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Dear Members,

It is time for the bi-annual Newsletter once again. During the last six months I have received a fair number of letters both from those of you who have been in the group for some time and from new members. As is usual for the spring and early summer there was an increase in request for seed. I received some much appreciated seed from members while I purchased some seed. I am now storing some of my seed in small screw top bottles in a refrigerator to increase the time that the seed will remain fertile. I suggest that any of you who wish to store seed for a considerable length of time, should try to keep it in sealed containers at temperatures of 3 to 5°C. Seed of some species of Eucalypts will remain viable at room temperatures for a number of years while others quickly deteriorate unless kept at lower temperatures. With the increasing cost of good fertile seed, storing in a refrigerator is becoming more attractive.

In Central Queensland the winter was fairly mild although we did have a number of frosts with grass temperatures at Biloele as low as -6°C but there did not appear to be any frost damage to any eucalypts either growing naturally or cultivated. Useful rain was received during most of the winter and although no very heavy rainfalls were recorded, rainfall pattern was fairly even with the result that seasonal conditions were quite good. This pattern of fairly regularly distributed rainfall has continued into the spring and early summer months. Cloud cover and humidity have been higher than normal in the early summer and this, with the fairly regular though not heavy rainfall and absence of hot dry periods has resulted in good plant growth. Insect damage to eucalypts, particularly seedlings, appears to be much less than for the corresponding period of last year. The reason for this is not clear but it may be that there is more other green vegetation for leaf eating insects to eat while following the bad insect period last year there may have been a natural increase in predators of the eucalyptus damaging insects.

During September, I planned to make a trip to Northern N.S.W. but due to illness I was unable to go. I am considering relinquishing the position of leader of the Eucalyptus Study Group. I have now been the leader for over seven years and I feel that it is time to hand over to someone with new enthusiasm and new ideas. I have enjoyed the privilege of being the leader very much and in the period have learnt much about eucalypts and other native plants. If any of you, or if you know of anyone who is interested in the position please let me know. It is an interesting and stimulating position but does take a fair amount of time and requires a considerable amount of letter writing. Time involved would probably be 2 to 4 hours per week. There are periods when things are quiet but at other times, particularly when a number of requests for seed are made or during the preparation of the newsletter more time is necessary. A basic knowledge and interest in Eucalypts and the possession of a number of text books on Eucalypts would be required. I will be prepared to assist a new leader for a time so the change over would be smooth, as I would not like a new leader to be in the same difficult position I had when I took over as Leader.

#### Field Identification of Eucalypts

To be able to study and appreciate our eucalypts, we must be able to identify as many species as possible. Although it would be ideal to be able to identify all or most of the species of eucalypts the total of over 500 and the rarity of quite a number of species makes this very difficult if not impossible except for Botanists who are specialists in the field of eucalypts. However, I believe that the members of the Eucalyptus Study Group should know at least their local species and the more common introduced species. I know many of you can readily identify a wide range of species but a few of you appear to be finding identification more difficult.

There is a wide range of criteria on which to base a likely correct identification. Certain characteristics may be common to considerable number of species while other may be specific only to a particular species. Characteristics which aid in identification include general appearance, type and size of tree; bark type; shape, colour and size of the seedling juvenile and adult leaves; type of inflorescence; size and shape of buds and fruit and texture and colour of the wood. Of these certain bark type and leaf form are usually common to group of related species while bud and fruit size and shape tend to be specific to a particular specie. It is for this reason that special emphasis is placed on the buds and fruits of eucalypts by botanists when obtaining definite identification.

However, before I go into more detail on the specific botanical characteristics, an important consideration before attempting to identify natural growing species within an area, is to know what species are likely to be growing in that locality and the soil types, topographical sites and plant associations that each species prefers. By knowing this information the number of species that have to be considered is greatly reduced and the work involved in identification made much easier. In some areas where there are only a limited number of species likely to be present this is more helpful than in localities where there are many species growing in mixed associations. In your own area you should know what species grow naturally. When you travel into another area and are interested in identifying the species, it is best to meet local people who are interested in eucalypts and know their local species. Although local farmers, foresters and people interested in their local flora may not always know the botanical names of the eucalypts most know the commonly used local names and by checking in books these can be quickly related to botanical names. With the identification of cultivated introduced species, the position may become more complicated unless it can be ascertained what plants were likely to have been introduced and planted. Often this information can be obtained from local councils, nurseries etc.

The identification of eucalypts using a range of basic characteristics is the only certain way of arriving at a likely positive identification. Before this can be done you should have access to books that give an accurate detail and preferably with photos, the botanical characteristics of each specie and you should also have some knowledge of botanical terms used in describing in particular leaf, inflorescence, bud and fruit shapes and forms. There are now a wide range of books that will aid in the identification of eucalypts but I find that if you have the following you should be able to, with some practice, be able to identify a wide range of species.

These books are:

- (a) "Forest Trees of Australia" by "Hall, Johnston & Chippendale".
- (b) "Eucalypts of the Western Australian Goldfields" by G.M. Chippendale.
- (c) Forest Tree Series Leaflets No. 1 to about 220.
- (d) "Eucalyptus Buds and Fruit" edited by "G.M. Chippendale".

Unfortunately all these books and leaflets do not appear to readily available at present but if interested in them enquire at:

- (1) Australian Government Publishing Service - Sales and Distribution Section, P.O. Box 84, Canberra, A.C.T....2600.
- (2) C.S.I.R.O., P.O. Box 89, East Melbourne, Vic....3002.

The main characteristics that can be used in identification are as follows:-

(a) Appearance, type and shape of specie

Appearance will indicate whether it is a malle small single trunked tree, moderate sized tree or large forest tree. Type and shape of trunk, crown etc. will help in that some species have short crooked trunks, others have tall straight trunk, some have dense compact crowns, some have spreading crowns while others have open crowns.

(b) Bark type

Botanically related species tend to have similar bark types and although it is not usually possible from bark type alone to give a positive identification the group to which the specie belongs can usually be ascertained and this will greatly reduce the number of species that have to be considered. For instance ironbarks, bloodwoods, stringbarks and red gum all tend to have distinctive characteristic bark patterns. There are a few individual species which have unusual specific bark patterns and it may be possible to identify these species from bark alone. On the other hand a few species tend to have a bark pattern different from most of their botanical relations and this can result in a specie being wrongly grouped.

(c) Leaf colour, shape and size

As with bark patterns species within some botanical groupings tend to have the same leaf type but in other botanical groupings leaf type can be quite different. Trees of the ash groupings tend to have leaves of similar colour, shape and size while those within the ironbark group often have leaves considerably different from each other. In the latter, leaves can help greatly in individual identification. Characteristics to be looked for in leaves include size and shape, colour, whether concolorous or dis-colorous; whether long stalked, short stalked or sessile; texture; whether opposite or alternate and vein pattern. Although adult leaves can be similar on a number of related species, seedling and/or juvenile leaves can be different and quite a number of species can be differentiated on these characteristics.

(d) Type of inflorescence

The shape of the inflorescence; length of peduncles and pedicels and number of flowers per inflorescence can all be used as an aid in identification.

(e) Buds

With fruit, buds are considered to be the most specific and reliable characteristic in individual specie identification, although some species may have buds fairly similar to other specie, few if any, have buds identical. Features to be considered when examining the buds are length of stalk, size and shape of the bud, size and shape of the operculum and in some species colour or colour markings.

(f) Fruit

Fruit are considered to be one of the most reliable characteristics with few, if any specie, having identical fruit. Features to be considered when examining the fruit are length of stalk, size and shape of the fruit, disc pattern; type, number and shape of the valves and in some species colour or colour markings.

(g) Texture and Colour of Wood

Although overall not a widely used criteria in specie identification, wood texture and colour can in a few instances be quite valuable in differentiating some species that have other characteristics fairly similar but their wood is quite different.

With some species and in certain localities a number of factors can complicate identification of individual trees. These are:-

(i) Hybridisation

Within closely related botanical groupings of eucalypts, hybrids can readily occur. These hybrids are usually found where a population of one specie adjoins that of another closely related specie. The hybrids will usually have some characteristics of both parents. In most cases by knowing what species are present and if hybridisation is likely, it is usually not difficult to ascertain what the likely parents are. In some areas hybrids are quite common while in other areas few if any are present. The introduction of new cultivated species to an area where related natural growing species are already present is likely to result in an increase in the number and types of hybrids present because in nature the limiting factor to hybridisation is that only in some cases and localities are the likely parents growing in close proximity.

(ii) Intergrading

As with hybridisation, this occurs where a population of a specie adjoins that of a closely related specie. However, instead of a few hybrid trees with characteristics between that of the parent plants there is a gradual change in characteristics from one specie to the other over a considerable area until the characteristics become true for those of the other specie. In the area of change, the trees have characteristics between those of the two species. In Qld. there are two good examples of this. In the coastal and sub-coastal areas the most common red gum is E. tereticornis while further inland E. camaldulensis is the common red gum. In the area between the two there is a considerable amount of intergrading where certain characteristics of E. tereticornis such as the horn shape of the operculum gradually change to the pointed conical shape typical of that of E. camaldulensis. Similarly the ovate or sub-orbicular leaves of E. populnea gradually change to the narrow leaves of E. brownii. This occurs over a distance in the area between Clermont and Charters Towers.

(iii) Type variation

In species such as E. camaldulensis, E. papuana and E. microtheca which have a very wide geographical distribution there is considerable variation in some type characteristics in different localities. Even within a limited area the odd tree on trees of a specie can be found that differ somewhat in appearance and botanical characteristics from the majority of the trees. These are probably due to local gene combinations.

Although the identification of eucalypts may seem difficult and daunting when first attempted, with some practice you should be able to identify at least, most species growing in your area. The main consideration once a basic knowledge has been obtained, is practice. The best way to obtain this is each time you see a eucalypt, try to identify it. If you can not do this by yourself, find out what it is so next time you will know. After a while you should be able to identify your local trees at a glance. When you go to another district you may find many species strange and rather confusing but after a while you will learn what they are. When travelling (but not when you are driving) try to identify as many species as possible. This not only improves your knowledge of the eucalypts of the areas you pass through but makes the trip much more interesting - try it next time you go on a trip.

Following is a brief description of species of the Ash Group and botanically related species. Species of this group can vary from some of our largest forest trees to small stunted mallees. In fact most are either very large trees or small mallees with few moderate sized species. Most are species of our cooler areas and grow in the more southern areas of Australia or at high altitudes. Many of the species of eucalypts that grow in areas of heavy frosts and snow falls are members of this group.

E. obliqua M A K A A. Messmate Stringybark. Page 178 of Froest Trees of Australia - 362 of Blakely. This large tree grows on the slopes of the Northern and Southern Tablelands of N.S.W., throughout the southern and central parts of Victoria and is common in Tasmania. In S.A. there are small areas on the Mt. Lofty Ranges and on Kangaroo Is. It grows on a wide range of soil types and although it can be found from near sea level to 1300 metres elevation, its best development is on hilly to mountainous location where it attains heights up to 70 metres. In most of its habitat summers are relatively mild while winters are cool to cold. Bark is brown, finely fibrous, rather stringy and persistent to the small branches. Adult leaves are obliquely lanceolate, concolorous, dark green and 8 to 15 cm to 1.5 to 4.0 cm. Buds are club shaped, 0.75 by 0.5 cm while fruit is ovoid to pear shaped 0.75 by 0.7 cm. Although similar in many characteristics to a number of related large species only E. fastigata has similar fine fibrous bark but that specie has cone shaped fruit compared to the more ovoid of E. obliqua.

The description of species of the Ash Group will be continued in the next Newsletter.

Abbreviata	cladocalyx	froggatii
acaciiformis	cladoclyx nana	
accedens	cloeziana	gardneri
acmenioides	coccifera	gilbertensis
aggregata	collina	gillii
alba	comitae - vallis	glaucina
albans	confertiflora	globoidea
alpina	consideriana	globulus
amplifolia	confluens	globulus compacta
amygdalina	conica	gomphoccephala
andrewsii	conglobata	gonglocarpa
angulosa	conglomerata	goniantha
annulata	cordata	goniacalyx
apodaphylla	cornuta	gracilis
aquilina	corrugata cosmophylla	grandifolia
archeri	crebra	grandis
argillacea	crenulata	griffithsii
argophloia	crucis	grossa
aromophloia	cullenii	guilfoylei
astringens	curtisii	gummifera
		gunnii
bakori	dalrympleana	
baucurleenii	dawsonii	haemastoma
bailleyana	dealbata	haematoxylon
balladoniensis	decipiens	hallii
bancroftii	decorticans	hendersonii
banksii	deflexa	houseana
baucrana	deglupta	
baxteri	desmondensis	incrassata
behriana	dichromophloia	intermedia
bigalcruta	dielsii	intertexta
blakelyi	diptera	
blaxlandii	dives	
blesseri	diversicolor	jacksonii
bloxsonii	diversifolia	jacobiana
bothryoides	doratoxylon	jensenii
bosistoana	drepanophylloia	johnstonii
brachycalyx	drummondii	jucunda
brachycorys	dumosa	
brassiana	dundasii	kessellii ← goniantha
brevifolia	dunnii	kitsoniana
bridgesiana	dwyeri	kochii
brockwayii		kondinensis
brownii	obbanensis	kruscana
buprestium	clata	
burdettiana	cremophila	laeliae
burracoppinensis	erythrocorys	laevopinca
	erythronema	lanc-poolii
caesia	eudesmoides	lansdowneana
calcicola	eugenioides	largeana
calignosa	ewartiana	largiflorens
calophylla	exserta	latifolia
calycogona		lehmanii
canaldulensis	falcata	leptopoda
cambagana	fasciculosa	lesoufii
cameronii	fastigata	leucophloia
camfieldii	ferruginea	leucoxylon
← campanifruca ← no longer used	fibrosa	leucoxylon rosca
campanulata	ficifolia	ligustrina
campaspe	flocktoniae	lirata
camphora	focunda	longicornis
capitellata	foelchiana	longifolia
celastroides	formanii	loxophloia
cephalocarpa	forrestiana	lucasii
chapmaniana	fraseri	
citriodora	fraxinoides	macarthurii
		macranda

macrocarpa  
macrocera  
macrorhyncha  
maculata  
maidenii  
mannifera  
mannifera praecox  
marginata  
mckiana  
megacarpa  
megacornuta  
melanoleuca  
melanophloia  
melliadora  
michaeliana  
microcarpa  
microcorys  
microneura  
microtheca  
moluccana  
moorci  
norrisii  
mullerana  
muck river'

neglecta  
nesophila  
nicholii  
niphophila  
nigra  
nitens  
nitida  
nortonii  
notabilis  
normantonensis  
nova-anglica  
nubila  
nutans

oblonga  
obliqua  
obtusiflora  
occidentalis  
ochrophloia  
odontocarpa  
odorata  
oleosa  
oldfieldii  
oligantha  
orbifolia  
oreades  
orgadophila  
ovata  
oxymitra

pachyloma  
pachycalyx  
pachyphylla  
panda illequens  
Paniculata  
parramattensis  
parvifolia  
patens  
patellaris  
pauciflora  
pccneri  
pellita  
peltata  
perriniana

pileata  
pilligaensis  
pilularis  
piperita  
planchoniana  
platycorys  
platypus  
polyanthemos  
polycarpa  
polybractea  
populnea  
porosa  
preissiana  
propinqua  
pruinosa  
pterocarpa  
ptychocarpa  
pulverulenta  
pulchella  
pumila  
punctata  
pyriformis

quadrangulata

racemosa  
radiata  
raventiana  
redunca  
regnans  
resinifera  
rhodantha  
risdonii  
robusta  
rugosa rossii  
rodwayi  
rubida  
rudderi  
rudis  
rummeryi

saligna  
salmonophloia  
salubris  
sargentii  
schlerophylla  
secana  
sepulcralis  
sheathiana  
setosa  
sessilis  
shirleyi  
siderophloia  
sideroxylon  
sideroxylon rosea  
sieberi  
signata  
similis  
simmondsii  
smithii  
socialis  
spathulata  
sphaerocarpa  
squamosa  
staeri  
steadmanii  
staigerana  
stellulata  
stoatei

strictlycalyx  
stricklandii  
stricta  
sturgessiana

tenuipes  
tenuramis  
tereticornis  
terminalis  
tessellaris  
tetragona  
tetraptera  
tetrodonta  
thozetiana  
tindaliae  
todtiana  
torrelliana  
torquata  
trachyphloia  
transcontinentalis  
triflora

umbra  
umbrawarrensis  
uncinata  
urnigera  
urophylla

viminalis  
viridis

wandoo  
watsoniana  
websterana  
whitei  
woodwardii  
woolsiana

youmanii  
yarraensis  
youngiana

#### HYBRIDS

baxteri x alpina  
erythronema x strictlandii  
laevopinca x macrorrhyncha  
melanophloia x cambageana  
orgadophila x melanophloia  
torquata x woodwardii  
pauciflora x radiata  
calignosa x stellulata  
angulosa x tetraptera