V. NATIVE VEGETATION

The native timber consists largely of mallees which are small eucalypts with several stems arising from underground tubers known as "mallee roots". This type of vegetation is widespread in the semi-arid land across the southern part of the continent. Within Victoria mallees are largely confined to the north-west which is consequently known as the "Mallee".* The multi-stemmed eucalypts form dense thickets which are tedious to traverse, even on foot, so that a large proportion of the area was avoided by the aborigines, the explorers and the early settlers.

In the bulk of the region the timber has been removed to make way for farms. It has been possible, however, to assess the original communities in practically all of the cleared areas because of the wealth of native vegetation remaining, particularly along road easements and in government reserves.

The dominant species recognized are listed in Table 8. There are eleven mallees. They usually occur in mixed stands in which the individual species can be identified only by a close examination of leaves, fruits and buds. Local descriptive terms such as "big" or "small" mallee are generally used but these are of little help in identifying the species because each varies greatly in habit. The colour of the roots which are grubbed and sold as fuel is more helpful and terms such as "white" or "red" mallee are used on this basis.

There are five eucalypts other than mallees, namely, red gum *(E. camaldulensis),* black box *(E. largiflorens), yellow* gum (*E. leucoxylon),* peppermint box *(E. porosa)* and brown stringybark *(E. baxteri).* Trees other than eucalypts include Murray pine *(Callitris preissii),* belar *(Casuarina cristata),* buloke *(Casuarina luehmanii)* and sandalwood *(Myoporum plalycarpum).*

The dominant species listed in Table 8 include 15 shrubs and 3 grasses which have been used to distinguish the various communities on a reconnaissance scale. There is a great wealth of other species as shown by Zimmer (1937) who has recognized 449 indigenous species within 4,000 square miles in the north-western comer of the State.

The most suitable classification of the native vegetation on a regional scale is based on structural criteria. Several structural units have been recognized to encompass the wide variation in habit of the mallees, and also in the nature of their understorey, namely mallee, big mallee, savannah mallee, scrub mallee, and mallee heath. Units in which mallees are absent or infrequent include grassland, savannah, woodland, shrub-steppe woodland, shrub steppe and heath. The structural units are listed below, defined where necessary and described in terms of their dominant species and their relationships to soils and topography.

One of the main factors governing the distribution of the various communities is soil, and some types of vegetation are restricted to a narrow range of soils. Due to the general lack of a drainage system, topography is not a major factor, apart from its effect in governing the soils pattern. The variation in climate across the area has little effect on the distribution of either the dominant species (see Table 8) or the structural units (see however grassland and heath below).

Table 8 – Dominant native species and their distribution within North-Western Victoria

Mallee eucalypts

Oil mallee; *E. oleosa* F. v. M.; throughout
Horned oil mallee; *E. oleosa var. glauca* Maiden; throughout
Dumosa mallee; *E. durnosa* A. Cunn.; throughout
Yellow mallee; *E. incrassata* Labill.; throughout
Angular mallee; *E. angulosa* Schauer; throughout
White mallee; *E. gracilis F.* v. M.; throughout
Red mallee; *E. calycogona* Turcz ; throughout
Hooked mallee; *E. leptophylla* Miq.; throughout
Bull mallee; *E. behriana* F. v. M.; south
Capped mallee; *E. pileata* Blakeley ; north-west
*Black mallec; *E. porosa* F. v. M. Miq.; south-west and central west

Eucalypts other than mallees

Red gum; *E. camaidulensis* Dehn; throughout.
Black box; *E. largiflorens* F. v. M.; throughout.
Yellow gum; *E. leucoxylon* F. v. M.; Wycheproof land system and along creeks in south.
*Peppermint box; *E. porosa* F. v. M. Miq.; south-west and central west.
Brown stringybark; *E. baxteri* Maiden and Blakeley; Big Desert land system.

Trees other than Eucalypts

Murray pine; *Callitris preissii* Miq.; throughout.

* As a noun “mallee” is sued in three senses, referring to structural units of vegetation, or to species or to areas. In this bulletin it is used most frequently to connote structural units.

Belar; *Casuarina cristata* Miq,; north and centrc.
Buloke; *Casuarina luehmanii* R. T. Baker; south and center.
†Sandalwood; *Myoporum platycarpum R.* Br.; Millewa land system.

Shrubs

†Sandalwood; *Myoporum platycarpum* R. Br.; throughout.
Rosewood, cabbage bush; *Heterodendron oleifolium* Besf.; throughout.
Dillon bush; *Nitraria schoberi* L.; throughout.
Lignum; *Muehlenbeckia cunninghamii* F. v. M.; throughout.
Tea tree; *Leptospermum coriaceum* Chiel; throughout.
Broombush; *Melateuca uncinata* R. Br.; throughout.
Scrub pine ; C*allitris verrucosa* R. Br.; throughout.
Broom-heath myrtle; *Baeckia behrii F.* v. M.; throughout.
Honeysuckle; *Banksia marginata* Cav.; Big Desert land system.
Slaty sheoke; *Casuarina muelleriana* Miq.; Big Desert land system.
Black boy, yacca; *Xanthorrhea* spp.; Big Desert land system.
Heath; *Epacris* spp.; Big Desert land system.
Bladder saltbush; *Atriplex vesicaria* Heward *ex* Benth; north and center.
Bluebush; *Kochia pyramidata* Bth.; north and center.
Samphire; *Arthrocnernum halocnemoides* Nees ; north and center.

Grasses

Spear grass ; S*tipa spp.;* throughout.
Wallaby grass; *Danthonia* spp.; throughout.
Porcupine grass; *Triodia irritans R.* Br.; throughout.

* Occurs both as a mallee and a single-stemmed tree.
†Occurs both as a tree and a shrub.

Some communities are of limited value as soil indicators, for example mallee and pine-belar-buloke woodland in several land systems, or big mallee, pine-belar woodland, grassland and savannah in the Millewa land system. With minor differences these communities occur on the same wide range of soils. Their distribution appears to be random and in a state of flux, suggesting that the climate of recent geological times has not been sufficiently constant to allow one, or other of the communities to become dominant on a certain narrow range of soils. This view agrees with the conclusions reached in soil studies (see soils chapter), namely that there have been fluctuating climates in recent geological times.

In many of the structural units listed below there is no separation of the dominant species into, discrete floristic groups. Such, a separation is frequently of little help in indicating soil conditions.

Plate 10 – Mallee vegetation on a heavy plain between Birchip and Beulah in the Culgoa land system

Plate 11 – Big mallee vegetation. Remnants on a plain north of Karawinna in the Millewa land system

Plate 12 – Savannah mallee of angular mallee, horned oil mallee and porcupine grass, south of Hattah in the Central Mallee land system

Mallee consists of a dense stand of mallees in which there are, on the average, several thin stems arising from each root (Plate 10). The understorey is sparse and the canopy is generally between 9 and 15 feet high.

Mallee is the most widespread structural unit, occurring in several land systems on a wide range of soils and topographic situations. It contains all of the 11 species listed in Table 8 and a stand typically contains several intermingling species. Because these appear similar at a distance, it is difficult to recognize discrete floristic units.

Big Mallee is composed of a stand of mallees in which there is an average of only three or four stems arising from each root and in which the stems are relatively thick, usually more than 6 inches in diameter, (Plate 11). The understorey, is sparse and the canopy is usually about 20 feet, high.

The mallees are those listed in Table 8 with the possible exception of angular mallee (*E. angulosa*), and capped mallee (*E. pileata*). As in "mallee" a stand typically contains several species and their arrangement into separate associations is difficult to determine.

Big mallee occurs widely in the Millewa land system on a broad range of soils and topographic situations, whilst in several other land systems it occurs to a limited extent, mainly on light clay plains.

Plate 13 – Scrub mallee of angular mallee, scrub pine, tea tree and broombush, on an interdune plain in the Big Desert system

Plate 14 – Remnants of a pine woodland. The trees have been thinned out and the grass has thickened up. Interdune plain the Timberoo Reserve, Central Mallee land system.

Savannah mallee contains mallees with a lower stratum of porcupine grass *(Triodia irritans)* (Plate 12). Typical stands contain several mallee species, with angular mallee numerically dominant. Savannah mallee is restricted to sands of low fertility. In the Central Mallee, Tempy and Hopetoun land systems, it is widespread on reddish yellow sands of Group D, usually on upper dune slopes, whilst in the Berrook land system it is the dominant community on white deep sands on dunes, jumbled dunes and intervening plains.

Scrub mallee consists of mallees with a dense lower stratum of shrubs (Plate 13). Stands usually contain a mixture of mallees with angular mallee predominant.

This structural unit is most widespread in the Big Desert and Berrook land systems where it occurs on all parts of the landscape, on white deep sands and white sands of Group D. The shrub stratum contains several intermingling species among which tea tree *(Leptospermum coriaceum),* scrub pine *(Callitris verrucosa),* broom-heath myrtle *(Baeckia behrii),* and broombush *(Melaleuca uncinata)* are prominent.

Scrub mallee in which broombush is the predominant shrub occurs to a limited extent in the Central Mallee and Tempy land systems on dunes with reddish yellow sands of Group D, and on the upper slopes of hummocks and ridges where the soils are reddish yellow sands of Group D and sandy loams, of Group B.
Shrub-steppe mallee contains mallees with a dense understorey of salt-tolerant shrubs. It occurs to a limited extent on plains in the Raak and Millewa land systems. White mallee (*E. gracilis)* is the predominant mallee.

In the Raak land system bladder saltbush *(Atriplex vesicaria)* forms the shrub stratum on soils which are saline at depth but not at the surface, whilst samphire *(Arthrocnemum halocnemoides)* occurs where the soils are saline to the surface.

In the Millewa land system saltbush and bluebush *(Kochia pyramidata)* form the shrub stratum, usually in separate associations, on those sandy loams of Group A which have lime at the surface.

Grassland occurs in many land systems (Plate 27). Spear grasses *(Stipa spp.)* and wallaby grasses *(Danthonia spp.)* appear to have been the original dominants in all areas. Although swards generally contain several other species, these could well be invaders following overgrazing.

The proportion of native grassland to timber increases -as the supply of soil moisture decreases. Thus, towards the south, native grassland is comparatively rare and confined to light clay plains, whereas in the Millewa land system it is widespread on soils ranging in texture from sand to clay.

Savannah occurs mainly in the Millewa land system on a wide range of soils and topographic situations. The tree species are a mixture of pine, belar and sandalwood, whilst various mallee species are also scattered, throughout. The original dominant grasses appear to have been spear and wallaby grasses.

Woodland The most widespread woodlands contain pine, belar or buloke which usually occur in mixed stands of pine and belar in the northern, pine, belar and buloke in the central, and pine and buloke in the southern parts of the region (Plate 14). These woodlands are most widespread in the Millewa land system. Elsewhere they occur mainly as occasional patches. The latter are more common than average on local prominences-for example on lunettes or on the large ridges at Walpeup and Yarrara, indicating that their, distribution may be influenced in part by aspect.

Although woodlands of pine, belar, or buloke occur on a wide range of soils and topographic situations, they are regarded as indicators of good farming country, probably because the country on which they predominate contains dunes composed of the more fertile red sands. In addition they are not found to any extent on the relatively "droughty" sandy loams of Group A which have lime at the surface.

Much less widespread are woodlands of red gum (Plate 33) and black box (Plate 26). These trees occur singly or in combination in the Lindsay Island and Tyrrell Creek land systems, along the banks of rivers, creeks and lakes, mainly on grey heavy clays. Red gum occupies the moister sites.

Shrub steppe woodland Occurs to a limited extent as trees with an understorey of salt-tolerant shrubs. Black box with an understorey of bladder saltbush or old man saltbush *(Atriplex nummularia)* occurs on heavy clays which are periodically flooded in the Lindsay Island land system. Belar with on an understorey of bluebush is found on plains in the Millewa. land system on sandy loams of Group C.

Shrub-steppe Samphire is dominant on soils which are saline to the surface on plains in the Raak land system (Plate 29). Stands of bladder saltbush occur on soils which are saline at depth but not at the surface on plains in the Raak and Ned's Corner land systems. Bluebush is dominant in the Ned's Corner and Raak land systems on plains and lunettes, where the soils are sandy loams of Groups B and C.

Heath is confined to the Big Desert land system where it occurs widely on all landscape positions, on white deep sands (Plate 20). The dominant shrubs are diverse, including honeysuckle *(Banksia marginata),* scrub pine, tea tree, blackboy *(Xanthorrhea spp.),* slaty sheoke *(Casuarina muelleriana),* and heath *(Epacris spp.).* Porcupine grass also occurs scattered throughout the stands.

Within the region climate appears to control the northern limit to the occurrence of heath which is not found north of approximately the 13-inch isohyet.

Mallee heath consists of heath with scattered mallees. It occurs interspersed with heath in the Big Desert land system on all landscape positions on white deep sands, and on interdune plains where the soils are white sands of Group D. The shrub species are the same as those in heath whilst angular mallee *(E. angulosa) is* the predominant mallee.