

**THE  
SCOUT TREE BOOK  
FOR  
NEW SOUTH WALES**



**BY**

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## INTRODUCTION

THE dependence of man upon trees has been ever increasing down through the ages, so that today, if we are to improve living conditions throughout the world, we must energetically apply and improve our knowledge of forestry in order to increase and maintain the products of the forest and so meet world requirements.

Early in the history of man his needs were much simpler than today, yet his survival did depend on trees in many respects. Some of his basic essentials were wood for his fire, for his spears, for his dwelling, for his boats if he ventured forth by river or sea. From these early beginnings in the use of timber have stemmed an almost endless variety of man-made articles in which wood in some form is featured. In order to supply sufficient timber to meet future requirements of civilisation, planning and foresight are essential—more than ever before.

A recent publication by the Food and Agricultural Organisation of the United Nations entitled "World Festival of Trees" emphasises the importance of a world wide effort to increase our forest potential. To quote . . .

"Love of trees is essential to an understanding of the importance of forests to national welfare and prosperity. Civilisations have disappeared through a lack of this understanding. Proud and powerful empires have vanished under the stress—not of an invading army—but of the reckless destruction of their trees and the consequent loss of the soil and water which supported human life. The threat of similar disaster exists today. It may be seen in the spread of the Rajputana Desert—gnawing into the very heart of India, and in the desert encroachment on to marginal lands south of the Sahara.

"Apart from the protection which forest cover gives to a nation's soil, water resources and climate, the tree is a thing of beauty and of use in man's immediate needs.

"Trees adorn our homesteads and our cities. They shelter our farms and our wildlife and afford peace and rest from the worries of our daily toil when we seek their healing presence in recreational parks and national reserves.

"Their abundance or absence may bear a direct relationship to industrial development and expansion, social progress and national strength.

"From a wider view, the protective role of forests may affect not just one nation, but an entire region, for their influence takes no account of national frontiers. Productive forests, too, are unevenly distributed over the world's surface, as are the varieties of hard and softwoods, the broad leaved and the coniferous species. A natural deficiency in one place may have to be made up from elsewhere. Therefore, international understanding is also essential to a more equitable distribution of the produce of the forest, and to a world wide raising of standards of living as they depend on forest values."

In Australia, most trees suitable for cutting into timber for building are found where the rainfall is more than 20in. per year and is fairly evenly distributed throughout the year. This limits the main coastal and mountain areas of the eastern States, Tasmania, and the south of Western Australia. Only 3% of the total area of Australia is covered with forest.

Despite the greater use of steel and other metals, the demand for timber, due to the expansion of industry and increase in population, is increasing. It is still the best building material for housing and furniture manufacture, and added to this it is a raw material of great importance to industry in general. It is being used in very large quantities for the manufacture of plastics, paper, rayon, hardboards and liquid fuels, and further uses are being found daily. Timber, therefore, is one of the most important factors in the economy of the nation.

A very worthwhile beginning in creating an awareness of the importance of trees can be made simply by studying those which grow around us, and learning to appreciate both their beauty and our dependence on them.

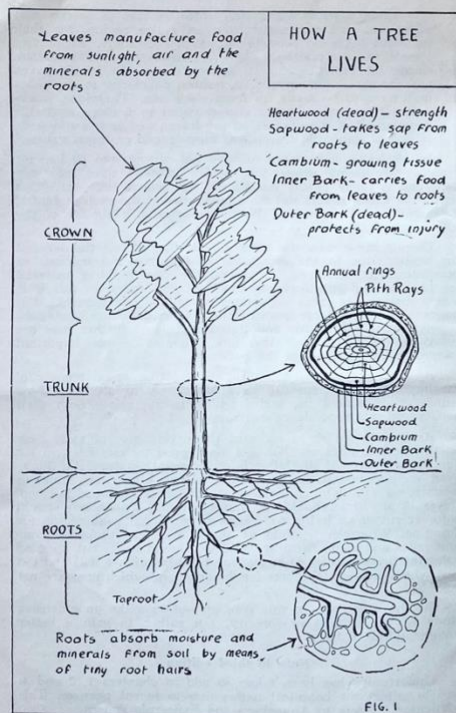
As Scouts, we share some of the dependence of early man on the trees around us. We also need wood for our fire and for our shelter (even if the latter is of temporary nature). If, however, we understand the importance of tree life to our country's welfare, we will be much more careful in our use of wood in camp. Never at any time should we mutilate living timber, nor should we ever cut down living trees without good and valid reason for doing so. Wherever possible we should use dead timber for our tent poles and camp furniture, and we should never cut up good poles for firewood. By knowing our trees better, we will find out just which ones are the best for firewood and which ones are not suitable.

We have set out in this booklet, not to make an extensive study of the subject of forestry, but rather to gain a better understanding of trees.

### Note to third edition

Opportunity has been taken to add to chapters 1, 2 and 4, and to adjust the botanical names due to recent changes. This particularly refers to Angophora and Syncarpia genera.





## HOW A TREE LIVES

It is very useful to know how a tree lives and grows, and to do this we should know what the various parts of a tree are needed for.

Below ground level we have the root system, whose function is to anchor the tree in position, and at the same time to absorb from the earth the moisture and minerals essential to the growth of the tree. The larger roots do the anchoring, while the extraction of moisture and minerals is done by the tiny hair-like roots which branch from the smaller roots.

Above ground we have the trunk and its branches, which form the framework of the tree, while at the same time providing a system of transport of minerals and moisture from the roots and of food from the leaves. The central portion of the trunk and branches is known as the "heartwood", which is no longer living, but provides the strength required by the tree. Outside this is the "sapwood" which is still alive, and is the path by which sap travels from the roots to the leaves. Next we have a layer known as the "cambium" which is the region of growing tissue, which builds both inside and outside, and allows the tree to grow in girth. Outside the cambium is the "inner bark", also known as the phloem. This is the region where the food made in the leaves travels down to the roots. Lastly we have the bark, a region of dead tissue which serves to protect the tree from injury, and sometimes to dispose of waste products.

Both the sapwood and the inner bark are continually being added to. In the case of the sapwood the vessels formed are large when the season is favourable, and small at other times. This has the effect of producing rings in the heartwood corresponding to the favourable period, and as these occur about once a year, the rings are known as "annual rings", from which the age of the tree can be determined. As the living part of the trunk is just below the bark, you can see why ring-barking a tree can kill it.

The leaves have the all-important job of converting the energy in the sunlight and the carbon dioxide in the air into the food on which the plant lives. It is the green pigment in the leaf which does this important work. Besides building up food, the tree breaks the food down as it grows, and in doing so it takes in oxygen and gives off carbon dioxide—just the same as we do when we breathe. This breathing is done through pores on leaves, twigs, branches, trunk and roots, but mostly through the leaves.

The tree also has the means for producing seeds by which it reproduces its kind. Most of the trees we know belong to the

group of plants known as the flowering plants, and accordingly they produce a flower, which in turn produces the seeds in a fruit of some type. The function of the fruiting body is to ensure the distribution of the seed.

Not in every plant are the duties of the various parts so clear cut. In the fig trees, the roots may be formed in the air above ground, and will grow downward until they reach the earth. In the Casuarina family of trees, the leaves are reduced in size to tiny scales, and the stems have taken over the function of the leaves. One very interesting thing you will notice, however, is the way leaves vary in shape and size between the different types. In some trees, particularly those in the thick rain forest growing on the shady side of a hill, the leaves are flat and well spread so that a maximum area is exposed to the sunlight. Trees growing in the open prefer narrow leaves that are hard and tough, and in some cases they grow edge-on so that the heat of the day is exposed only to a narrow edge.

Besides producing new growth from seeds, there are many trees capable of propagating their kind by sucker growth. These suckers can arise from the root system or from stems, or even when a tree has fallen over and new growth will appear on the top side of the fallen tree. This is particularly noticeable after bush fires.

While Scouts should avoid cutting green timber, there are times perhaps when it is necessary. Under these circumstances a sapling from seed growth should never be cut down, but a judicious selection of saplings from sucker growth can at times be of benefit to the remaining bush.

In recent years the practice has developed of lighting fires at the base of living trees. This is a vicious practice which endangers our forests in killing trees and starting fires which can get out of control. The practice can easily be avoided by taking care and by seeing that never at any time is a fire lit close to living timber.

## THE CLASSIFICATION OF PLANTS

FOR convenience, botanists have classified all known plant life according to the similarity in the method of reproduction. All plant life is grouped into two headings—the flowering plants (including the land plants and trees) and the rest (including seaweeds, mosses, moulds and ferns).

In the case of the flowering plants, all those with exactly the same pattern of flower and the same method of fruiting are grouped into what is known as a "genus". Thus we have the *Acacia* genus, the *Eucalyptus* genus and so on. Note that it is not the size of the plant or tree which determines the genus, but it is the flower and fruit. The genus can be compared with the family name in everyday life—e.g. the Smiths and the Jones families. Each distinct type of tree in a genus is called a "species", and it is given a Latin name describing some noticeable feature about the tree, or perhaps giving the finder's name. Thus we have a tree known as *Acacia longifolia*, meaning the "long-leaved *Acacia*", the same as we have William Smith, a name which identifies an individual.

The various "genera" (plural of genus) are also grouped into "families" of plant types with similar, but not identical floral and fruiting patterns. For an example, the *Angophora*, *Eucalyptus* and *Syncarpia* genera all belong to the *Myrtaceae* family.

In addition to the botanical name, some of the more common trees may also have one or more popular names such as the "Sally Wattle", just the same as we may have "Bluey" or "Curly" Smith. Unfortunately common names may be misleading, since the same name may be used in different localities for a large number of different species, and at the same time the one species may have a wide range of common names. Accordingly the botanical name is used where it is necessary to be definite about the identity of a tree.

It is impossible to give a guide to the identification of trees without some reference to botanical terms. In the space available we can only touch on the main points of identification. Tree recognition is a subject which can only be learned from constant practice. A book may be helpful as a guide, but it is only when you are in the bush, and with some confidence name a tree (and know that you are close to it) that you can say that you know anything about tree recognition. However, you must remember that no one person can be always 100% correct for a number of very good reasons . . .

1. —there are many thousands of distinct species of tree—some so close that botanists themselves are in doubt as to whether they belong to the same or different species.



2. — under different conditions of soil, climate and locality the one species of tree may have completely different growth characteristics.

The first step in recognition is to identify the genus to which the tree belongs by an examination of its flower and fruit, then identify the species by its other features. With practice it is possible to identify both genus and species from as little as one specimen from the tree—e.g. the fruit of a Turpentine, the leaf of a Woody Pear, the leaf of a Banksia and many others. To do this requires practice over a long period.

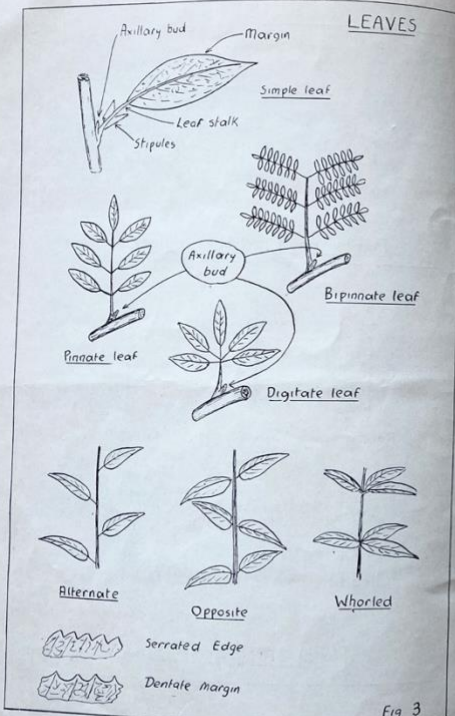
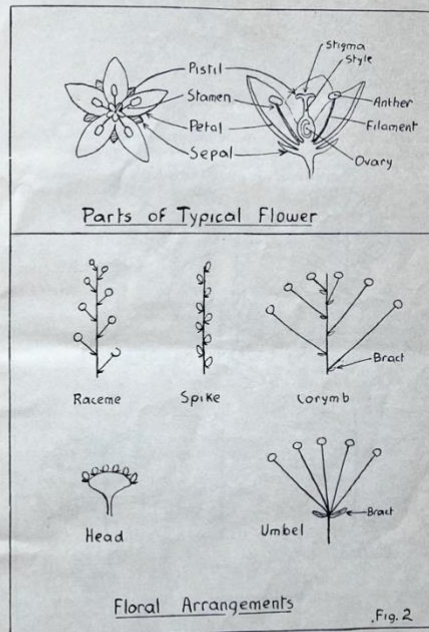
There are six points to observe in a tree, all of which help in establishing its identity. They are listed below.

1. **FLOWER.** Size, colour, arrangement of parts, arrangement on stem, appearance of bud, month of flowering. What may appear to be one flower may in fact be a collection of a large number of flowers closely grouped together. The Banksia, Acacia, Waratah, Turpentine and Bottle Brush flowers each consist of such a group of flowers.
2. **FRUIT.** Type, shape, size, colour, arrangement of seeds and number of same. Determine the method used for scattering the seed—bird or animal agency, wind, and so on.
3. **LEAF.** True or false (see later reference to phyllodes in section dealing with Acacia genus), shape, colour, veins, size, arrangement on stem, rough or smooth, hard or soft.
4. **BARK.** Type—smooth, rough, papery, stringy, etc., and whether the same over all the tree.
5. **GROWTH.** Shrub or tree—height, method of branching, growth of main trunk, height of lowest branches.
6. **LOCALITY.** Position—whether in valley, gully, hillside, ridge, swamp, salt water, fresh water, etc.; soil—sandstone, sand, clay, river silt, etc.; surrounding growth—brush, open forest, heath, etc.

A Scout should try and learn the main types of tree in the localities in which he camps or hikes. A good hint is to talk to the locals as they will be able to give you the local names for the trees as well as telling you what the timbers are used for.

#### OBSERVATION OF THE FLOWER

The purpose of the flower is to produce the seeds by which the plant may be reproduced. A typical flower has four sets of parts known as the calyx, the corolla, the stamens and the pistil. The calyx is a ring of leaf-like appendages known as "sepals" whose main duty is to protect the other parts of the flower while it is still in the bud stage. The Corolla is one or more rings of



"petals" which generally, but not always, form the most conspicuous part of the flower. Inside the petals are one or more rings of "stamens"—the male organs of the flower, and these consist of a little bag containing the pollen (the "anther") on a thin supporting stalk (the "filament"). In the centre of the flower is the female organ—the "pistil"—comprising the "stigma" or surface where the pollen grains will fall, and the "ovary"—a compartment where the seeds will form. The two parts of the pistil may be joined by a stalk known as the "style".

As mentioned earlier, it is the arrangement of the parts of the flower that determine the genus to which the plant belongs. Some plants may have the stamens and pistil on different flowers. Some flowers may have insignificant petals (as with Acacia and Eucalypts) leaving the stamens as the most conspicuous part of the flower.

As the ovary eventually develops into the fruit, its shape and position also helps determine the genus. If it is cut open, it will be noticed that the tiny undeveloped seeds are located in a definite pattern, and this pattern remains unchanged while the fruit develops.

The flowers will always be located in a definite pattern on the branches. Sometimes they may grow singly at the tips of branches—other times they may grow on stalks arising from the junction of a leaf and a stem. Some of the simpler groupings are shown in the accompanying figure. They include the "raceme" (each flower having a stalk—an example being the Lupin flower), the "spike" (similar to the raceme, but each flower is without a stalk—the Banksia and Bottle Brush flowers are examples), the "corymb" with the flowers in a flat topped cluster with the flower stalks of unequal length, the "head" where the flowers have no stalks and are grouped into what may appear to be one large flower (some Wattles, and the Turpentine) and the "umbel"—similar to the head, except that the flowers are stalked (example—the Flannel Flower). In most cases, each flower may have one or more small leaf-like parts at its junction with the stem, and these are called "bracts". The "petals" of the Flannel Flower are really bracts.

#### OBSERVATION OF THE FRUIT

The function of the fruit is to allow for the development and distribution of the seed. The fruit may be edible with the intention that animals will eat it and thus disperse the seeds. Some dry out, and split open in a hurry, snapping the seeds some distance from the parent plant. Others still open slowly, allowing the wind to blow the seeds away. Nature has gone to a lot of trouble to see that the seeds are distributed away from the parent plant to ensure that the young plants do not overcrowd the older ones or vice versa.



## OBSERVATION OF THE LEAF

Leaves may be simple (consisting of one blade) or compound (with a number of individual leaflets each one of which might be mistaken for a simple leaf). There is always a bud in the "axil" or junction of the leaf stalk with the stem, so the presence of such a bud will determine whether or not the leaflet is a simple leaf or part of a compound leaf. Compound leaves may be "pinnate", "bipinnate" or "digitate". Leaves may be arranged along the stem in a number of ways—"opposite" (in pairs), "alternate" (alternately right and left) or "whorled" (three or more in a ring about the stem).

Simple leaves may have smooth edges, or may have toothed or saw shape edges. Leaves may be flat, or curved—they may be hairy on one or both sides, they may have well marked veins and the veins themselves may fall into a number of definite patterns. Some leaves have a pair of leaf-like components at the base of the leaf stalk called "stipules". Sometimes the stipules are thornlike.

Observation of the leaf will not always determine the genus of a tree, but in many cases it will determine which species we are dealing with. This is particularly so with the wattle family.

## OBSERVATION OF BARK

The bark on some trees is sufficiently characteristic to enable quick identification of the tree to be made without looking at any further details. However, there are traps for the unwary, in so far as some trees from different genera have similar barks. A case in point is the Turpentine, which is often mistaken for a Stringy Bark at first glance of the bark, although a quick look at the growth of the tree and its foliage will show that it is not a eucalypt.

In some trees the bark will be rough all over while others may be rough around the trunk and smooth in the upper limbs. Some smooth bark trees may change colour at different times of the year and may shed their bark. This is characteristic of the smooth barked apple.

## GROWTH AND LOCALITY

Some trees always grow in a particular habitat. This can be used both as an indication of the tree itself or, if the tree is known, to the type of country. Again the type of growth is generally characteristic of any one tree. But here again the conditions may make the tree change its characteristic shape. This is particularly noticeable with the Snow Gum which is a straggling specimen on coldest hills but may be quite a shapely tree in a more sheltered position. Again it will be noticed that trees growing in a thick forest will be tall and straight but when the forest is thinned the trees tend to become stunted and branch out much nearer to the ground.

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has a spotted or mottled appearance. The trunk is similar to the "Sydney Red Gum" already mentioned, but differs in having a straight trunk, and having fruit shaped like an urn.

## GREY GUM

There are many types of grey gum, but two of interest to Sydney boys are *Eucalyptus punctata*, and the small fruited grey gum *Eucalyptus propinqua*. The first is a small to medium tree growing in poor soil (and can be seen near the George's River at Ingleburn). Its bark is dull grey in colour with large patches of darker coloured bark. The fruit are about 1/4 in. in diameter, and the valves (the parts enclosing the seed containers in the fruit) project above the rim of the fruit. The second tree grows in better soil, and is a better looking tree. The fruit are similar in shape, but are only half the size.

## SCRIBBLY GUM

(*Eucalyptus haemastoma* and *Eucalyptus micrantha*)

Both trees grow in the sandstone regions of the coast, and both have smooth blueish white patchy bark showing numerous "scribbly" lines caused by some insect. Both have irregular branching, and a trunk that cannot be called tall and straight. The first mentioned has larger fruit and narrower leaves than the second, but apart from this they are much the same.

## BLUE GUM

There are many species which are known as "blue gums" but the best known is the Sydney Blue Gum (*Eucalyptus saligna*). This is a very straight tall tree, with a clean looking pale coloured bark. It grows best in rich soil where there is plenty of water, such as on the banks of deep creeks in the coastal regions and lower parts of the mountains. How many times have you seen the name "Blue Gum Creek" or "Blue Gum Swamp" on maps?

## RED GUMS

There are a number of trees in different parts of the State which are known as "Red Gums". As the name implies, they are smooth-barked and have red timber. Forest Red Gum (*Eucalyptus tereticornis*) grows on better class soils along the coastal strip, while River Red Gum (*Eucalyptus camaldulensis*) is widespread beyond the Dividing Range, growing in situations where periodic flooding occurs, mainly along watercourses. The Red Gums are very attractive trees, particularly when the old bark has just been shed, leaving patches of dark colour on the fresh pale new bark just exposed.

The botanical name of River Red Gum was formerly *Eucalyptus rostrata*. The Latin word "rostrata" means that the cap or operculum of the buds is shaped like a beak. The fruits of the Red Gums are small to medium sized, are shaped like half a sphere, and have 3 or 4 prominent valves protruding upwards when ripe after the seeds have been shed.

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## Chapter 3

## THE EUCALYPTUS GENUS

THE Eucalyptus genus comprises some 75% of the total forest vegetation of Australia, and includes some 500 odd species. It is asking too much of any one person to be able to identify on sight each and every one of these species, because in some cases it takes an analysis of the oil to differentiate between some of the species.

This genus is characterised by the flower petals forming a cap to the bud, and as the cap falls off when the flower opens, the Eucalyptus flowers have no petals. The fruit—the familiar gumnut—varies in shape and size through the different species, but generally have a smooth rim and smooth sides. In the adult plant, leaves are alternate, but may be opposite in the young plant. Again, the young leaves may be totally different in appearance to the mature foliage, which is frequently sickle shaped.

The Eucalypts are generally divided into two main groups . . .

Group 1—"Mallees", or small trees or shrubs with many stems growing from the same root stock.

Group 2—All the other Eucalypts which have a single main trunk.

The mallees need no further description. They are common throughout the State, from the open sandstone ridges and heaths of the coast to the western plains.

The rest are again divided into a number of groups depending on their bark—those with smooth bark all over (except for a small section of rough bark at the lower end of the trunk) being called "gums". The rest—the rough barks—are divided into the "full barks", with the rough bark extending to the smallest branches, and the "half barks" where the rough bark is on the main trunk and lower ends of the branches, the upper branches being smooth.

First of all, don't let the tree known as the "Sydney Red Gum", "Apple Gum", etc., confuse you. This is not a Eucalypt but a species of Angophora, and will be mentioned later. The gums of most interest to us would include the following.

## SPOTTED GUM

(*Eucalyptus maculata*)

This is usually a fine big tree with a straight trunk, growing in shaly soil throughout the length of the coastal section of New South Wales. Generally it occurs as the predominant tree over quite a large area, and may exist as forests in some places. The trunk is perpetually shedding bark in small patches, and as the newly exposed patch is very light in colour, the trunk always

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## THE FULL BARKS

The full barks are divided into groups according to the nature of the bark as follows . . .

IRONBARKS—The bark is hard, rough, deeply furrowed and thick.

STRINGYBARKS—The bark is thick and fibrous, and can be pulled off in long strips.

SCALY BARKS—As the name implies, the bark is neither stringy nor hard, but is scaly and flaky.

THE REST—Those not covered by the above groupings.

## IRONBARKS

There are a number of Ironbarks:—Grey or White Ironbark (*Eucalyptus paniculata*), Mugga or Pink flowering ironbark (*Eucalyptus sideroxylon*) and Broad Leaved Ironbark (*Eucalyptus siderophloia*). As far as Scouts are concerned, it is most important that they recognise a tree as being an ironbark, without knowing which particular one it is. They are readily recognised by the description of the bark given above. As a matter of interest, the ironbarks include some of the strongest and most durable timbers in the world.

## STRINGYBARKS

As with the ironbarks, the stringybarks include a number of closely related species, and these are often hard to distinguish one from another, even for a skilled botanist. Again it is generally sufficient to recognise a tree as a stringybark, without knowing which particular one it is. Included in this group is the White stringybark (*Eucalyptus scabra*) growing on the poorer sandy soils and the Brown stringybark (*Eucalyptus capitellata*) also growing in the poor sandy country close to Sydney.

Sometimes included in the stringybark group are the Mahogonies, which are generally big trees with a fibrous bark, although this is not as long in the fibre as a stringybark, and tends to be flaky.

## SCALY BARKS

Most important member of this group is the bloodwood family. The common Bloodwood (*Eucalyptus gummiifera*)—also known in some books as *Eucalyptus corymbosa*—is a common tree in and around Sydney. It is a medium sized tree of the poorer soils (as in sandstone country) and the reddish brown scaly bark extends to the smallest branches. A reddish coloured gum oozes from the trunk, and gives the appearance of bleeding. The name of bloodwood derives from the reddish gum veins in the timber. The fruit is urn shaped, closely resembling that of the Spotted gum. Sometimes the fruit is misshapen and is without the shapely neck of the urn.

The Yellow bloodwood (*Eucalyptus eximia*) is similar to the

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first, but the bark is yellowish, and it grows in drier sandstone areas. The general appearance of both trees and fruit are the same as for the common bloodwood.

## OTHER FULL BARKS

### BANGALAY

(*Eucalyptus botryoides*)

This may grow into a big tree in rich damp soil on creeks running into the coastal beaches and coastal rivers. It can be seen at Stanwell Park, Garie and Era Beaches, Audley and in similar positions.

### SYDNEY PEPPERMINT

(*Eucalyptus piperita*)

This is a small tree growing on poorer sandstone country either on dry slopes or on the banks of creeks such as Heathcote Creek. The bark is somewhat scaly to fibrous—unlike the bloodwoods or stringybarks—and the fruit is pear shaped about ½ in. long.

### TALLOWWOOD

This species grows into a large tree on moist rather heavy soils along the north coast of the State, from Newcastle to the border and into Queensland. The botanical name is *Eucalyptus microcorys*, the Latin word *microcorys* means "little cap" and refers to the very small size of the cap that covers the stamens in the bud before the flowers open.

The bark is yellowish to rusty red, fibrous with deep cracks running lengthwise, and very fine cracks crosswise. The leaves are light green and are broad towards the base, tapering to a point at the ends. The fruits are small and pear shaped.

The wood it produces is one of the most valuable hardwoods in Australia, being suitable for many uses including excellent flooring.

## THE HALF BARKS

Three trees stand out in this group, the Blackbutt, the Mountain Ash and the Alpine Ash.

### BLACKBUTT

(*Eucalyptus pilularis*)

This is the most common eucalypt in and around Sydney, growing in a wide variety of soils. The name may be a bit confusing, as the butt is only black after a bushfire has been through the area. The tree may be anything up to a large tree, generally with a straight trunk. The dark grey bark is rough (but not very thick) on the trunk, and near the point

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where the first branches take off, the rough bark ends to give the clean smooth limbs typical of a gum tree. At certain times of the year the tree sheds its smooth bark, and this will hang down in festoons from the top of the rough bark at the lower branches.

The fruit from the blackbutt is "pill shaped" as the name implies and may be up to ½ in. in diameter.

### MOUNTAIN ASH

(*Eucalyptus sieberiana*)

While there are very many trees going under the name of "Mountain Ash", this one is of particular interest because it lives in the coastal division as well as in the mountains of the State. It also grows into a large tree, particularly in the gulleys, with straight trunk, and as with the Blackbutt, the limbs are smooth, although in this case they have a steely-blue colour, instead of the creamy colour of the blackbutt. The bark on the trunk varies considerably with the age of the tree, being stringy in the younger trees, and somewhat like an ironbark in the older trees. The fruit is about the same size as the blackbutt, but is pear shaped, whereas the other is round.

### ALPINE ASH

Occurs as a large forest tree in the Southern Tablelands of New South Wales, at elevations where there may be snowfalls in winter, as high as 4,500 feet. It does not grow north of Queanbeyan, but extends southwards through Victoria and Tasmania. The botanical name for Alpine Ash is *Eucalyptus gigantea*.

Trees sometimes reach a height of 300 feet. The bark on the lower half of the trunk is thick and stringy, like that of a stringybark. The upper part of the trunk is covered by smooth, bluish bark, shed in long strips. Leaves are long, fairly narrow and pointed. Fruits are stalked, club-shaped or pear-shaped, the valves which enclose the seeds before they are shed being below the rim or upper edge of the fruit.

The wood produced by this tree is very attractive, being very pale brown, often with pinkish tints. It may be used for many purposes, including furniture.

## BOXES

Boxes are eucalypts having a rough bark of a fibrous nature, the texture being fairly close and the fibres short, as distinct from the long one in stringybarks. The rough bark sometimes covers the outer branches but more often these are smooth. The name "box" is applied to these trees because of the hard, fine yellowish wood which many of them produce, resembling that of European boxwood.

The common coastal species of box in this State is Coast Grey Box, *Eucalyptus hemiphloia*, which occurs on heavy clay

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soil, though it will tolerate lighter soil. It is common near Windsor west of Sydney, and in similar localities both north and south of Sydney.

There are several types of box growing west of the Divide, examples being White Box, *Eucalyptus albens*, Grey Box, *Eucalyptus woollsiana*, Red Box, *Eucalyptus polyanthemos*, Black or Flooded Box, *Eucalyptus largiflorens* (formerly *E. bicolor*), Yellow Box, *Eucalyptus melliodora* and Bimil Box, *Eucalyptus populnea* (formerly *E. populifolia*).

The fruits of boxes are cone or pear shaped, fairly small, and have the valves which cover the seeds before they are shed enclosed below the level of the rim or top of the fruit.

The wood which these trees yield is very hard and heavy, approaching the ironbarks in quality. Most species are very durable in the ground and are regarded as extremely good fuel.

Box trees are highly valued for the blossom they produce. They provide large quantities of nectar for bees and so we have the famous "box honey" which is so excellent in quality.

## EUCALYPTS AS FIREWOOD

The Eucalypt family as a whole supply good firewood. Possibly the only one mentioned which is not good for a Scout fire might be the Bangalay, but even this is generally to be preferred to the wood from other trees growing in the vicinity. The Eucalypts are hard woods, and the fire built from them will be long lasting and hot. The little extra time taken to select wood from Eucalypts will be repaid in a trouble-free fire. As if to help us in this, the Eucalypts have a habit of shedding unwanted branches from time to time, so that there is always a supply of fresh firewood being delivered from up above in a Eucalypt forest.

It may be of interest to know that the Eucalypt family of trees were unknown outside Australia and New Guinea when our country was first discovered, but they have since been planted in many countries of the world. As a matter of fact, they are so extensive in California that the local people get very indignant when told that all their gum-trees originated in Australia. They are nearly all under the impression that they were growing there before Columbus landed in America. They are growing well in Hawaii, South Africa, and Egypt, as well as in Spain and South America.

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## THE APPLE TREES, THE TURPENTINE AND THE TEA TREES

CLOSELY related to the Eucalyptus, and often mistaken for them are two other Genera, *Angophora* (the Apples), and *Syncarpia* (the Turpentine). Both may readily be separated from the Eucalyptus by an examination of their fruit.

In the genus *Angophora*, the fruit carries a number of vertical ridges on the outside, ending in about six small sharp projections above the top rim of the fruit. Unlike the Eucalypts, the *Angophoras* have no cap on the bud, and in addition the leaves are opposite.

Best-known member of the family is the "SMOOTH BARKED APPLE" (*Angophora costata*, formerly *A. lanceolata*), a tree characteristic of the sandstone areas around Sydney. Although it may also be known as "Sydney Red Gum", or "Red Apple Gum", these two names should not be used as the name "gum" is best reserved for members of the Eucalypts. This tree is a large tree with a large smooth trunk, widespread gnarled limbs, reddish gum stains on the bark, and grows in very poor soil, often right on the edge of sandstone. The tree has a habit of adapting itself to the rock, and sometimes appears to have flowed around the rock. When a limb falls off, the tree heals around the break, leaving a rounded knob. It may at first glance be confused with the spotted gum tree (*Eucalyptus maculata*), but the latter grows in richer soil, is less gnarled, and in any case can be readily identified by the fruit.

The "DWARF APPLE" (*Angophora cordifolia*) is a common poor relation of the big tree. It grows as a shrub about six feet high, but forms a rather dense barrier on top of sandstone ridges. The scrubby stuff that makes wide games around Pennant Hills uncomfortable is mostly "Dwarf Apple". Its fruit is exactly the same shape as with its big brother, but is much larger, and when green is very hairy.

Less known to Sydney people are two *Angophoras* with rough bark. "BROAD-LEAVED APPLE" (*Angophora subvelutina*) it is not as large as the smooth barked apple, but has the same gnarled shape of the branches. It grows on the coast in richer soils (not on sandstone), and has rough, furrowed bark extending to the smallest branches. The "ROUGH BARKED APPLE" (*Angophora intermedia*) is somewhat similar to the above, but is an inland tree found in damp situations near watercourses. Its bark is more fibrous, and does not go right to the smallest branches. Its leaves are stalked, where the "broad-leaved apple" are without stalks. The fruit in all cases are extremely similar.

The only member of the genus "*Syncarpia*" of immediate interest to us is the "TURPENTINE" (*Syncarpia glomulifera*, formerly *S. laurifolia*). Often mistaken for a stringybark because of its thick, stringy bark, this tree has a tall straight trunk, but has very short, small branches. It grows thickly in the richer soils associated with shale and clay, and often occurs in groves in moist soils. The leaves are opposite, rather oval in shape (not like a gum leaf), with a dark glossy green on top, and a dirty, greyish colour underneath the leaf. The flowers grow in groups joined together, so that the fruit appears with five, six or seven openings reminding one of a radial engine as used on pre-war fighter planes. The timber of the turpentine is in demand for sea water piles, as it is very resistant to attack by marine borers.

All members of the *angophora* genus are good for firewood, and in view of their brittle nature, there is usually plenty of kindling lying around such a tree. The turpentine on the other hand is poor for burning, giving off a disagreeable smoke.

There are two types of Tea Tree growing in N.S.W. The first is really in the form of a shrub belonging to the genus *Leptospermum* and is not considered as a tree.

The second group, familiarly known as the Paper Bark Tea Tree, belongs to the genus *Melaleuca*. The three common coastal types are the Broad Leaf Paperbark (*Melaleuca leucadendra*), Narrow Leaf Paperbark (*M. linariifolia*), and the Prickly Paperbark (*M. styphelioides*). As these tea trees frequent swamp areas care should be taken when selecting the site for a camp amongst Paperbark Tea Trees.

In addition, Tea Tree makes a very poor fire wood and should be avoided wherever possible.

## BANKSIAS AND BOTTLE-BRUSHES

THE Banksias and the Bottle-brushes are two groups that often get confused. There is little reason for this, as even a cursory glance will show the difference between them. In the Bottle-Brush (genus *Callistemon*) the "brush" is made up of the stamens of a number of flowers grouped around the stem, but as the flowers die, the stem continues to grow through the brush, leaving the fruit to develop as capsules clustered around the stem. It takes a long while for the fruit to develop, and one can follow back along the stem to see two or three

lots of fruit representing as many years' flowering. The Banksia on the other hand has a brush made up also of a large number of flowers, but arranged on a small branch which does not continue to grow through the brush. When the flowers die off, most of the flower remains, and the fruit develop in wooden nodules which later split, releasing winged seeds.

Most familiar Banksia (named after Sir Joseph Banks) is the RED HONEYSUCKLE (*Banksia serrata*). This is a gnarled tree generally of small size, growing in poor sandy soil or in sandstone country. The leaves, up to 9 inches in length, are very regularly and evenly toothed along the edges, and the veins move out from the central rib in parallel lines to the margins of the leaf. The leaf is hard and glossy on the upper surface. The bark is black, thick, and deeply furrowed.

The WHITE HONEYSUCKLE (*Banksia integrifolia*) is a small to large tree, often growing along the foreshores of the coastal beaches. It is straighter than the red honeysuckle, and its leaves are shorter (3 to 4 inches long), much narrower, and have a smooth edge, rolled under. The leaves also are pointed.

*BANKSIA MARGINATA* (also known as honeysuckle) is a small tree, the leaves being abruptly cut across at the tip, the edges curved under, and slightly toothed along the edges. The leaves are only 1 to 2 inches long. The HEATH-LEAVED HONEYSUCKLE (*Banksia ericifolia*) is only a shrub with narrow leaves  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long. The flowers on this shrub are orange in colour, and are more commonly mistaken for a bottle-brush than any of the other species of Banksia.

The Banksias are quite good for burning, the dried leaves and the dried flower heads making quite good kindling. Particularly along the coast, the white honeysuckle may be the only wood offering for a picnic fire.

The *Callistemon* genus comprises mostly shrubs, although a few do grow into reasonably large trees. They are protected wild flowers, and accordingly should not be picked, or the bushes damaged in any way. Nowadays, many people are growing them in their gardens, and as they are really beautiful when out in flower, this is something that could be encouraged. All species have the typical red or crimson flowers growing around the stem, and their leaves are generally straight, narrow and about 2 to 5 inches long. The species are very similar in appearance, but are well illustrated and described in the book "Wild Flowers of Australia", by Thistle Harris.

## THE CASUARINAS (SHE OAKS)

THE Casuarina genus is quite an important one in the Australian bush. The name "Casuarina" was given because of the fancied resemblance of the foliage to the Cassowary (known to Zoologists as *Casuarus*). There has been a lot of discussion around the origin of the term "She-oak". One early writer states that the aboriginal name for the tree was "she-look" which may have been changed by the early settlers to "She-oak". More likely, however, is the fact that the timber resembles in grain the English Oak, with the prefix "she" denoting paleness in colour, or inferiority.

The trees of this genus are known by the fact that their leaves are reduced to mere scales arranged at intervals of about half an inch along the branchlets, and the branchlets themselves are doing the job of the leaves. In some respects the foliage has the appearance of pine needles. In the Casuarina, the male and female elements are not present in the same flower. Instead the male flowers grow at the end of the branchlets in large numbers (sometimes giving the whole tree an orange to rusty colour) with the female flowers in smaller numbers lower down the stems.

The fruit of the Casuarina looks something like a pineapple about an inch long. The seeds are contained in little pockets on the surface.

The most important species in the Group is the RIVER OAK (*Casuarina cunninghamiana*). This is a protected tree growing along the banks of fresh water creeks and rivers inland. It is a large tree, and its importance lies in the fact that these trees protect the banks of the stream from erosion. Unfortunately many thoughtless people kill these trees by lighting fires against the trunk. The wood is quite good for firewood, but care should be taken when collecting wood from the banks that erosion is not encouraged by your action.

Another Casuarina of importance is the SWAMP OAK (*Casuarina glauca*), which grows along the foreshores of salt water lakes and tidal waters. The leaves are reduced to about 9 to 16 small scales at each joint in the branchlet (the River Oak has 6 to 8). The tree will grow in salty situations where other trees will not grow.

Casuarinas, which do not grow next to water (whether fresh or salt), can generally be bracketed together as "Forest Oaks". The most common species are *Casuarina torulosa* (with oval fruit about  $\frac{3}{4}$  inch in diameter, 4 to 5 scales on the branchlets);



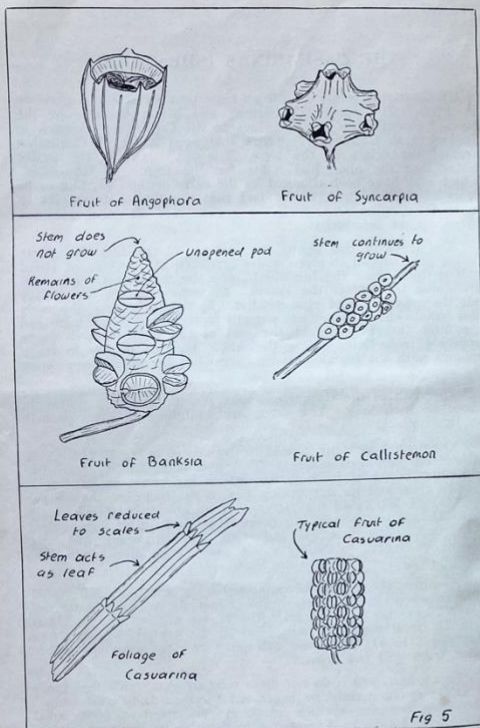


Fig 5

*Casuarina suberosa* (also known as Black She-oak, large cylindrical fruit over an inch in diameter, 6 to 8 scales on the branchlets); *Casuarina stricta* (Drooping She-Oak, or Mountain Oak—always found on dry ridges and rocky soils; fruit about 1 inch in diameter, scales number 9 to 16).

The size of the fruit varies between the different species. Of those mentioned, *stricta* has the largest—from 1½ to 2 inches long. *Torulosa* is next at 1½ inches, then *suberosa* just under the inch, *glauca* at ¾ inch, and *Cunninghamiana* smallest at ½ inch.

Generally speaking, a *Casuarina* grove makes a good site for a camp. Besides the pleasant noise of the wind through the foliage, the wood is fair to burn; the dried foliage makes it easy to start your fire, and the dried foliage on the ground often puts a bit of spring into your night's rest.

## THE WATTLES

THE earliest settlers in Australia, in choosing material with which to make their "wattle and daub" huts, chose a tree now called the saw-leaved callicoma, and they called this the "Black Wattle". This particular plant has fluffy flower balls, and all other plants with similar flowers were also called wattles. The botanists decided that all these others were members of the one genus, which they named *Acacia*, and as by now the name "wattle" was being used for these plants all over Australia, it was decided to keep this name only for the *Acacias*.

The *Callicoma* is not an *Acacia*, so that ironically enough, the original "Black Wattle" is no longer regarded as a wattle at all.

There are many hundreds of species of *Acacia*, ranging from small shrubs only a foot or two high, to tall trees, and they occur all over Australia. In all cases the fruit is in the form of a pea-type pod, which, however, varies considerably in appearance, size and shape. The flowers are yellow, and may occur in globular heads, or cylindrical spikes.

If you examine a wattle flower head, you will see that it is made up from a number of tiny flowers with very small petals but extra long stamens—all grouped closely together, so that the yellow stamens give the appearance of there being only one flower in each head. You will see that this is so by examining a wattle bud just on the point of bursting, or perhaps pulling a wattle flower head to pieces with a needle.

*Acacias* have either a bipinnate leaf, or else they have what appears to be a simple leaf. Strangely enough, all seedling wattles have a bipinnate leaf, but in most species, the leaf stalk begins to flatten out and become a leaf, while the feathery part disappears. This type of leaf is called a "phyllode" to distinguish it from a normal leaf. It is not uncommon to see a wattle seedling with both types of leaves, and to find some leaves half phyllode and half bipinnate. Sometimes when a mature tree with phyllode foliage is cut back severely, the new growth will appear as the bipinnate leaf or a mixture of both.

Wattle trees are generally susceptible to a large number of pests which burrow into the wood or form "galls" on the branches. While the flowers are sweet scented, the green wood and the green pods when crushed, give off an unbearable odour.

The *Acacias* are best known in the Western areas of N.S.W., where individual species have common names such as "Mulga", "Myall", "Cooba", "Brigalow", "Yarran", "Gidgee", "Ironwood", etc.

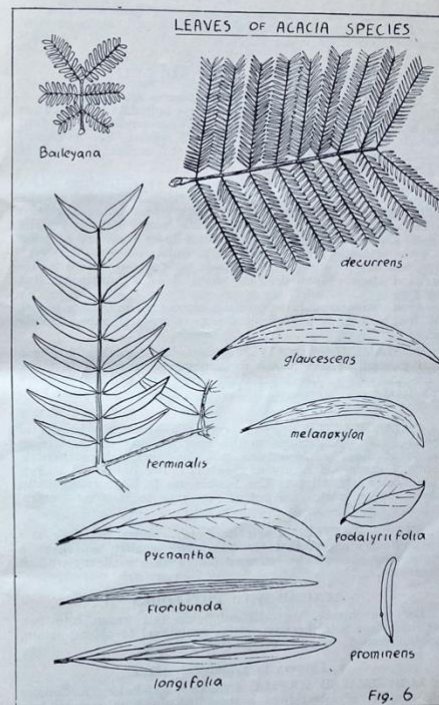


Fig. 6



The species of wattle trees will be discussed according to the nature of the mature foliage—first those with bipinnate leaf, secondly those with phyllodes.

#### ACACIAS WITH BIPINNATE LEAF

**BLACK OR GREEN WATTLE.** There are a number of closely-related species which the early botanists regarded as different varieties of the one species—*Acacia decurrens*. Modern botanists have classed them as separate species, but to Scouts the differences are not great enough to recognise them as different species.

What is now known as *Acacia decurrens* (Sydney black wattle) is a small to medium tree of rapid growth (and equally rapid death). It occurs in groves where other timber has been cleared, and also in clearings along the banks of creeks. The bark is green, with dark ridges running down from the junction of each branch. Flowers are in globular clusters—not very large, but heavily scented. Seed pods are narrow—3 to 4 inches long and black. When dry, the wood gives a quickly burning fire.

*Acacia mollissima* (green wattle) closely resembles the above, but the leaflets are much shorter, wider, and more closely packed.

**COOTAMUNDRA WATTLE** (*Acacia baileyana*). This is a small to medium tree grown for ornamental purposes in many towns and cities. The leaflets are very tiny, and form silvery grey leaves only about an inch long. Flowers in round balls of deep yellow.

**CEDAR WATTLE** (*Acacia terminalis*—formerly known as *Acacia elata*). A medium to tall tree growing in the deeper gulleys of the Blue Mountains and elsewhere, where there is plenty of shade and plenty of moisture. The individual leaflets are almost 2 inches long. The flowers are in large round balls, pale yellow in colour, and not as numerous as in other wattles. Pods are straight—up to  $\frac{1}{2}$  inch broad.

**SILVER WATTLE** (*Acacia dealbata*) similar to Black and Green Wattles except that the leaves are smaller, and have a greyish blue shade. The youngest leaves have a silvery-whitish appearance.

#### ACACIAS WITH PHYLLODES

For convenience, we will subdivide this group into two sections—those with flower heads in cylindrical or oblong spikes, and the second section with globular clusters.

##### a. Flowers in cylindrical spikes.

**LONG-LEAFED WATTLE** (*Acacia longifolia*). This occurs in a number of forms from a spreading shrub to a small tree

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growing in the sandstone areas close to the coast. The leaves are 4 to 6 inches long and about 1 inch wide, with two or more prominent parallel veins. It is also known as the Sydney golden wattle.

**SALLY WATTLE** (*Acacia floribunda*). Growing close to water courses, this small tree has long slender leaves about 4-6 inches long, but only about  $\frac{1}{2}$  inch wide. The markings on the leaf are similar to the long-leaved wattle.

**MULGA** (*Acacia aneura*). A valuable fodder tree in the far western parts of N.S.W., this tree is not known to the city dwellers. The leaves are from 1 to 4 inches long, and from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch wide.

**COASTAL MYALL** (*Acacia glaucescens*). This occurs on the coast and mountain slopes. It is a medium tree, with curved and pointed leaves 4 to 5 inches long and 1 inch wide. The veins are not prominently marked, and the leaves have a greyish appearance.

##### b. Flowers in globular clusters.

**QUEENSLAND SILVER WATTLE** (*Acacia podalyriifolia*). This also has been planted widely for ornamental purposes, but may be seen in the bush close to civilisation. Leaves are 1 inch long, and  $\frac{3}{4}$  inch wide. Mature leaves have the same colour as the Cootamundra wattle, but the young foliage has a white powdery appearance.

**GOSFORD WATTLE** (*Acacia prominens*). A medium to tall tree with leaves 2 inches long and  $\frac{3}{4}$  inch wide and of blue-grey colour. Very showy when out in bloom.

**BLACKWOOD** (*Acacia melanoxylon*). A tall tree favouring rich soils this gives plenty of shade. Leaves are a pale green about 4 inches long,  $\frac{1}{2}$  inch wide, and curved at the end.

**BROAD-LEAVED WATTLE** (*Acacia pycnantha*). Originally a native of South Australia, this is often seen in and adjacent to towns and cities. Leaves are 5 to 6 inches long and over an inch wide. Stems are very thick.

This list does not exhaust the wattle family, as there are many hundreds of species of *Acacia*. We do hope that the details given will aid in the identification of some of the common species of wattle.

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#### Chapter 8

### THE BRUSH FOREST TREES

**BRUSH** forests are also termed "rain" forests, and as the name implies they occur in regions of high rainfall, though the actual rainfall varies greatly according to whether they are located in tropical or temperate zones. They consist of closely spaced, dense vegetation composed mainly of trees, shrubs, vines and herbaceous plants. Rain forests abound in plants known as epiphytes, which grow on trees without harming them; that is they are not parasites. Examples of epiphytes are orchids, ferns, lichens and mosses.

Several species of trees encountered in the brush have what is termed a buttressed stem, consisting of flattened extensions of the roots up the base of the trunk, at ground level.

Many different species of trees occur in New South Wales brush forest, far too numerous to describe here. A few interesting species which you might recognise are set out here.

#### SILKY OAK

There are two main species of trees known as Silky Oak, both of which derive their common names from the timber they produce. It is rather satin-like or silky in appearance, having a figure similar to that of the true Oaks. The two species are *Grevillea robusta* and *Orites excelsa*.

*Grevillea robusta* is frequently grown in gardens as an ornamental, being fast-growing, tall and attractive, producing bright golden blooms in the late Spring. Although it occurs naturally in coastal brush forests from the Clarence River to Queensland, it does well under the much drier conditions in western parts of the State. The leaves are pinnate, much divided and rather fern-like. The fruits are boat-shaped, splitting along one side to release the seeds when ripe.

*Orites excelsa* derives its name from the Greek *orites*, a mountaineer and the Latin *excelsa* meaning tall. The name is very descriptive as it does grow at high elevations in the mountain range on the Queensland border, that is the Macpherson Range. It grows in scrub from the Hunter River northwards. The leaves are very narrow and long, the edges sometimes being toothed. The flowers are not colourful as in *Grevillea robusta*, and the fruits are similar to those of the latter, although about 4 times their size.

#### RED CEDAR

The timber produced by Red Cedar (*Cedrela australis*), is probably the most valuable in Australia, and as a result the

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demand by far exceeds the supply. The reasons for its popularity are its rich red colour, attractive figure, light weight, ease of working, and wonderful durability. Posts used as fencing on north coast farms many years ago are practically as sound to-day as they were when first cut.

Trees are large, deciduous, and have a greyish brown scaly bark. The leaves are pinnate having 4 to 8 leaflets. Flowers are produced in a branched arrangement, termed a panicle, at the ends of shoots. Fruits are rounded oblong in shape and split into 5 valves when ripe to shed the seeds which are winged at each end.

Red Cedar grows in brush forests from Milton in the south to the Queensland border in the north. There are still a few large trees in deep, inaccessible valleys, but most of the oldest specimens have been felled, the stumps still remaining well preserved where they stood. To-day, due to the shortage of Red Cedar, these stumps are often used and they yield very beautifully figured wood.

#### HOOP PINE

(*Araucaria cunninghamii*)

This tree belongs to the coniferous group, and in common with pines, it bears cones. The trees are tall and have a very fine appearance. The foliage is soft green in colour when the leaves are young, becoming darker green as they age. The dark brown bark is unusual and the name "Hoop Pine" is derived from its characteristic arrangement. If you observe the lines dividing the bark surface you will notice that they are cross-wise, dividing the trunk into sections. Thus there is a series of "hoops" one above the other encircling the trunk. The flowers of this tree are produced in cones which split open when dry to shed the seeds.

Hoop Pine is found in forests on the North Coast of New South Wales and in Queensland. It grows best in rich soil in brush forests, while there are a number of plantations in which Hoop Pine has been planted solely. The timber so produced is very valuable and is used in manufacturing butter boxes amongst many important uses.

Another pine which is commonly planted along beaches in New South Wales is very similar to Hoop Pine. It is the Norfolk Island Pine (*Araucaria excelsa*) which is a native of Norfolk Island, off the east coast of Australia.

#### COACHWOOD

(*Ceratopetalum opetalum*)

Coachwood is an important timber tree which grows in coastal brush forests of New South Wales, from Milton south of Sydney to the Queensland border. It is sometimes called Scented Satinwood because of the scented nature of the wood.

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which has a sweet caramel-like odour. Another name for it is Leather Jacket, due to the tough, leathery bark. The bark is quite characteristic, having light grey patches and hoops or ridges on the surface encircling the trunk.

Coachwood may reach a height of 70 feet and the trunk may be 2 feet in diameter. The leaves are about 2½ inches to 5 inches long, elliptical in shape, the edges being finely notched like the teeth of a saw. The flowers resemble those of the well-known Christmas Bush, being cream and changing to pink as the fruit is formed, the final size reached being about twice that of the Christmas bush flower.

#### CABBAGE TREE PALM

In damp gullies, very often forming pockets of brush between dry eucalypt forest, are found palms, the common one along the New South Wales coast near Sydney being *Livistona australis*, the Cabbage Tree Palm. The common name has arisen from the cabbage-like growth of the leaves which are arranged close together at the top of a long stem or trunk, covered with the remains of former leaf-bases. The rounded fruits are produced on much branched stems in the angles of the leaves.

#### FIGS

A group of trees known as "figs" is quite typical of brush forest, though some kinds, for example the Port Jackson Fig and Moreton Bay Fig, are more typical of country adjoining expanses of water, than they are of dense brush forest. One of the chief features of this group is the extensive development of aerial roots, or roots arising from the trunk above ground level. The leaves are typically thick, dark green, upper surfaces being fairly glossy and under surfaces dull. The fruits are fleshy, but are rounded and smaller than the commonly cultivated variety.

#### BRUSH BOX

Brush Box, *Tristania conferta*, grows naturally in coastal scrub from Port Stephens, N.S.W., to Bowen in Queensland. It is common on the edge of the brush forests where they verge on the dry eucalypt forests. Trees may reach a height of 120 feet, the bark on the main trunk being grey brown and scaly, resembling that of a Box type eucalypt. On upper branches the bark becomes smooth, being pinkish-brown and sometimes quite green in colour.

The leaves are dark green above and paler beneath, being crowded together at the ends of branchlets. The fruits are similar to those of the eucalypts, being fairly large, shaped like a cone, and having three valves level with the top of the fruit, which split open when the fruit opens, releasing the seed.

Brush Box is frequently planted as a street tree, though it is then usually severely pruned, losing its characteristic form or shape. The timber it produces is often used for flooring, its main advantage being that it does not splinter.

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#### Chapter 9

#### MISCELLANEOUS AND INTRODUCED TREES

IN this chapter, we will discuss two very important native trees which could not be grouped under any of the headings already covered, together with a number of trees which are not native to New South Wales, but have been introduced either from other parts of Australia or from other parts of the world.

Trees which have been introduced from countries outside Australia are referred to as "introduced" or "exotic" species. Examples of exotics are Camphor Laurel, Jacaranda, Pepper Tree, Oaks, Willows, Poplars, Elms, Plane Trees, Coral Trees, Pines, Cyresses, Cedars, and so on. Most of them have been introduced for their beauty rather than from their usefulness from the timber point of view.

Examples of trees introduced from other States of Australia are the Flowering Gum of Western Australia, Sugar Gum of South Australia, Tasmanian Blue Gum from Tasmania, and Queensland Nut Tree from Queensland.

Several of the exotics are regarded as useful in pastoral regions. For example the Pepper Tree (*Schinus molle*) is a very valuable shade tree, being very commonly planted around sheep yards and near old homesteads. The Pines (*Pinus* species), Cyresses (*Cupressus* species) and Camphor Laurel (*Cinnamomum camphorum*) are often planted as windbreaks and shelter belts.

#### NATIVE TO NEW SOUTH WALES

##### Cypress Pine (*Callitris* species)

In most parts of New South Wales there are trees known as "Cypress", the most important ones being White, Black and Brush Cypress Pine which all grow into large enough trees to produce timber for flooring or weatherboards and various other uses. They are native trees and should not be confused with the imported true cypress (*Cupressus* species), such as Pencil Cypress and Monterey Cypress which are frequently grown, either in gardens in the case of the former, or on farms as windbreaks in the case of the latter.

Both White and Black Cypress Pine grow in many parts of the Western Slopes and Plains of New South Wales, mainly on sandy soil. The main area where they are cut is in the Pilliga scrub. Brush Cypress Pine grows in coastal brush forests, though it is not present in very extensive quantities.

The leaves are very small and scale-like, the colour being greyish green in White Cypress Pine and green in Black Cypress Pine. The names "white" and "black" are used because the trees differ from each other in the appearance of their trunks, White Cypress Pine being greyish to whitish coloured, and Black Cypress Pine having dark grey to almost black bark.

The fruits of this group of trees are in the form of rounded cones, the seeds being shed when the cones dry and split open. The tree contains a very pleasant smelling oil in the leaves, bark and wood, the latter having a very pleasant odour when burned.

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#### Kurrajong.

Those who live on the Western Slopes will know the Kurrajongs, which are so highly valued in pastoral areas. These trees are known as *Brachychiton populneum* botanically and are closely related to the beautiful Illawarra Flame Tree of the coast.

Kurrajongs are handsome trees with medium foliage, having bell-shaped white flowers with purple markings, the fruits being pods which split along one side to release the seed when ripe.

These trees are useful as well as being decorative, for they provide shade, and in times of drought can be lopped to provide fodder. They are deep rooting and so allow grass or wheat or lucerne to grow right up to the trunk.

#### INTRODUCED TO NEW SOUTH WALES

##### White Cedar (*Melia azederach*)

This tree has been planted so extensively in New South Wales that it may appear to occur naturally in many different environments. It originally extended from Sydney to Queensland growing in brush forests, but has since been planted in many parts both along the coast and beyond the Dividing Range.

The leaves are deciduous, twice pinnate, the edges of leaflets more or less toothed, light green in colour. The flowers are pale mauve, in loose groups termed panicles. The fruits are almost globular, pale in colour, often yellowish and slightly fleshy.

Trees are planted for shade, the fruits being poisonous to pigs, but apparently harmless to poultry. The timber is pale brown with a prominent figure due to the annual rings. It is sometimes used in cabinet work.

##### Radiata Pine.

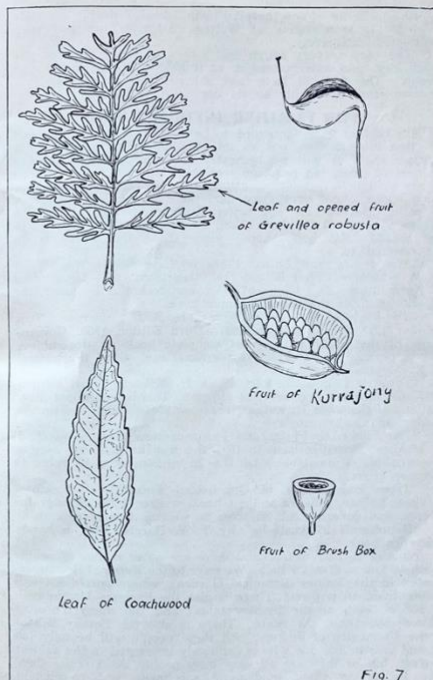
Radiata Pine or *Pinus radiata*, as it is known botanically, is a coniferous tree which has been planted extensively in Australia to provide an answer to our shortage of native softwoods. Plantations of this species and of a few closely allied pines are to be seen in many parts of New South Wales, for example at Banyabba (between Grafton and Casino) and Port Stephens on the north coast, near Jenolan, and Orange on the Central Tablelands, Tumut and Mount Stromlo (near Canberra) in the south.

The leaves are dark green, long and needle-like, while the cones are quite large and lopsided in shape. The bark is thick, deeply ridged and dark brown in colour. A resin is found throughout the tree, giving a pleasant pine odour to the various parts. The wood from this tree is used in many ways, for example, for weatherboards and flooring, box and case manufacture and for paper pulp. Trees have been grown in Victoria and Tasmania by Paper Manufacturers for the sole purpose of providing the raw material for paper pulp.

##### Flowering Gum.

The Flowering Gum, *Eucalyptus ficifolia*, is of particular interest to Scouts, its fruit being used for the traditional "woggle". It is one of the most decorative of eucalypts, the flowers being well displayed and colourful, from bright red to pale pink, good

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specimens being almost covered with blossom during the late Spring. It is a native of Western Australia but has been cultivated extensively.

The bark is very rough and somewhat scaly, both on the main stem and outer branches, as it belongs to the Bloodwood group. The fruit is large and shaped like an urn or bell, lending itself admirably to its use as a "woggle".

#### FOR FURTHER INFORMATION

THIS booklet is not intended to be a treatise on forestry and tree identification, but an introduction to the subject. For further study it will be necessary to refer to books on the subject of trees, but unfortunately there are not many suitable books written in non-technical language. Again, the demand for such books is not very great, and these books tend to go out of print. Nevertheless, the better Municipal libraries will have copies of some of the books, and occasionally they turn up in the second hand book shops. Here are a few which might be referred to.

"The Honey and Pollen Flora of New South Wales", by W. A. Goodaere. First Edition, 1938, reprinted 1955—Department of Agriculture. This book covers in non-technical language, the identification of the more common trees.

"The Trees of New South Wales", by R. H. Anderson. First Edition, 1937, Second Edition, 1947—Third Edition, 1958. Government Printer. This is the most complete book on the subject, but is, perhaps, too complete for general use. Good illustrations of Eucalyptus fruits.

"Forestry Handbook—Part 2", J. H. Maiden. First Edition, 1917—Government Printer—Out of print. This has excellent illustrations of the more important trees considered from the timber, fodder and utility angle.

"The Flowering Plants and Ferns of New South Wales", J. H. Maiden. Issued in parts in 1895, this has the best collection of coloured plates available. Of the 28 illustrations, 12 refer to common trees.

"Trees and Timber of Queensland Forests"—G. Knight—Revised Edition, 1961. Excellent book, written by a Scouter for Scouts, and covering N.S.W. trees as well as Queensland.

"Naturecraft in Australia" by T. Y. Harris. 1956—a handy reference book.

As well as book references, there are other bodies of people to whom you may go for help. We refer to the National Herbarium located in the Sydney Botanical Gardens, where specimens will be identified on request. There is also the Forestry Commission of N.S.W. both at the Sydney office, and the many Forestry Offices throughout the State. There is also the Botany School of the University of Sydney. All these people will be only too pleased to help any one who is genuinely interested in the subject of trees, but as they are all very busy people, don't waste their time by giving them inadequate specimens and insufficient information for identification.



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