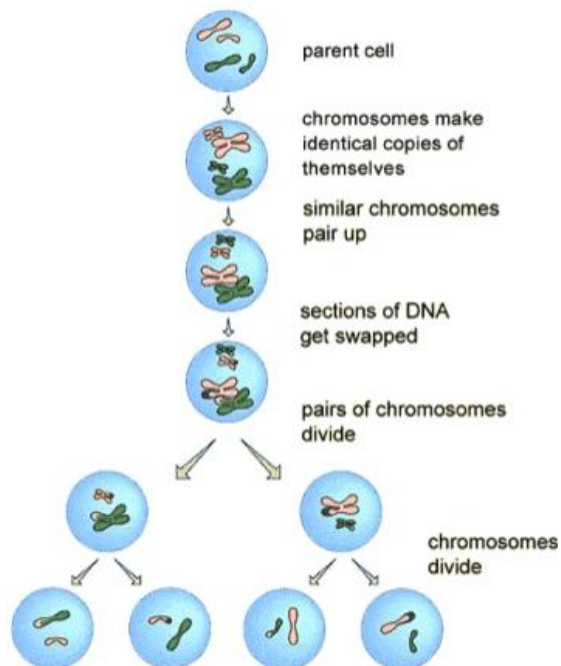
Tip :

This is a representation having only 4 chromosomes for ease of display.

I found it easier to understand an animal example eg: I have a Kelpie who is one of a litter of 5(ie. 5 eggs fused with 5 sperm) – 2 long haired black & tan, 2 short haired black & tan and one red. All these are legitimate Kelpie traits – but neither parent had the red colour. (Google – Images, meiosis)

Each parent cell by the end of the process produces four sperm (Pollen) cells or four egg cells – depending on location.

Each of these carries half the number of chromosomes, that is - they are haploid cells, and on fusion of a sperm cell with an egg cell the usual number of chromosomes will be contained in the zygote.



This is Rosie, who helped me to understand this complex situation

- **Back to plants –**
- Finally – one more thing to ponder on as we come to an understanding of this situation –
- Imagine the Burra Range in full flower – there would be maybe 50-80 species producing pollen simultaneously – these pollen grains blown by the wind or distributed by birds and bees could all fall on the stigma of a *Grevillea pteridifolia* –
- **BUT** – the only one which would pass the inbuilt filtration system (for want of a better word), would be a compatible grain from another *G. pteridifolia*, and it would grow and fuse with an egg cell in the ovary –
- **EXCEPT** – in an occasional exceptional happening – because of a genetic malfunction – a *Grevillea sessilis* sperm would manage to fuse with a *G. pteridifolia* egg and produce the odd rare BURRA RANGE HYBRID – which we find from time to time.



In flower for May

FABACEAE	<i>Hovea longipes</i>
MELESTOMATACEAE	<i>Memecylon pauciflorum</i>
MYRTACEAE	<i>Melaleuca tamariscina</i> <i>Sannantha papillosa</i>
PROTEACEAE	<i>Grevillea 'Ivory Whip'</i> <i>Grevillea prasina</i>
RUBIACEAE	<i>Gardenia psidioides</i>



*Sannantha
papillosa*

ATH Plant Identification Short Courses

The Australian Tropical Herbarium and the Wet Tropics Management Authority are presenting:

Australian Tropical Rainforest Plants – Plant Identification Short Courses.


Our courses are open to the public, and teach skills in rainforest plant I.D.

In 2011, we have responded to student feedback by extending the Introductory courses and allowing for more time in the field and teaching family identification skills.

A local course will be held in Paluma on 22-25th September

(James Cook University Paluma House)

Full details can be found in the accompanying PDF and online at http://www.ath.org.au/JCUPRD1_069169.html



Learn to identify tropical rainforest plants

Have an interest in FNQ's tropical rainforests?

Bewildered by the diversity of plant life hidden within, but wanting to know what's there?

The Australian Tropical Herbarium and the Wet Tropics Management Authority invite you to participate in our series of short courses: Australian Tropical Rainforest Plants – Plant Identification Workshops.

ATH
Australian Tropical Herbarium

WET TROPICS
Management Authority

Society for Growing Australian Plants, Townsville Branch Inc.
P.O. Box 363 Aitkenvale, Qld. 4814

Membership Application or Renewal Form

Membership Year is from 1st April to 31st March
(Initial half yearly membership is available for those joining around October)

Name: _____

Address: _____

Email address: _____

Fee: \$ _____

If claiming full time student fee please quote Student No.....

Additional household members may be registered for a nominal fee
of \$2.00 per person but they will not receive newsletters or magazines.

Society for Growing Australian Plants Townsville Branch Inc ABN 32 302 397 597
Membership Fees:

New Ordinary Member	\$45.00
New Student Member	\$35.00
Renewal Ordinary	\$40.00
Renewal Student	\$30.00
New Member (Half Year from Oct. 2010)	\$25.00
Additional Household Member	\$ 2.00
Queensland Bulletin subscription only	\$30.00

If paying electronically please quote 'Membership and your name'
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The Society for Growing Australian Plants promotes
the conservation of Australian native flora
by encouraging its introduction into gardens.