

SOCIETY FOR GROWING AUSTRALIAN PLANTS (QLD REGION INC.)

OCT. 1990. NO. 106

Our meetings are held in the first year centre, Trinity Bay High School, Hoare Street, Manunda. Committee/General Meeting begins at 7.00pm. Guest Speaker 8.00pm. Supper follows and visitors are most welcome.

FOR A TRIAL PERIOD, the next GENERAL MEETING will be held on the 6th November, commencing at 7.45 pm. Guest Speaker at 8.15 pm.

A COMMITTEE MEETING is planned for the 27th November, 5.30 pm at the Botanic Gardens.

CHRISTMAS BREAK-UP.

Plans have not yet been finalised, but December's meeting will be a social evening with a plant trivia quiz, monster plant swap (it will only be monstrous if YOU bring a plant or several), food and a dozen or so of your best slides.

GUEST SPEAKER.

Leslie Felderhof, the interpretive officer with the National Parks, will address our next meeting. Leslie is a botanist and will discuss the defense mechanisms of plants, their interrelationships with insects and their co-evolution. Sounds like an informative and interesting night.

CAFNEC

Ron Ruffley is our representative at CAFNEC and not Graham Pike as previously reported.

COMMITTEE FOR 1990.

CHAIRMAN.....Dave Warmington (502482)
 HON. SECRETARY.....Elaine Pike (51422) BH
 TREASURER.....Peter Robbins (53502) BH
 NEWSLETTER.....Helen Moody (554982)
 LIB. & SALES.....Frances Boyd (552550)
 EXCURSIONS.....Bob Jago (552266)
 PUB. OFFICER.....Theo Utzinger (545266)
 DISPLAYS CO-ORD.....Dave Warmington (51422) BH
 TUCKEROLOGIST.....Graham Pike (51422) BH

EDITOR'S SPOT.

Did you notice the new time for our meeting on the previous page? This is for a trial period so please give the committee some feedback during this time.

Graham Bennett has ordered our new T-shirts in a variety of sizes including children's so hopefully they will be here by the next meeting.

As I was browsing through the Tablelands Branch Newsletter for September, an article by Peter Radke caught my attention. Two interesting points that arose were:
 (1) the lack of volunteers for the Expo resulting in Yurugu Nursery doing most of the work - sounds like a problem that is close to home, (2) Cairns hotels recently had a native floral arrangement competition with Ann Radke as judge - did anyone know about the competition and get a chance to view the prize winners? If so, I would appreciate some info on species used and type of arrangement for our next newsletter.

Val Robbins asked a question about the colour of the flowers of the Black Bean - *Castanospermum australe* - are they orange, red, yellow, combinations of these, and do the flowers change colour with age? I remember reading in Banfield's book about Dunk Island, "Confessions of a Beachcomber" and his reference to

-LANSB, MUOZ, JR, TUOLOC, MUICT, ml J

the colours of these flowers which included all of the above as well as GREEN! I have not read or heard of them being described as green anywhere else but it was an interesting point and would be an exciting find.

Did you celebrate Arbor Day this year? White Rock State School chose 12th October for their day and I volunteered to help the students plant their trees, also giving some cultural notes and backgrounds to the plants. Each class planted two trees (12 in total) either around the oval or in the small stand of remnant native vegetation. The students really enjoyed themselves with more helpers than jobs available. Many thanks to Rob Hinxman for his help with the aboriginal background.

Cominos House had a presiding and fund raiser on 20th October. The afternoon also included guided tours of the house, the Potters Club, Art Society and Camera Club had displays and fundraisers. So I hope the afternoon was a success.

PLANT SWAP.

A few were on the table, we need many more for next month. Perhaps those people who bring in plants could note their name in a corner of the flowering plants page in the attendance book. This would make it much easier for me to get their names for the newsletter.

WHAT'S IN FLOWER?

Darlinga darlingiana, Murraya paniculata, Barringtonia calyptrata, Leptospermums eg: flavescens, Cardwell, Pacific Beauty, Callistemons eg: Viminalis, Wildfire, Wilderness White, Castanospermum australe, Acacia montfordia, Melastoma polyanthum, Bombax ceiba, Brachychiton acerifolium, Proiphys amboinensis, Melaleuca dealbata, Hoya macgillivrayi, nicholsoniae, australis, Dehdrobium beckleri, teritifolium, discolour, semifuscum, canaliculatum.

HELEN MOODY

POLLINATION

This article is a follow up to the structure of flowers which appeared in the August newsletter.

Since ancient times it has been known that pollination was necessary for fruit and seed production. In Assyria, kings would perform a ceremonial pollination of date palm flowers, however it wasn't until the late 1600's when Rudolph Camerarius did some research that it was realised that plants have male and female organs.

By definition, pollination is the dispersal of pollen and the reception by a stigma on a gynoecium of a pollen grain, either from the same flower (self-pollination) or from a different plant (cross-pollination).

As explained previously the male part of the flower - Androecium - consists of anthers and filaments, collectively called stamens. Within each anther there are commonly four pollen sacs (sporangia) each with an outer and inner layer of tissue. However most of the sac is taken up with cells called pollen mother cells which are diploid; i.e. two sets of chromosomes. Before any signs of petals are present the pollen mother cell undergoes meiosis and after two divisions and one replication four daughter cells are formed each of which are haploid ($\frac{1}{2}$ the normal no. of chromosomes). These cells are known collectively as a tetrad. Each cell in the tetrad is a pollen grain and is the carrier of genetic information from the male parent.

Usually pollen grains live only for days or several weeks at the most, however those of the date palm can live for a year. Each species has its own characteristic grain, usually round or oblong with an intricate surface structure and 15 - 200 microns thick.

Within each grain meiosis or cell division occurs resulting in a single cell with two haploid nuclei present

The bigger of these nuclei is the vegetative nucleus and the smaller is the generative nucleus.

At this stage pollen is released and available for pollination. After the grain has landed on a suitable stigma it germinates by the grain wall breaking open and the contents becoming a pollen tube which goes down through the style. The growth is under the guidance of the vegetative or tube nucleus. A further division of the generative nucleus occurs resulting in 2 gamete nuclei, one of which eventually unites with the egg nucleus and the other with the polar nuclei to form the endosperm or food storage part of the seed. The vegetative nucleus breaks down. A pollen tube with three haploid nuclei is the stage of maximum development of the male gametes.

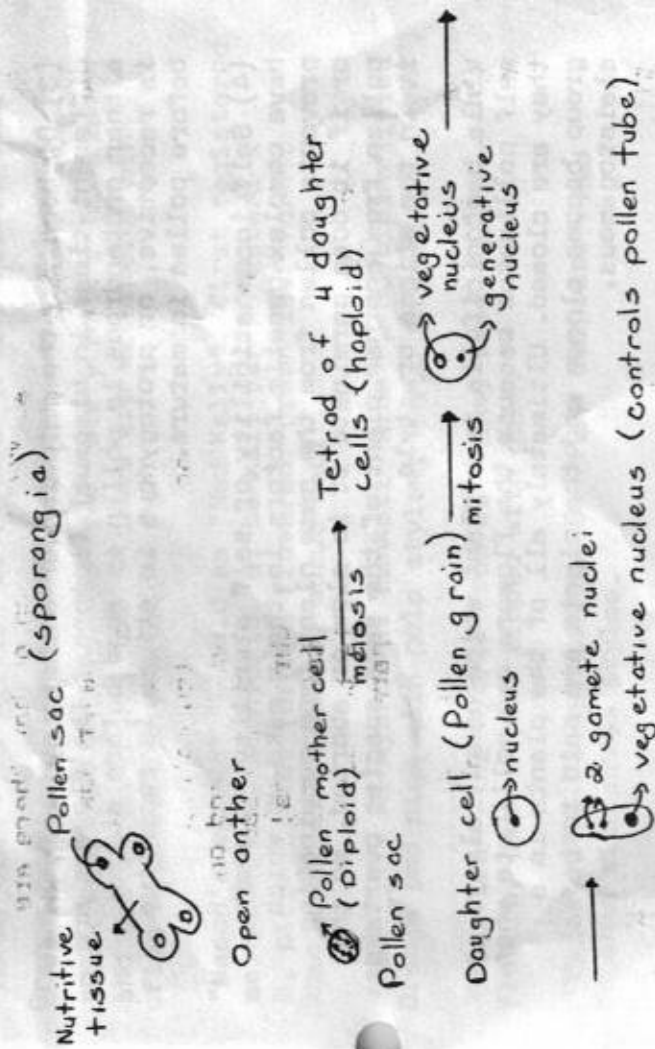


DIAGRAM SHOWING POLLEN DEVELOPMENT

In cross-pollinated plants, those that are pollinated by birds, insects and other animals usually have an attractant eg; perfume, nectar and/or colour while those that are wind pollinated usually have small, odourless flowers but produce large amounts of pollen.

To promote cross-pollination or outbreeding (which results in a large gene pool when compared with inbreeding) plants have evolved several mechanisms:-

(1) Dioecy - male and female reproductive parts are on separate plants. Self pollination is eliminated but an isolated plant has no future.

(2) Monoecy - separate male and female flowers on the same plant. Self pollination is not eliminated but the chances of cross pollination from another plant are increased.

(3) Dichogamy - the maturing of anthers and stigmas at different times in bisexual flowers. The flowers are either protandrous ie pollen is shed before stigma is receptive, or protogynous ie stigma is receptive before pollen is mature.

(4) Self incompatibility or self sterility. Flowers have complex genetic factors in their make-up which prevents pollen from the same plant from germinating or if it does germinate it is slow or aborted, so that pollen from another plant of the same species overtakes it in the stigma or style.

Viola bentoniciifolia is a plant which nearly always self pollinates because the flowers can pollinate when they are closed. Ultimately all of the plants in a group become clones and the plants are said to be cleistogamous.

SOME GREVILLEA CULTIVARS AND THEIR PARENTAGE

"Robyn Gordon" - FI hybrid *Grevillea bipinatifida* x *G. banksii* forestieri. The first parent hails from W.A. Shrub with dark pink and red flowers

"Sandra Gordon" - FI hybrid *G. pteridiifolia* x *G. sessilis* Small tree with yellow flowers

"Misty Pink" - FI hybrid *G. banksii* x *G. sessilis* Small tree, flowers pink with cream styles.

"Pink Surprise" - FI hybrid *G. "Mundubbera"* x *G. banksii* Similar to above, flowers larger

"Honeycomb" - *G. "Coochin Hills"* selection. Creamy yellow flowers

"Honey Gem" - FI hybrid *G. banksii* x *G. pteridiifolia* Orange brushies, fern like foliage.

"Pink Parfait" - F2 hybrid from "Misty Pink". Trialled and tested in Townsville. Flowers are watermelon pink often with double styles.

"Mason's Hybrid" - sold as "Ned Kelly", first registered as "Kentlyn". FI hybrid *G. banksii* var *forestieri* x *G. bipinatifida* (orange flowered, green leaf form). Orange and red flowers, shrub habit.

"Superb" - FI hybrid *G. banksii* "Alba" x *G. bipinatifida* Orange and pink with gold styles, shrub in habit.

"Starfire" - F2 hybrid from *G. "Honey Gem"*. Dark red flowers, pink styles tipped with gold.

"Majestic" - F2 hybrid from *G. "Pink Surprise"*. Red brushies with cream styles.

"Starflame" - F2 hybrid from *G. "Honey Gem"*. Dark red and pink brushies.