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Dear Members,

Time for our newsletter again. Although I have received some requests for seed and answered a number of letters, activity of members has generally been fairly quiet. A number of new members have joined. Subscription fee is now due again. It still remains at \$2 per annum. A few of you have already paid it but for those of you who have not, would you please pay within the next month or so. The groups bank account is now fairly low and regular subscriptions are required to print and post the newsletter and purchase seed.

Here in Central Queensland, the past summer has been fairly average and although not a wet summer rainfall was generally sufficient for good plant growth. Probably because of mild winters and lack of heavy frosts during the last few years some insect pests that appear to have built up and during the warm humid months did considerable damage to some native plants, both cultivated and natural growing. Although a wide range of natives received some damage, the worst affected appeared to be some of the eucalypt species. Damage was most severe in tiny seedlings and small growing plants up to about a metre in height. Larger established plants suffered comparatively less damage. One interesting aspect I found in my small native nursery, was the fact that some insects attacked only certain species of eucalypts and left others alone although they were growing side by side. A few leaf eating insects such as grasshoppers and locusts attack most species but even they preferred some species to others. I keep the use of chemical insecticides to a minimum and try to rely on natural predators of the pests and nature to keep pests under reasonable control. During April and most of May we had very pleasant fine weather with warm days and cool nights. In this period insect attack decreased and most small plants made some recovery from insect damage although a few species are still rather ragged. Late in May we had good general rain followed by more in early June. This is rather unusual for this area. This should allow continued plant growth but this will depend to some extent on temperatures and incidence of frosts.

During the Easter holiday weekend, I attended the Queensland State Conference of S.G.A.P. held at Longreach in the Central West of Queensland. This was the first time that it had been held in an inland location so the type of plants found on the trips following the meeting were quite different from those coastal and sub-coastal types most of the S.G.A.P. members were familiar with. Those who attended came from as far away as Cairns and the Gold Coast. Most of those from the S.E. corner of Queensland around Brisbane travelled by bus camping and stopping to identify, examine and photograph interesting species on the way. I travelled out to Longreach and made some of the trip in that area by car.

### Seed Collection, Extraction and Storage.

If you wish to grow eucalypts you can either obtain young plants from nurseries or grow your own from seed. Seed can either be purchased or you can collect your own. Which ever method is used, it is essential that fertile seed be obtained and that it be stored in conditions where it will retain its fertility for as long as possible. Seed collecting and extraction are not difficult but to be successful you have to know when and where to collect. One of the most important aspects is to know when the seed is likely to be mature, for the keeping quality of the seed will depend to a large extent on state of maturity at collection. By checking on times and quantity of flowering and knowing about how long that particular species takes to set seed the approximate time when the seed should be collected can be estimated. If you are only making one trip to a particular area you are limited to collecting what seed is mature at the time of your visit. The time from flowering to the time that mature seed is set and the time it will remain in the fruit on the tree varies greatly from species to species. Some species will have viable seed only a few months after flowering while others take many months. For the seed to remain fertile for a reasonable period it is necessary to wait until the seed is mature before collecting. With most species the seed is mature when the fruit is brown and hard. The valves may tend to partially open although the seed is not released. Generally immature seed is soft and pale in colour while mature seed is harder and darker. Some species will retain mature seed on the tree for up to two years while a few species such as E papuana and E tessellaris shed their seed soon after it is mature. Although some species set a reasonable amount of seed most years, many species tend to set a heavy crop of seed every 2 to 4 years. Some species are noted for their heavy crops of seed while others are relatively poor seed setters. Usually within a district, a species will tend to set mature seed at approximately the same time each year although the amount of

seed set can vary considerably from year to year.

### Seed Collection

Once you have determined where and when the seed can be harvested, the next step is to decide how to collect the seed bearing fruit. The methods used will depend on quantity of seed required, height and form of tree and where the tree or trees are growing. If only a small quantity of seed is required and this will be the case with most of us requiring seed only for our own use, it will be necessary to collect fruit from only a few branches. This can usually be done without doing much, if any damage to the tree. On the other hand if large amounts of seed are required it may be necessary to fell the tree or collect from trees cut for timber. If the tree is relatively small it is often possible to collect some seed from the lower branches from the ground, by use of a ladder or climbing up into the tree. Sometimes even with larger trees you may be fortunate enough to find low branches laden with fruit that can be reached from the ground. However, particularly with forest trees, the only fruit that is available may be well up in the branches of the crown of the tree. Here some ingenuity is required in getting the seed with the least possible effort, risk to collector or damage to the tree. With forest trees, although damage should be kept to a minimum, the breaking off of some branches is not as much concern as with cultivated trees. If the tree is able to be climbed and the collector active, it is often possible to get up into the tree, break off a few branches and drop them to the ground. If the tree cannot be climbed small branches have to be broken off by other means. One method is to use a long thin pole with a stout hook on the end. The pole may be in sections for transport. Once assembled, it is poked up into the tree and the hook, hooked over a small branch laden with fruit. By twisting and pulling on the pole the branch is brought down. A pole pruner can be used in a similar manner. Another method that can be used in bringing down small branches is to throw a rope with a weight on the end over the selected branch. The branch is broken off by pulling on the two ends of the rope. When trying to break off small branches it must be remembered that branches of some species of eucalypts are much easier to break off than similar sized ones of other species.

### Extraction

Once the fruit bearing branch has been obtained, the fruit has to be stripped from it. When small amounts are being handled, the individual fruit can be stripped by hand and placed in a bag or other container. Make sure the name of the species and date and place of collection are on the container. Now that the fruit has been collected, the next steps are to extract the seed from the fruit capsule and separate as far as possible the fertile seed from trash and other extraneous matter. For small quantities of fruit, the best methods of extracting the seed is by natural drying. They should be placed in a relatively thin layer in a container in a well ventilated warm position in the sun but not where they get too hot. They should be shaken daily and loose seed extracted. The loose seed can be separated from the fruit by the use of a sieve which allows the seed to pass through and be collected. The gauge of the sieve used will depend on the size of the seed. After a few days in the sun, most seed will have been shed from the fruit and collected. Care must be taken to put the container with the fruit under cover during rain. In the case where there is a lot of chaff and other rubbish, hand winnowing will get rid of a considerable amount of it.

### Storage

The longevity of the seed of eucalypts will depend to a considerable extent on the maturity of the seed when collected and the conditions that the seed is stored under. Under room conditions seed of most species will retain reasonable viability for up to 10 years. However a few species such as E. microtheca show a significant decline in viability if kept for any length of time at room temperatures. For long term storage eucalyptus seed should be kept in air tight containers such as glass or plastic bottles and kept at temperatures of 3 to 5 °C.

Following is a continuation of the description of species which form a botanically related group which includes true Stringybarks. This is a continuation from the December 1980 newsletter. E. agglomerata MAHCG Blue-boarded Stringbark. Page 172 of Forest trees of Australia - 345 Blakey.

This is a moderate size tree which grows on the Central Tablelands, Central Coast and parts of the South Coast of N.S.W. It is most common on slopes of the tablelands and Coastal hills where it grows on loamy soils of moderate depth and fertility in fairly dry sclerophyll forest in association with many other eucalypts. Bark is of stringybark type, coarsely fibrous, furrowed and persistent to the smaller branches. Adult leaves are lanceolate to falcate, grey green or blue green, usually concolorous and 9 to 12 by 1.5 to 2.2cm. Buds are cylindrical aloid and 0.8 by 0.3cm while fruit is globular to flattened globular and 0.5 to 0.7cm.

E tindaliae MAHCI Tindales Stringybark. No 137 of Forest Tree Series Leaflets - 326 of Blakely. This moderate sized tree grows on the North Coast of N.S.W. from South of Graft to the Queensland border. It is most common on the coastal lowlands but extends to the hills on the eastern edge of the Northern Tablelands. Soils are usually of low fertility poorly drained heavy clays. The specie grows in lowland forest in association with quite a number of other species of eucalypts. Bark is grey to grey-brown of stringybark type, finely fibrous with shallow longitudinal fissures and is persistent to the smaller branches. Adult leaves are lanceolate, somewhat falcate and 10 to 12 by 1.7 to 2.2cm. Buds are sessile, ovoid to sub-clavate and 0.7 to 0.3cm while fruit is flattened globular and 0.6 by 0.8cm. The most distinctive features of this specie are its erect form, sessile buds and fruit and strikingly reddish disc of the small globular fruit.

E eugenioides MAHEA Thin Leaved Stringybark. No 93 of Forest Tree Series Leaflets - 31 of Blakely. This is a moderate sized forest tree which occurs on the coastal and adjacent tableland areas of N.S.W. with an extension into S.E. of Queensland. It grows on coastal lowlands and hills usually on soils of moderate fertility. On poorer soils it is replaced by other stringybarks. Bark is of stringybark type, grey to brownish, thick, fibrous, longitudinally fissured and persistent to the smaller branches. Adult leaves are lanceolate, concolorous, 9 to 12 by 1.2 to 2.0cm. Buds are elongated, ovate, 0.8 by 0.4cm while fruit is globular - truncate to hemispherical 0.5 by 0.6cm. Many of the botanical characteristics of this specie are similar to that of other small - fruited stringybarks but buds are narrower than for most stringybarks. Until recently this specie was known as E wilkinsoniana.

E nigra MAHEB Black Stringybark 323 of Blakely. This is a moderate sized forest tree which grows on the North Coast of N.S.W. It is not a common specie. Bark is of stringybark type, dark coarse fibrous and fissured. Adult leaves are lanceolate and 7 to 12 by 1.5 to 3.0cm. Buds are almost sessile, clavate and 0.6 by 0.3cm while fruit is pyriform truncate to hemispherical and 0.7 by 0.8cm. Some of the botanical characteristics are similar to those of E eugenioides but generally its leaves are slightly broader, fruit thinner and timber darker.

E phaeotricha MAHEC Queensland White Stringybark. Page 164 of Forest Trees of Australia - 313 of Blakely. This specie is usually a moderate size tree with a well branched, deep crown. It is one of the most common stringybarks of S.E. Queensland as far north as Bunderberg. Further north it occurs in isolated areas except on the Atherton Tableland where it is more widespread. It also occurs on the North Coast of N.S.W. It grows on a wide range of soils but its best development is on the better quality loams over clay. It usually grows in mixtures with other eucalypts and is seldom the dominant specie. Bark is of stringybark type, coarsely fibrous, longitudinally fissured and persistent to the smaller branches. Adult leaves are lanceolate, tending to falcate, firm texture, slightly discolorous and 10 to 16 by 1.5 to 3.0cm. Buds are ovoid 0.6 by 0.3cm while fruit is globular to pyriform - truncate, sessile and 0.7 by 0.8cm. The most distinctive feature of this specie is its fruit shape.

E caliginosa MAHED Broadleaved Stringybark. No 23 of Forest Tree Series Leaflets - 324 of Blakely. This moderate sized forest tree is the most common stringybark of the New England Tableland of N.S.W. Its natural habitat is limited to that area except for a small extension into the higher parts of Southern Darling Downs in Queensland. It grows on moderate slopes and tablelands but seldom in valleys or on steep mountain slopes. It grows on a wide range of soil types where it grows in mixed forest often with other stringybarks. In these forest it can be the dominant specie. Bark is of stringybark type, coarsely fibrous, deeply furrowed longitudinally and persistent to the smaller branches. Adult leaves are broadly lanceolate, very firm, bark green, concolorous and 10 to 15 by 2 to 3cm. Buds are ovoid 0.5 by 0.2cm while fruit is globular to pilular and 0.7 by 0.6cm. The most distinctive features of this specie are its glossy green leaves and moderately small fruit with exerted valves.

E globoidea MAHEF White Stringybark. Page 174 of Forest Trees of Australia - 346 of Blakely. The small to moderate sized tree is a common specie on the coastal strip of N.S.W. particularly on the Central and South coast. It also occurs in the S.E. of Vic. On good sites it can be a moderate sized tree but on the sandstone areas in particular it is often only a small stunted tree, although in most cases the crown is dense and compact. It grows on gentle slopes and hills near the coast but extends to mountain slopes on the eastern foothills of the tablelands. Bark is stringybark type, brown, thick, fibrous, stringy and persistent to the smaller branches. Adult leaves are lanceolate discolorous with glossy dark green upper surface and 5 to 12 by 1.2 to 4.0cm.

Buds are small while fruit is hemispheric to almost spherical and 0.6 by 0.7cm. Although this specie has many characteristics in common with many of the other small fruited stringybarks, its seedling and juvenile leaves differ from them in that they are generally opposite, sessile, with wavy margins and fine hair on the under side.

I will give you a brief description of the type of country I travelled through going to Longreach for the S.G.A.P. Conference. The area I travelled through can be roughly divided into three zones for climatic and vegetation purposes. From Rockhampton west to Emerald it is sub-humid, that from Emerald west to Barcaldine is semi-arid and from Barcaldine westward the country becomes more arid. Although Rockhampton is just off the coast, the climate is relatively dry with an average rainfall of only slightly over 30 inches (750 mm). This rather dry climate allows many of the more inland species of eucalypts to reach almost to the coast in the vicinity of Rockhampton. Because of the absence of high ranges decrease in rainfall as you go inland is more gradual than in most other east coast areas and it is not until Barcaldine is reached that the rainfall drops below 20 inches (500 mm). This has the effect of allowing many of the species to have a wide east-west area of distribution in Central Queensland. Although there is some small change, the type of vegetation for the first 400 miles (640 kilometres) going west from Rockhampton does not vary greatly. It is only after Barcaldine is passed that a marked change occurs. The vegetation of Rockhampton to Barcaldine area is generally open eucalypts forest or woodland areas interspersed with patches of acacia scrubland and some open downs country. Although the vegetation of the forest and woodland areas is very mixed with fairly wide range of genera and species represented, eucalypts generally are the dominant and most conspicuous species. It is only in the acacia scrub areas where the eucalypts lose their dominance and Acacia harpophylla (brigalow) becomes the dominant specie. Towards Barcaldine A cambagei (gidgee) replaces the brigalow in the scrubs. Once Barcaldine is passed there is a very marked change in vegetation. The woodlands suddenly give way to open relatively level plains with few trees except along rivers and creeks. What small trees there are, are mostly tree type acacias with few eucalypts except along watercourses.

Although eucalypts are the dominant species over relatively large areas stretching from Rockhampton to Barcaldine, the number of species represented are not great. Three (3) species, E crebra, E melanophloia and E popalnea make up the bulk of the trees. Around Rockhampton, the main species on the Fitzroy flood plain are E tetricornis (forest red gum) and E microtheca (coolibah) with some E camaldulensis (river red gum) and E alba (white or poplar gum). Once off the flood plain the main species are E crebra (narrow leaved ironbark) on the poorer soils of the low hills, E melanophloia (silver-leaved ironbark) on the slightly heavier soils, E popalnea (poplar box) and E moluccana (a grey box) on the flats where the soils have a fair clay content. On sandy loams E tessellaris (morton bay ash) grow usually in small groups while E papuana (ghost gum), usually as isolated trees are found on sandy ridges. Scattered tree of E dichromophloia (variable barked bloodwood) and E polycarpa (long fruited blood) occur. The former usually on stoney ridges or clay soils and the latter on light sandy soils. On the Dawson River flats, E camaldulensis replace E tetricornis while E microtheca still occurs. These two species are the main ones along watercourses from that river westward. E moluccana does not extend much past the Dawson River but most other species extend considerably further inland. Once past the Dawson River E cambageana (inland blackbutt) grows in or near to brigalow scrubs while E citriodora (lemon scented gum) occurs on hills of fair fertility. On the poor ironstone out crops, E thozetiana (yapunya) grows usually in association with A shirleyi (lancewood). On the open blacksoil downs around Emerald, E orgadophila (mountain coolibah) grows as well scattered trees. In the area between Rockhampton and Emerald there has been considerable thinning and clearing of vegetation but from Emerald to Barcaldine much less has occurred. Once the Drummond Range is crossed species such as E crebra, E citriodora and E orgadophila become less common while E similis (inland yellow jacket) and E peltata (rusty jacket) are found on the poor sandy ridges. Just before Barcaldine is reached small patches of E setosa (rough leaved bloodwood) occurs.

Once on the plains west of Barcaldine, eucalypts are limited to E camaldulensis and E microtheca adjacent to water courses with the odd E dichromophloia and E terminalis (inland bloodwood) scattered on the plains. On the lighter soils a few ghost gums as well as the bloodwoods grow while on the stoney ridges some stunted E thozetiana occur.