



ASSOCIATION OF SOCIETIES FOR  
GROWING AUSTRALIAN PLANTS

## RAINFOREST STUDY GROUP

GROUP LEADER

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"Although occupying only 5% of the land surface, rainforests contain at least one half of the earth's terrestrial plant and animal species" (Grainger 1980)

### GROUP LEADER'S REPORT

Well, this is the fourth and final newsletter for the year. I trust that everyone has found something of interest. Thanks for the contributions and words of encouragement that many of you have sent. Now the bad news, subscriptions for 1991 are almost due! Most members have paid on a calendar year basis, with just a few covering the July-June period as SGAP now recommends. However, if we could run on an "as is" basis for the coming year (Jan.-Dec.) most members need to renew, and it will have to be \$5 I'm afraid. Of course additional donations will be most welcome in helping us to gain momentum and improve our activities. When forwarding payment, if you would care to request that we describe a particular aspect, subject or area in which you are interested, or conversely, if you are willing to do something where you have particular knowledge or expertise please let me know.

I would like to thank the following members for extra financial assistance during 1990.

D. Thomas, J. Wilton, M. Cullen, J. Price, B. Hacobian, N. Marriott, T. Deane, S. Jack, G. Rice, A. Palmer, E. Weatherhead, M. Kearns, P. Olde, P. Shearston, D. Bray, L. Bird, P. Thompson, J. Ward, M. Zillman, R. Alley, G. Drury, K. Jones, N. McCarthy, P. Dadswell, R. Burgess, P. Brauns, G. Caddy, H. Franz, J. Sked, J. Beskin and many SGAP Groups and Regions.

Finally, my thanks to Beryl for her sterling work on bearing with me and the great effort she puts into preparing each newsletter on the antique typewriter.

### NEW MEMBERS

A warm welcome to the following who have recently joined the group, or were lost for a while.

Joe Beskin P.O. Box 228 Hornsby 2077  
Paul Brady 14 Wintergreen Pl. West Pennant Hills 2125  
Peter Brauns MS 464 Helidon Q. 4344  
Colin Broadfoot PO Box 154 Bellingen 2454  
Rex Burgess 58A Livingstone Av Pymble 2073  
Gwen Caddy 8 Quest Ave Yowie Bay 2228  
August Fricke 37 Bluebell St Alexandra Hills 4161  
Bob Horne Lot 381 Green St Ulladulla 2539  
Bill Jones 105 Wallawong Cr West Pymble 2073  
Helen Joyce 6 Lansdowne St Eastwood 2122  
Paddy Lightfoot 64 Ridgeway Rd New Lambton Heights 2305  
Graham Nosworthy 609 Grandview Rd. Pullenvale 4069  
Esther Taylor 74 Francis St Raymond Hills 4305  
Ron Twaddle 413 Oxley Rd Sherwood Q. 4075  
SGAP Maroonah PO Box 33 Ringwood Vic 3134  
SGAP Nowra PO Box 618 Nowra 2541  
SGAP Tasmania GPO Box 1353 Hobart 7001

REMINDER! NEXT SYDNEY MEETING SUNDAY 14TH OCTOBER.

Meet at Trevor and Carol Deane's 18 Coolabah Cres. Forestville at 11 a.m. to look at their garden. Bring a quick lunch as we will also go to Katandra Bushland Reserve with its flowering sandstone plants and gully rainforest. (Katandra is open to the public only for a limited season).

### SGAP NSW ANNUAL FLOWER SHOW.

Being held at the Royal Botanic Gardens from 17th to 23rd September. Anyone able to help out in setting up or assisting with the displays should contact Betty Rymer (654 1831) who will be most grateful.

### THE PROPOSED RAINFOREST RAMBLE IN 1991.

Eight members have so far expressed interest in joining in for at least some part of the trip. Harry Franz of Goomeri has kindly offered to organise visits to local dry rainforest in the Murgon Forestry District and has suggested a number of suitable camping areas.

Ross Macleay is happy to introduce the group to areas around Bellingen and Coffs Harbour and of course to demonstrate their work on Bellingen Island.

I've managed to check out a few spots around Buladelah - Wauchope that should be good. The Border Ranges are a "must", and we will seek some interesting locations from our members around Lismore in due course. Recipes and hints on minimising leech attacks will be greatly welcomed!

### AN EMBRYO REFERENCE LIBRARY!

Members Jan Sked/Pine Rivers SGAP have generously donated copies of four publications to our Group. All are compiled by Jan, are very informative and will be most helpful to me in preparing future newsletters and assist in supplying various information requested on occasions. They may be borrowed by members, but high postage charges will limit this opportunity to local members. Those interested in purchase should contact Jan at PO Box 41 Lawnton Q. 4501 or phone 07 2853322. Would make ideal gifts.

"Bush Medicine" 8 pages of about 60 species with their uses. \$1 plus 70c postage.  
"Flora of the Pine Rivers Valley". Listing 700 species found, together with a concise description of the district's features. \$4 plus \$1 postage.  
"Go Native - Wild Food Cookbook". 30 mouth watering pages. \$6 plus \$2 postage.  
"Planting a Native Garden". 142 pages describing 580 species. \$15 plus about \$7 postage (varies on distance).

(The donation is much appreciated, Jan, and I trust that you will permit me to publish a "Recipe of the Month" in future newsletters).

SETTING UP A SLIDE LIBRARY.

I recently joined the Eucalypt Study Group and found that one of its benefits is the availability of a series of half hour audio visual sets of about 40 slides and accompanying tape for loan to members. We should do the same. I've been asked to speak again on rainforest, and it would be good to sit back during an automatic talk and only have to answer questions afterwards! We could all use this project to publicise both our group, and the importance of rainforest with increased confidence.

Can I appeal to members who have good slides of any aspect of rainforest - flowers, fruits, foliage of a plant, or of a specific tree, broad vista, ferns, mosses, birds and animals etc. to donate a copy, together with a short written description covering say 20 or 30 seconds? I have notes on a general talk I recently gave, if anybody would like a copy I could tidy them up a bit and send you a summary. (I cannot vouch for the accuracy of all information though, but feel free to correct any errors).

MEMBERS' CORRESPONDENCE.

New member, Peter Brauns, manages the plant nursery at Gatton College, growing a range of plants on a contract basis. He has a 10 acre property near Toowoomba where he is building up a collection of rainforest species.

Another new member is Esther Taylor who has moved to a large block in Ipswich with established rainforest trees, and will further extend on this over time. She is somewhat limited by not being a car driver but would like to become involved in the Group's activities.

SGAP N.S.W. have forwarded a cheque for \$50 as donation to us. Thank you N.S.W., it will be put to good use in furthering both the Group and the Society's aims and interests.

Norm McCarthy sent a complete list of plants he is cultivating on his property for inclusion in a later newsletter. There are over 150, and his success and enthusiasm has also got Toowoomba SGAP Group hooked on rainforest species.

From Darnen and David Mansfield (Belltrees Nurseries), the first issue of their rainforest newsletter encourages people to consider species other than those from heath and woodland popularly used in cultivation. Their newsletter briefly describes four N.E. Old species and also covers items of general interest. Remember their Dural property has an arboretum and they are only too pleased for Study Group members and other interested persons to inspect it.

SGAP Qld. region has moved to increase its subscription to each active Study Group to \$10 p.a. This is a most helpful gesture, and certainly appreciated.

Sydney's Tony Morris says that the trees and shrubs he has planted are now big enough to fill in with smaller plants and ground covers that he can propagate from seed, cuttings, or division. He would appreciate any suggestions and propagating material that is available.

PLANT OF THE MONTH - EMMENOSPERMA ALPHITONIOIDES - A TREE FOR ALL SEASONS.

It is amazingly adaptable. Of medium size for rainforest gardens and then again suitable for ornamental status as a single tree. Also of pleasing appearance covered with bright green entire leaves, it is a pleasant sight for any garden. Commonly known as the "yellow ash", "bonewood", or more likely referred to as the "yellow almond". The last name refers to the copious orange-yellow fruit which so abundantly follows the profuse creamy yellow flowers.

Two good specimens of this tree are now five years old from seedlings and are flowering and fruiting most attractively for their very first time. The height of both trees is now five metres X two and a half metres wide. The habit is an interesting pyramidal shape and appears quite conical at the growing apex. Flowering is normally October-November and fruit ripens in February-March. In a domestic or ornamental situation this tree could reach twelve metres but appreciably more in natural or simulated rainforest conditions.

- Trunk - cylindrical, completely upright and slightly spurred at base.
- Outer bark - silvery grey and marked by longitudinal fissures but overall of smooth appearance.
- Branchlets - moderately thick green and glossy changing to dark brown.
- Leaves - opposite simple, not toothed, elliptical 2-7 cm long narrowing at tip to blunt point, upper surface dark glossy green, under surface paler. Leaf stalks 4-10 mm long and smooth.
- Venation - midrib sunken above and raised below. Lateral and net veins easily seen on both surfaces.
- Flowers - creamy yellow in cymes of panicles at the ends of branches. Individual flowers are 5 mm diameter. Petals 5 and hoodshaped. Flowering period August to November.
- Fruit - drupe like, orange yellow, globular 4-9 mm diameter, 2 celled, one seed per cell. Fruit is round but flattened. Fruit is ripe from February, March onward.
- Habitat - in sub-tropical and warm temperate rainforest from coast to mountains.
- Distribution - occasional trees only from Illawarra N.S.W. to Cape York, North Queensland.

Easily raised from seed this medium sized tree is highly recommended for all gardens. Its obvious three fold attraction of dense foliage, its flowers and fruits make it a must for birds and the added beautification of your garden.

An outstanding interesting tree of great attraction and of moderately fast growth. It is drought tolerant and has no apparent pests. Extremely adaptable to coast, slopes and higher areas. I am sure it would persist and grow to advantage in drier areas if given reasonable TIC and sufficient water to become established. Belonging to the family Rhamnaceae, it is closely related to *Alphitonia excelsa* and *A. petriei*, which it resembles. Occasionally it could reach 30 metres in natural rainforest.

References - Vol. 7 AP 146. Vol. 4 AP 175. N.S.W. Rainforest Trees - Part 10 - A.G. Floyd.

(Norm McCarthy, Toowoomba) Congratulations Norm, you won the prize of the Lightning Ridge opal chip for this contribution.

SEED VIABILITY - RESEARCH AND COLLATION OF INFORMATION.

Could members advise of their experiences on the viability of seed of rainforest species. Have you collected seed, but for some particular reason delayed sowing? What were the results? Have you found a method of storing seed for a time and maintaining some viability? Please send me anything at all - successes, failures, theories to try, time kept and % germinated etc. We really must get a seed exchange going, so will need to maintain stocks of whatever species we can store. I'm trying a few in sealed jars in the fridge for 6 months, others may like to do something on these lines for research and advise me of your results. On this matter could anyone send me seed of *Nauclea orientalis*? I'd like yet another try at getting the species going here in Sydney - my 2 previous attempts resulted in all seedlings dying off during winters.

SOME MOLLUSCS OF THE RAINFOREST - GASTROPODS.

The most conspicuous are the large snails of the family Hadridae which the introduced garden snail resembles. Its largest species is the two part snail, Hadra bipartita, found from Cape York to Cooktown, with a shell as large as 7.5 cm diameter, light coloured above, dark brown below. Others in this family range between 4 to 5 cm and have contrasting bands encircling the whorls. All are ground dwellers.

Our largest snail is the giant panda, Hedleyella falconeri, which together with the related H. maconelli can grow up to 10 cm long and are amongst the largest land snails in the world. Range is from southern Qld to the Hunter River in NSW. H. larreyi shelters under logs and is limited to northern NSW. Shell colours are attractive patterns of maroon or brown markings. The three species are uncommon, shy, and seldom sighted. Food preference is thought to be rotting wood. Other members of this family (Acavidae) are in Madagascar, Ceylon and Chile and could represent an ancient Gondwanaland distribution.

Family Megaspiridae includes the genus Coelocion with their narrow cylindrical shells. Very little is known of their habits and range but they appear to have relatives in Chile.

The genus Austrochloritis has a number of species located from north Qld to southern NSW, generally sheltering under logs feeding on fungi or rotting timber. Colours range through different shades of brown, rather small, average size being under 1 cm, but a few approach 2 cm. The shells of some species have inbuilt bristles which possibly gather debris to act as camouflage.

Around 160 species of "punctoids" or "endodontoids" make up the largest group but they are extremely small with shell diameters averaging only 2 mm, so they are rarely noticed. Shells are typically flattened spirals, and it is assumed that they feed on fungi, although some also occur outside of rainforest. Most are found at ground level in litter or rotting wood, or at the bases of trees, but others shelter in debris collected at higher levels, such as in birds nest ferns. Some species gather in large colonies and are very important in the breakdown and recycling of matter.

Strangestas, family Rhytididae, are carnivores feeding on other snails, earthworms and other inactive prey. Being slow moving, they are unable to actively hunt and eat whatever they come across, even others of their own species. Their shells are also flattened spirals. Urban dwellers will be aware of a typical species, reddish brown, generally found under material in sheltered damp situations. Eggs are comparatively large, about 3 mm diameter with a hard white shell.

The Helicarion are classified as snails but most are actually semi slugs, as they are in the process of evolving to a shell-less form. The remnant "shell" is often of fingernail shape and size, set atop a raised section about half way along the body. Often found on plants above ground level in moist situations, they use various imitations and positions, to blend in with the background, avoiding detection by predators, as due to their reduced shells they have no inbuilt protection.

Cystopelta is described as being a true slug, but its large "hump" indicates that it is only a little further down the evolutionary road from the semi slugs, and has not yet reached the familiar slug shape. Various species are recorded from south Qld to Tasmania.

Finally, the slug Tribonophorus graeffi is easily identified from its introduced relatives by having only one set of head stalks, the long upper eye bearing pair. It can be 15 cm long when extended but in repose is a circular humped shape of about 5 cm diameter. Colour varies from hues of brownish green, russet or grey green, with a reddish-pink band vividly outlining the body and the triangular pulmonary dorsal area. It rarely occurs in settled areas. Handsome rose red forms have been described from Mt. Bellenden-Ker Qld, near Gosford NSW and Mt. Kapatur in north west NSW. This slug is more often seen in eucalypt forests.

Comparatively little research and collection of molluscs has been carried out. There are, therefore, large gaps in our knowledge of species, habits, habitats, life span etc. They are an important part of their ecosystems, as a food source for predators, a major influence in the breakdown of organic matter, and in the various symbiotic relationships that help to maintain diverse and stable rainforest environments.

Further reading - Rainforests - Reprint from Parks & Wildlife Vol 2 No. 1 NSW NP & WS of May 1977.

FREELY SUCKERING SPECIES.

Some comments from Jan Sked on species additional to those listed in Newsletter 7.

Backhousia citriodora - this one is more self-layering than suckering. My plant has produced a veritable grove all around the original specimen.

Clerodendrum floribundum - suckers prolifically and often at quite some distance from the parent plant. My neighbours complain of suckers in various parts of their yard and even under their house! It will have to be removed.

Commersonia bartramia - not as bad as C. fraseri.

Ehretia acuminata - one or two suckers per year. I dig them up and pot them. They do very well.

Macaranga tanarius - seems to sucker mainly from damaged roots or if the original plant is cut down.

Mallotus claoxyloides - produces quite a few suckers, so far only close to the parent plant. These suckers are the only way I have been able to propagate it.

Rhodomirtus psidioides - produces quite a lot of suckers.

QUICK FLOWERING SPECIES.

Many of those listed in Newsletter 8 have been grown further south (Brisbane) where they were found to be much slower to flower than in north Qld. The question arises as to whether they were grown in the open or in a rainforest situation which would have a large bearing on the result. Over to you Maria!

TOPICS FOR FUTURE ISSUES.

I have some details on - NSW Big Scrub Remnants, Medicinal Plants, Plants in Containers, Littoral Rainforest, Coppicing species, Fruit Bats, Illawarra Rare Plants. Further contributions on these would be appreciated to prepare lengthier items. Anything of a specific example or general nature would be helpful. Also, Qld. locations where Red Cedar can be found, and a detailed summary of "Places to see Rainforest in Qld." would complement recently published NSW listings. Additional specific locations in Victoria would be of general interest and assist visitors in their future travels.

IS YOUR GARDEN A WEED NURSERY?

A copy of this handout is attached. You may know the ideal person to present it to as a hint!



UPDATE · BELLINGEN ISLAND, NSW NORTH COAST

Bellingen Island is a remnant of lowland subtropical rainforest in the Bellingen River, at the town of Bellingen. The vegetation may be broadly divided into two communities: areas of intact canopy characterised by species like Strangler Figs (*Ficus watkinsiana*, *F. macrophylla*, *F. obliqua*) White Booyong (*Argyrodendron trifoliatum*), Maiden's Blush (*Sloanea australis*), Stinging Tree (*Dendrocnide excelsa*), etc.; and larger gap areas characterised by herbacious natives like Cunjevoi (*Alocasia macrorrhizos*) Scrub Nettle (*Urtica incisa*) and Pollia (*Pollia crispata*). Both areas are to varying degrees interpenetrated by exotic weeds, particularly Madiera Vine (*Anredera cordifolia*) and Wandering Jew (*Tradescantia albiflora*). A group of volunteers has been undertaking a restoration programme on the Island for seven years. In similar North Coast remnants the herbicide glyphosate is extensively used, but at Bellingen we have avoided this. A book could be written on the reasons and ramifications of this decision but I'll simply describe our methods.

The two communities correspond to two different approaches and also to the different interests of volunteers. One of the things that has struck me about rainforest regenerators is that they all have different ideas about what should be done, and what is being produced. Volunteer projects not only have to teach skills to volunteers, they also have to provide for individual input and experimentation. This leads to both innovation - as well as wasted and failed effort. In canopy areas we work as follows: First cut all the *Anredera* and pull down as much vine as possible, then bag and remove the numerous aerial tubers. This can be done and maintained over large areas, giving the native canopy a chance to reconsolidate. The soil beneath these areas will usually be heavily sown with tubers - most of them dormant under a carpet of *Tradescantia* which is often mixed with *Pollia*. As time and maintenance resources allow, we roll and or rake this thick *Trad.* ground cover, taking care to get every bit of *Trad.* while not damaging the few natives that may have struggled through it. Native seedlings at this stage are few and far between. The dormant tubers now come alive. Native seedlings also begin to appear. Factors affecting native seedling germination are: the more light the more seedlings; the more tubers the less seedlings; the more leaf litter the fewer seedlings (*Stinging Tree* leaf fall can really swamp seedlings); the more light the more *Pollia* and *Cunjevoi* establishment; the more *Pollia* and *Cunjevoi* the fewer tree seedlings; the more light the more *Sandpaper Fig*, *Stinging Tree* and *Red Cedar* seedlings; the less light the more *White Booyong* and shade tolerant seedlings; the more light the faster the growth rates and the more maintenance. Maintenance required is firstly to follow up *Trad.* removal, and then successive *Anredera* tuberling removals - about five times in the first two years and thereafter once a year for five years. (This is the major task and the one that sends people to herbicide spraying). Exotic tree seedlings like *Small-leaved Privet*, *Camphor Laurel*, *Mulberry*, *Queen Palm*, *Yellow Guava* are easily removed. In sunnier areas *Castor Oil* and *Tobacco Bush* seedlings can be very thick, and while providing some shade, are generally not encouraged because they compete with the natives. In gap areas our strategy is first to establish a canopy by planting seedlings grown from local seed. *Stinging Tree* and *Sandpaper Fig* are generally the preferred species but others have also been tried with varying results. These include *Red Cedar* (*Toona australis*), *White Cedar* (*Melia azedarach*), *Cheese Tree* (*Glochidion fernandi*), *Red Ash* (*Alphitonia excelsa*). Besides weed competition, insect attack and flood damage are problems for planting. As with work in canopy areas maintenance is the greatest task. As yet, after three years, almost none of the planted areas have reached a stage where final weed removal has been started - i.e. there is still insufficient tree canopy.

Three things I haven't yet mentioned, but which are a major consideration of restoration work on the Island are flying foxes, native vines and herbs, and floods. There is differing opinion about the role of the Island's bat colony in vegetation dynamics. It would seem that the effect of bats on the remnant depends on the number of bats per unit area of canopy. The bats strip leaves from canopy which a) increases light levels, b) swamps small seedlings underneath c) stresses the trees thus stripped, which then have to recover lost canopy during the winter when the bats are usually absent or in smaller numbers. Certain individual trees and certain species (e.g. *Stinging Trees*) are particularly affected. At ground level there is a heavy rain of droppings which probably create a high surface nutrient regime, which favours plants like *Tradescantia* and *Pollia* at the expense of small seedlings. This may also render juvenile plants susceptible to insect and fungus attack. Bat droppings contain both native and exotic seeds.

Floods have been a major disturbance on the Island, undermining large trees and depositing silt - both of which have provided good conditions for exotic colonization. In 1989 two floods completely covered the Island and we had a chance to observe effects on regeneration work. Planted trees generally fared well except for *Stinging Trees* whose soft wood and large leaves made them susceptible to damage. Trees like *Waterhousea floribunda* (*Weeping Lilly Pilly*) - a river bank tree - flexed and withstood deep water in fast channels. Generally the higher the altitude (i.e. the shallower the flood water) the better. Naturally regenerated seedlings generally did well - except for those which were less than a year old, which were swamped by a 2 cm layer of silt.

**Native Vines and Herbs:** Native vines are not particularly common on the Island (except for *Piper novae-hollandiae* and *Pothos longipes*). Perhaps the liana niche has been dominated by *Anredera*. The couple of native vine jungles on the Island we have tried to keep intact, even though many rainforest restorers go for trees rather than vines, and cut vines back. *Cissus sterculifolia* - which dominates the vine jungles - probably recovers from cutting, as do *C. antarctica* and *C. hypoglauca*. *Carronia multisejala* and *Rauwenhoffia leichhardtii* are two less common vines that occur on the Island (the former at its southern limit), and these deserve careful treatment. Personally I feel vines are an important feature of rainforests and, though they require more maintenance, look untidy, and may stress trees, I don't see these things as justification for meddling with them. *Pollia*, *Cunjevoi*, nettle and to a lesser extent *Aneilema* are now treated with less respect, although it has taken us a long time to feel comfortable about this. They make the removal and maintenance of *Tradescantia* and *Anredera* tubers very difficult, they are easily reintroduced (they do it for us), and they inhibit woody species. Still *Cunjevoi* and *Pollia* are distinctive features of the Island and along with vines they supply a particular niche for wildlife.

One striking thing on Bellingen Island is the density of seedling regeneration and of ground flora. This is not uniformly so - one square metre of soil can be quite different to the next, often with no apparent reason. The bat-thinned canopy may encourage dense seedling regeneration and ground flora, and I think manual weeding rather than spraying is less likely to suppress seedling establishment. This last observation is based on comparison of the Island with herbicide based projects - but such comparison is dangerous: Different sites have different ecological conditions, even if they are superficially similar, and the intentions of regenerators can themselves produce quite different results. For example, the aim of re-establishing canopy can itself suppress seedling germination; but on the Island the bats have always kept the canopy thinned even after the complete removal of blankets of *Anredera* vines. Most species on the Island have managed to regenerate since work began, whereas, when we started seedlings were rare indeed. Several new species have appeared as well, vines outnumbering trees and shrubs.

I could mention several other things such as other troublesome weeds like Palm Grass (*Setaria palmifolia*), Asparagus Vine (*Asparagus plumosus*), Balloon Vine (*Cardiospermum grandiflorum*), Celtis (*Celtis occidentalis*) - the most common exotic tree species. Much could be said about the politics of flying foxes, and the Council's campaigns to remove them (by means of scare guns, helicopter, ultrasonic devices etc.) and our campaigns to stop them. I haven't mentioned the fascinating bird reptile insect etc., fauna of the Island. Nor more unusual weeds like Coffee, Kiwi Fruit, Queen Palm, Paw Paw, Peach Macadamia, Avocado, Taro, Sweet Potato, etc. Nor speculated on the relative importance of birds and bats as seed dispersers.

Two things, though, to finish off. As may be obvious to visitors to the Island, we have been inspired by the Bradley Method, as, no doubt, have other rainforest restoration projects on the North Coast. Disagreement about method, and special innovations are no reason to say that the Bradley's work is not relevant to rainforest. More generally, method is determined by many values which people bring to a project - about what they want to produce, how they like to work, what tools they can use, about what they think is "natural" in something that, indeed, involves so much labour. Regeneration work occupies an area of human endeavour which is concerned with one of the oldest and most enduring of the problems of western (and probably elsewhere) thought: the division between nature and culture. No wonder it is an area of not merely technical but also philosophical problems. Therefore, and lastly, criticism is just as important as encouragement. And thankfully we've had more than our share of the former. But the most important thing (and the Bradleys made this quite clear) is maintenance. And people, volunteers, have to be inspired if they are to maintain the work.

#### BELLINGEN AFFORESTATION GROUP.

Colin Broadfoot writes "I help co-ordinate the Bellingen Afforestation Group, which has, as its main activity, an annual tree seedling order system. This involves producing an order form each Spring, on which approximately 70 species of rainforest and non rainforest plants appear. We co-ordinate the supply of these plants at wholesale prices to an ever increasing number of local people. If any members are interested in organising a similar thing in their area, they could contact me for some more information." Contact Colin at "Boggy Creek Natives", P.O. Box 154 Bellingen 2454.

#### OUR JUNE OUTING TO SAM AND BETTY JACK'S PROPERTY AT WARRIMOO.

Sam and Betty live in a lovely setting, a refreshing change for those of us who had travelled up from the big smoke. They have an extremely interesting garden and just a "little" larger than the average city dweller is used to!. Both have put a lot of work into planning and creating their garden, establishing a rainforest setting on a rocky site that to most of us appeared too dry and devoid of soil to sustain such lush vegetation. Sam does have a few secrets however that he uses to make mother nature do her job so well. One is maintaining plenty of mulch approximately 10 cm deep on all beds in the garden and another is regular feeding (approximately every 6 weeks) with dynamic lifter which he simply broadcasts around the garden. As far as watering is concerned Sam only does it for survival purposes when plants are showing obvious signs of wilting and then only with a hand held hose, he has no fixed sprinklers! Being a person who uses fixed sprinklers often in dry periods I marvelled at what Sam had achieved without them!

Sam provided us with a grand tour of the northerly facing, steep sloping, rainforest garden and demonstrated his skill of remembering the name of all of his thriving specimens. He explained that all the garden had been created on a foundation of rock with soil depth limited to between 5 cm and 1 metre. In these conditions Sam has achieved his best results by planting small trees which establish better than advanced ones, adapting more readily to shallow soil and spreading their root systems quicker in search of nourishment and moisture.

Some of the plants we saw and which come to mind are: *Jagera pseudorhus*, *Neolitsea dealbata*, *Planchonella australis*, *Euodia elleryana*, *Curculigo* (NSW species), *Toona australis*, *Linospadix monostachya*, *Archontophoenix cunninghamiana*, *Livistona australis*, *Cyathea cooperi*, *Cyathea rebecca*, *Cyathea australis*, *Cordyline*, *Pandorea pandorana*, *Ficus macrophylla*, *Ficus* (other species), *Davidsonia pruriens*, *Platynerium bifurcatum*, *Platynerium superbum*, *Hibiscus* (several species), many rainforest fern species, many rainforest orchids.

A large shade area protects their many pot plants with a glass house where Sam propagates entirely from cuttings. He feels strongly that using cuttings is a better way of ensuring that species survive in an unadulterated state rather than planting seed and running the risk of introducing hybrids.

There were 16 members who had lunch under the pergola, followed by a short meeting of the group giving consideration to several ideas for future activities. A plant raffle added \$46 to group finances. Our thanks to Sam and Betty for a most interesting day by allowing us to look over their lovely rainforest garden and for sharing with us some of their thoughts, and hints on propagating. We feel sure everyone thoroughly enjoyed their day at "Gurawin" and are now more excited than ever about growing and studying rainforest plants.  
(Trevor and Carol Deane)

#### HAPPENINGS AT SYDNEY'S ROYAL BOTANIC GARDENS.

In May, the first planting took place in a new \$4 million glasshouse arc that will eventually be home for up to 15,000 plants collected from the world's tropical rainforests. The new facility will, in combination with an existing glass pyramid, give the public a glimpse of the complex crowded tropical rainforest ecosystem that is still under threat in many parts of the world from logging, development, agriculture and mining. Rainforests once covered the entire tropics forming a band around the earth, broken only by the sea. More than half of this has now been cleared and lost. The United Nations FAO estimates that a tropical rainforest area equivalent of the size of Switzerland or Tasmania is cleared every year.

The arc, which will be opened to the public from 17th September, has 3 elevated walkways, several watercourses and waterfalls that will be lined with rocks and ferns, and in the cooler section there will be a special machine creating mist and fog. (Report Sydney Morning Herald 18/5/90)

(Editorial) Personally I feel that \$4 million, together with ongoing high running and maintenance costs would have bought a large slab of our own sadly diminished and threatened natural environment, for which government can just never afford to purchase due to continual stringent financial reasons. But for a glasshouse crammed with exotic species, no worries at all. There is no doubt that every effort should be made to ensure the survival of each of the species now surviving on the planet, but in Australia there are estimated to be more than 4,000 species of flora and fauna at risk of extinction. All funds available here should be committed to protecting our own life forms first. After this is assured, we will then have the luxury of aiding other countries in protecting their own biota. What do you think?

## PLACES TO SEE RAINFOREST IN N.S.W.

<u>NATIONAL PARKS</u>	DRY	COOL TEMP	WARM TEMP	SUB TROP	LITT- ORAL	COMMENTS
Apsley Gorge	S					On steep rocky scree
Barrington Tops		M	M	M		Largest cool temp. occurrence on mainland
Blue Mountains			S			Includes an endemic conifer
Boonoo Boonoo	S					Small outlier with rare tree species
Border Ranges	M	S	S	M		Largest remaining rainforest in N.S.W.
Brisbane Water			S			
Budawang		S	S			Eucryphia association
Bundjalung					S	
Crowdy Bay					S	
Deua		S	S			Eucryphia
Dharug			S			
Dorrigo		M	M	M		Outstanding STRF on rich basalt
Gibraltar Range			S	S		Easily accessible
Goulburn River	S					Small occurrence on basalt peak
Guy Fawkes River	M		S	S		Emergent Grevillea robusta
Hat Head				S	S	
Kanangra Boyd	S		S	S		Includes some Toona australis
Kuringai Chase			S			Scattered pockets
Macquarie Pass		S	S	S		
Mimosa Rocks			S	S		
Marramarra				S		
Morton			M	S		
Mt. Imlay		S				Includes a pure stand of Elaeocarpus holopetalus on a scree slope.
Mt. Kapatur	S					Scientifically significant remnant
Mt. Warning			S	M		Floristically rich and rare species (ST)
Murramarang			S	S		
Myall Lakes				S	S	
Nightcap			S	M		Rare species and 1200 year old Lophostemon emergents (in W.T.)
New England	S	M	M	M		Araucaria emergents - southern limit
Nymboida	S					Araucaria emergents
Royal		S	S	S	S	
Wadhilliga		S	S			Eucryphia
Washpool			M	M		Largest stand of Coachwood in N.S.W.
Wallaga Lake			S			Minor gully stands
Werrikimbie	M	M	M	M		
Woko	M		M	M		
Wollemi	S		M	S		
Yuraygir					S	Minor occurrences on coast
<u>NATURE RESERVES</u>						
Barron Grounds			S			
Bell Bird Creek			S	S		
Berkeley				S		Island remnants
Bermagusee			S	S		
Boorgana		S	S	S		In deep gully with cold air drainage (CT)
Bournda			S			Only in gullies
Bowraville				S		
Broken Head					M	Sub tropical/littoral with Araucaria sp
Brunswick Heads				S	S	Rare species, bordering mangroves
Camels Hump	M			S		
Cedar Brush				S		Isolated stand in inland area
Cocumbac				S		Island remnant in floodplain
Cook Island					S	
Coramba				S		Floodplain remnant
Davis Scrub				S		Big Scrub remnant
Devils Glen			S	S		

<u>NATURE RESERVES</u>	<u>DRY</u>	<u>COOL TEMP</u>	<u>WARM TEMP</u>	<u>SUB TROP</u>	<u>LITT- ORAL</u>	<u>COMMENTS</u>
Egans Peaks		S				
Georges Creek			S	S		
Goura			S			
Iluka					M	Largest remaining example in N.S.W.
Jasper	M			S		
John Gould					S	Offshore island
Kattang					S	
Limeburners Creek					M	Headlands type
Limpinwood	M	S	S	M		Cool ST rare plants. Araucaria emergents
Moonee Beach					M	Sand dune type
Mt. Hyland			M	S		High altitude remnant of WT
Mt. Seaview	M		S	M		
Muldiva				S		
Nadgee		S	S			Eucryphia
Numinbah			S	M		On inner wall of volcano erosion caldera WT with rare plants ST
Red Rocks			S	S		
Robertson			S			
Rowleys Creek Gulf	M			S		Sole remnant of RF on basalt plateau
Snapper Island				S	S	Island remnant
Stotts Island				M		Unique remnant of Araucarian RF on alluvial river island
Susan Island				S		Important island remnant in flood plain
Toura Point					S	
Ukerabagh					S	Rare tree species
Uralba				S		
Victoria Park				S		Big Scrub remnant
Wallis Island				S		Palm jungle
Weelah			S			
Willi Willi Caves	S					On limestone
Wingen Maid	S					In rocky crevices
Yahoo Island				S	S	
<u>STATE RECREATION AREAS</u>						
Arakoon				S	S	
Booti Booti				S	M	Includes dominant Podocarpus elatus in LRF
Bournda			S			
Illawarra			S	M		
<u>FLORA RESERVES (STATE FORESTS)</u>						
Banda Banda		M		S		
Big Scrub				M		
Black Bull			S			
Blue Gum		S				
Boomerang Falls			S	S		
Brown Mountain		S				
Bruxner Park				M		
Bundagen					M	
Cambridge Plateau				M		
Chapmans Plain				S		
Durras Lake	S					
Glenugie Peak	M					Rare and unusual species
Gloucester Tops		S	S			Links 2 sections of Barrington Tops N.P.
Jerewarrah				S		
N.W. Jolly Memorial			S			
Kerripit Beach		S				
Lorne				S		Large eucalypt emergents

## FLORA RESERVES (STATE FORESTS)

	DRY	COOL TEMP	WARM TEMP	SUB TROP	LITT- ORAL	COMMENTS
Madmans Creek	S					
Mines Road				S		
Minyon Falls				S		Extensive stands of Bangalow palms
Mobong Creek			S	S		
Mt. Dromedary		M	M	M		Southern limit of many RF species
Mt. Nothofagus	S	S		S		Northern inland limit of <i>N. moorei</i>
O'Sullivan's Gap				S		Large euc. emergents
Red Cedar				S		Excellent <i>Toona australis</i> regeneration, near Dorrigo
Rewleys Rock			S	S		
Sugar Creek	S		S	S		Many cabbage tree palms
Teak Tree	S					Southern limit of crow's ash
Toooloom Scrub				M		Unusually rich mammal fauna
Tulipwood	S					
Wonga Wonga			S	S		
Woolgooga Creek				S		

M = major occurrences

S = minor occurrences

From a list published by the National Parks and Wildlife Service as at June 1985. Probably many of these locations are not easily accessible.

Further information on specific sites can no doubt be obtained from the N.P.W.S. or the Forestry Commission.

## VICTORIAN NATIONAL PARKS CONTAINING RAINFOREST.

Glenaladale (183 ha) 42 km NE of Bairnsdale contains pockets of lush temperate rainforest in deep valleys around the Mitchell River. The "Den of Nargun" is a well known local feature and one feels the quiet and eerie stillness in the vicinity, and can well understand why the now dispossessed tribes generally avoid the location, treating it with a mixture of awe and fear. Huge Kanookas, tall Pittosporums and Lilly Pillies, with Kurrajongs, big woody vines, mosses, ferns and orchids help to make a lasting impression on the serious visitor. A severe fire in 1965 burnt much of the rainforest vegetation but recovery has been remarkable. The rare rough maidenhair fern is found here, the Kanooka and Yellow wood are at their western limit.

Alfred (2390 ha) on the Princes Highway east of Cann River includes the "Drummer Jungle", one of the most southern occurrences of warm temperate rainforest, this type becoming more simple structurally the further south it occurs. Ferns, mosses and lichens are abundant. *Teloepa oreades*, the Gippsland Waratah reaches 12m high, while Kanookas, Blackwood, *Acmena smithii*, *Elaeocarpus reticularis*, *Eupomatia laurina* support many creepers including massive vines of *Cissus hypoglauba*. The rare oval fork fern, *Tmesipteris ovata* and violet nightshade *Solanum brownii* are protected here, as are the tree ferns *Dicksonia antarctica*, *Fieldia australis*, *Cyathea australis*, *C. cunninghamii*, *C. leichhardtiana*, together with the sterile hybrid "Skirted Treefern" *Cyathea marcescens* of *C. australis/cunninghamii*-*inghamii* parentage, endemic only to this location and the Otways.

Lind (1166 ha) between Orbost and Cann River is dense gully vegetation of warm temperate rainforest surrounded by state forests. The usual Kanooka, Waratah, Blackwood, Lilly Pilly, Blueberry Ash are here, with associated tall shrubs, tree ferns and vines with a ground layer of dense ferns. This park was a victim of the great fires of 1939. Another recent threat arose when the misnamed "Victorian Land Conservation Council" realised that when Lind was proclaimed, a number of majestic trees were included in the park boundaries. As this was considered to be locking up a valuable resource, the Council recommended in 1986 that the park be revoked and in part turned over to logging. This would have set a precedent threatening all National Parks in Victoria, and was quite correctly rejected.

## CHARACTERISTICS OF RAINFOREST - PART 1 - TROPICAL.

Compared to other habitats tropical rainforest floor is quite clean. There is generally a light layer of leaves and twigs as fallen material cannot buildup, the effects of moisture, warmth, bacteria, fungi and insects decomposing the litter layer rapidly. As many fallen fruits are also destroyed by these natural processes, comparatively few seedlings manage to germinate. Those that do eventually emerge suffer heavy losses from insects, animals and fungi and the survivors usually remain in a dormant state for a long time, but in the absence of light, most of these die off.

When a gap occurs in the canopy the whole scene changes and the small plants race away in their endeavour to survive. This cycle generally results in maintaining a community of very diverse species and it is rare that, in a natural ecosystem, any particular plant or animal becomes dominant. However, when man is involved the effects are often much different, probably because areas disturbed are of a large scale. The balance is completely changed and the damage so extreme that the whole system has to start from scratch.

It commences with the colonising plants becoming quickly established, often with one dominant species. A typical example of this can be seen in Qld's Eungella National Park where over-enthusiastic road-works laid bare some large areas which in places are totally covered with *Alphitonia excelsa*. It would be interesting to monitor such habitats for a number of years and record the length of time taken by other species to successfully compete and become established within these pioneer communities.

## NORTH COAST REGIONAL BOTANIC GARDEN - COFFS HARBOUR N.S.W.

It includes an extensive rainforest section that Alex Lloyd has been actively involved in setting up. He is an expert on NSW rainforests and has written a number of papers and books over the years. Alex has kindly given permission to quote some of his material in due course. In the meantime if study group members wish to visit these gardens, where many rare and endangered species are being established, Alex has offered to show them around, but in return will seek further ideas and suggestions from you.



# IS YOUR GARDEN A WEED NURSERY?

Your cooperation is sought in helping to stop the spread of community weeds.

These plants, which can be quite attractive, spread far and wide into vacant lots and local bushland displacing native vegetation. This spread of weeds is costly to control and very destructive to our unique flora and fauna.

Spread of weeds takes place in several ways:

- (1) Birds, animals, wind and water carries seeds into bushland where they germinate.
- (2) Illegally dumped garden litter.

Some weeds, like Pampas Grass and Rhus Tree are now prohibited. Owners of these plants on their property can now receive fines of \$1000 or more in NSW.

Here is a list of some of our community weeds:-

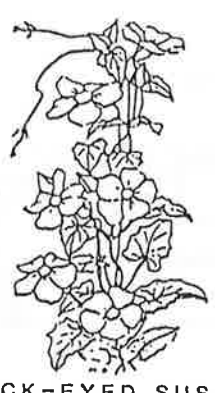
PAMPAS GRASS	(Cortaderia selloana)
RHUS or WAX TREE	(Rhus succedanea)
SCOTCH BROOM	(Cytisus scoparius)
LARGE-LEAVED PRIVET	(Ligustrum lucidum)
SMALL-LEAVED PRIVET	(Ligustrum sinense)
OCHNA or MICKEY MOUSE PLANT	(Ochna serrulata)
MADEIRA or MIGNONETTE VINE	(Anredera cordifolia)
MORNING GLORY	(Ipomea indica)
BALLOON VINE	(Cardiospermum grandiflorum)
HONEYSUCKLE	(Lonicera japonica)
POTATO VINE OR TURKEY RHUBARB	(Rumex sagittatus)
WILD OLIVE	(Olea africana)
WANDERING JEW	(Tradescantia albiflora)
CAMPBOR LAUREL	(Cinnamomum camphora)
BONESEED or BITOU BUSH	(Chrysanthemoides monilifera)
CAPE IVY	(Senecio mikanoides)
ASPARAGUS FERN	(Asparagus sprengeri)
CASSIA	(Cassia bicapsularis)
BLACK EYED SUSAN VINE	(Thunbergia alata)
CROFTON WEED	(Ageratium adenophora)

Of course many more could be added.

Please look carefully at the types of plants you have chosen to grow. If necessary replace and dispose of properly. There are considerable advantages to be gained by growing natives. They are drought resistant, reduce the need for insecticides and attract native birds.



CASSIA



BLACK-EYED SUSAN



ASPARAGUS FERN



POTATO VINE



AMPAS GRASS \*



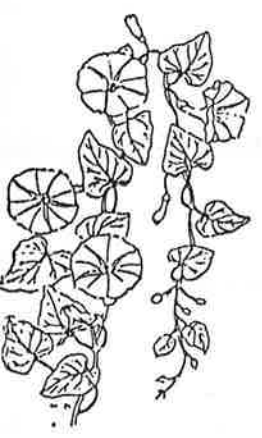
WILD OLIVE



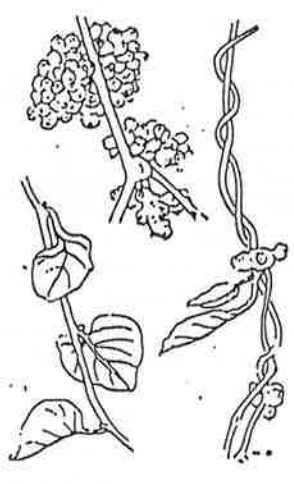
HONEYSUCKLE



BONESEED OR BITOU BUSH



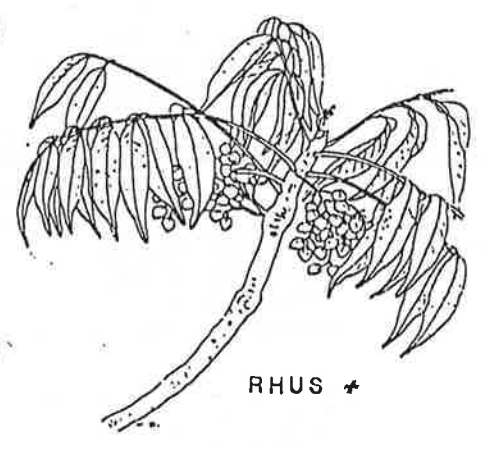
MORNING GLORY



MADEIRA VINE



WANDERING JEW



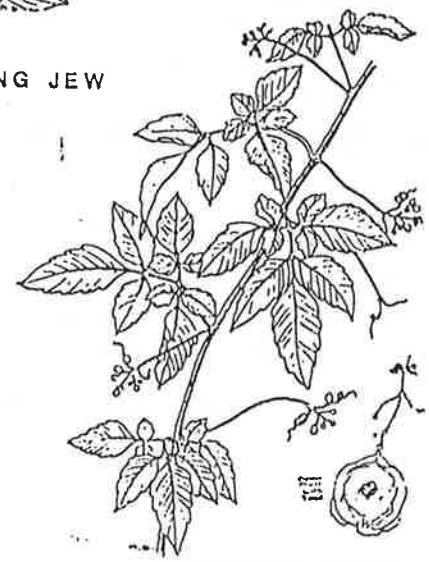
RHUS \*



OCHONA



LARGE-LEAVED PRIVET



BALLOON VINE

\* PROHIBITED PLANTS