

No. 83.—Many-flowered mallee.  
(*Eucalyptus Cooperiana* F. Muell.)

A—Branchlets with leaves and flower buds; B—Flower buds (enlarged); C—Flower bud in section (enlarged).  
D—Anther (much enlarged—between Esperance Bay and Eyre—Hammond); E—Flower buds—near Mount Boyatup,  
Gardner 12907; F—Flower buds. G—Fruits; H—Section of fruit—Thomas River, Gardner 12942.

# TREES

## of Western Australia

By C. A. GARDNER

### No. 83—THE MANY-FLOWERED MALLEE

(*Eucalyptus Cooperiana* F. Muell.)

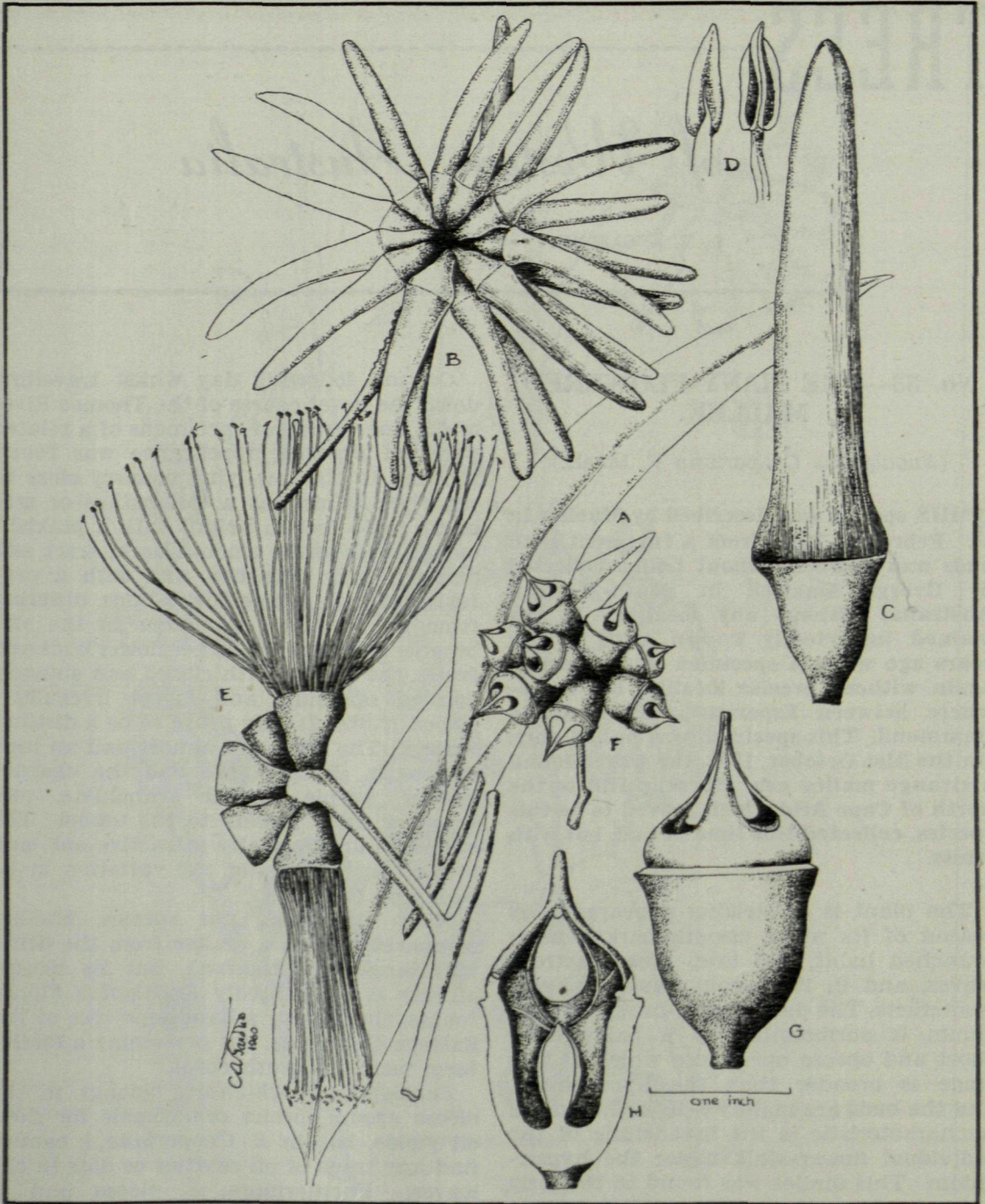
**T**HIS species was described by Mueller in February, 1880, from a fragment with buds and flowers without fruits, collected by George Maxwell in South-Western Australia, without any locality. It remained imperfectly known until a few years ago when a specimen was collected, again without precise locality, but somewhere between Esperance and Eyre, by Hammond. This specimen was in bud only. On the 21st October, 1960, the writer found a strange mallee near Boyatup Hill to the north of Cape Arid which proved to be this species, collected this time in bud, but with fruits.

The plant is of striking appearance by reason of its white smooth bark densely branched habit, and deep green lustrous leaves, and in its purple, acutely angled branchlets. The dark purple-brown hypanthium is surmounted by a pale yellow short and obtuse operculum which at this stage is broader than the hypanthium, and the buds are mainly 8-10 in the umbel. A characteristic is the broadening of the individual flower-stalk under the hypanthium. This mallee was found to be fairly common from the region of Boyatup to beyond Mount Baring, and extended in a north easterly direction nearly to Mount Ragged, but was most common in the southern area of its range. Growing on open heath country it possessed a striking appearance and was the largest shrub occurring there.

On the following day whilst travelling down the lower course of the Thomas River a still finer group of specimens of a related plant of striking appearance was found growing in the low-lying country close to the river. This was a tall mallee or tree of up to 15 feet in height with a pinkish- or yellowish-white smooth bark, erect and densely leafy branches, and with a profusion of pale yellow flower-buds, differing from the Boyatup specimens in the still broader leaves, much larger flower buds and fruits, the former with ribbed and obtusely pointed opercula, and larger irregularly ribbed fruits. It may prove to be a distinct variety. The fruits are almost half an inch in length. Both plants had the characteristic purple angled branchlets, and seven or more flowers to the umbel. The species is an unusually attractive one, and interesting because of the variation in its buds and fruits.

When describing the species, Mueller compared it with a mallee from the Stirling Range (*E. decurva*), but its closest affinity is undoubtedly *Eucalyptus Flocktoniae*, the Merrit, a handsome tree of the Eastern Goldfields, but possessing a mallee form near the south coast.

*Eucalyptus Flocktoniae*, belongs to the *oleosa* group, species remarkable for their oil yields, but in *E. Cooperiana* I cannot find any trace of oil cavities or dots in the leaves. Furthermore, *E. oleosa* and *E. Flocktoniae* have long slender awl-like protruding points at the apices of their valves, while in *E. Cooperiana* the valves are deeply included without such points. The anthers of all are much alike, but the anastomosing ribs of the fruits of *E. Cooperiana* are distinctive. Mueller in describing *E. Cooperiana* states that he has



No. 84.—Yate (*Eucalyptus cornuta* Labill.).

A—Leaves; B Umbel of flower buds; C—Flower bud (enlarged); D—Anthers; E—Flowers; F—Cluster of fruits; G—Fruit (enlarged); H—Fruit in longitudinal section. Ross Peak, Gardner sine no.

not seen the fruit, but Blakely (Key to the Eucalypts) describes these, apparently those of *E. oleosa*, and also gives King George's Sound as the locality for the species. It is quite evident that Maxwell collected his specimen on his journey from Cape Arid to the Great Australian Bight.

*Eucalyptus Cooperiana* commemorates the name of Ellwood Cooper of Santa Barbara College and the author of "Forest Culture and Eucalyptus trees." He was a promotor of the cultivation of Eucalyptus in California. The species is worthy of cultivation being both attractive in appearance and suitable for shade purposes.

## No. 84—THE YATE

(*Eucalyptus cornuta* Labill.)

**W**ELL known for the qualities of its timber, notably strength, elasticity and density, the Yate was formerly prized for coach work, being used for wheel spokes and the shafts of horse-drawn vehicles.

It was named by Labillardiere in 1799, from the original (Type) specimen which he collected in the Recherche Archipelago between the 13th and 20th December in 1792. The precise locality was probably Middle Island. My reason for stating this is because one so frequently reads of Labillardiere collecting in the vicinity of King George's Sound, whereas the Expedition of D'Entrecasteaux sailed along the southern coast towards the end of 1792 without landing until Esperance Bay was reached on the 13th December. In this connection it is interesting to surmise just how Labillardiere came to describe the pitcher plant (*Cephalotus follicularis*) which he is credited with having collected, but which he could not possibly have seen in a living state since it does not extend further eastwards than Two People Bay close to King George's Sound. The Yate therefore is the first Western Australian species of Eucalyptus to be described and named.

*Eucalyptus cornuta* is the true Yate. The flat-topped, or swamp Yate is *E. occidentalis*; the warted Yate is *E. megacornuta*, and the salt-river Yate is *Eucalyptus*

*Sargentii*, related, but quite distinct from the true Yate. The species is endemic in South Western Australia, extending from the Vasse River to the Dalyup and perhaps still further to the east. Inland it extends to the upper reaches of the Fitzgerald River, and the Stirling Range. Almost always associated with granite rocks, it is found growing in the Stirling Range in soils of a different origin. The main centre of its distribution is between the Frankland River and Mount Barker, and southwards to King George's Sound. The characteristics of the tree are its rough dark grey somewhat shaggy bark on the trunk and main branches, the pale yellowish-brown extremely hard and tough timber, and its long operculum and yellow filaments. Still more characteristic is the fruit with its exerted domed disc and long valves formed from the base of the style (see illustration.)

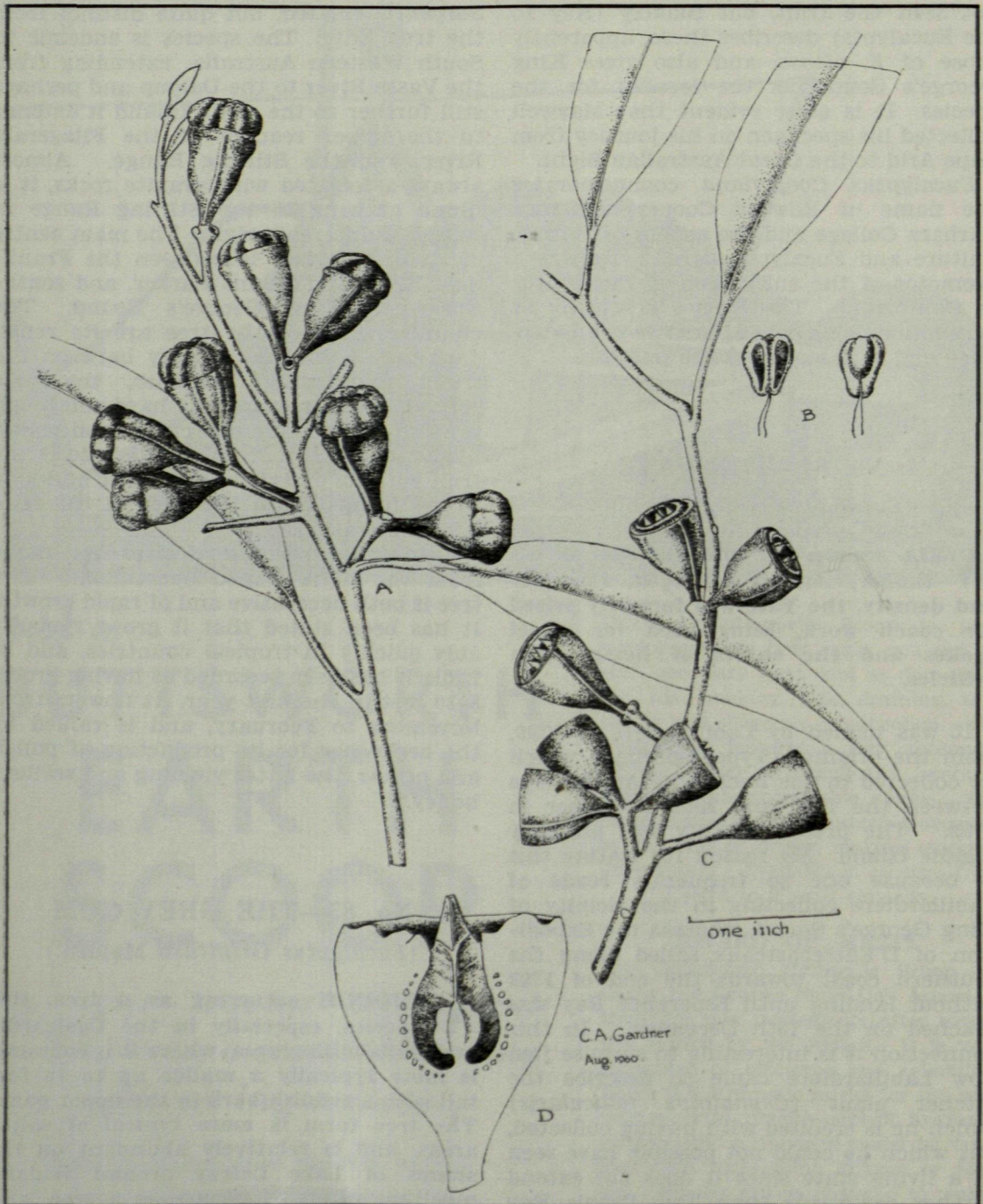
*Eucalyptus cornuta* derives its name from the horn-shaped operculum. The tree is both decorative and of rapid growth. It has been stated that it grows remarkably quickly in tropical countries, and in India it has been recorded as having grown 8-10 feet in the first year. It flowers from November to February, and is valued by the beekeeper for its production of pollen and nectar, the latter yielding an excellent honey.

## No. 85—THE GREY GUM

(*Eucalyptus Griffithsii* Maiden.)

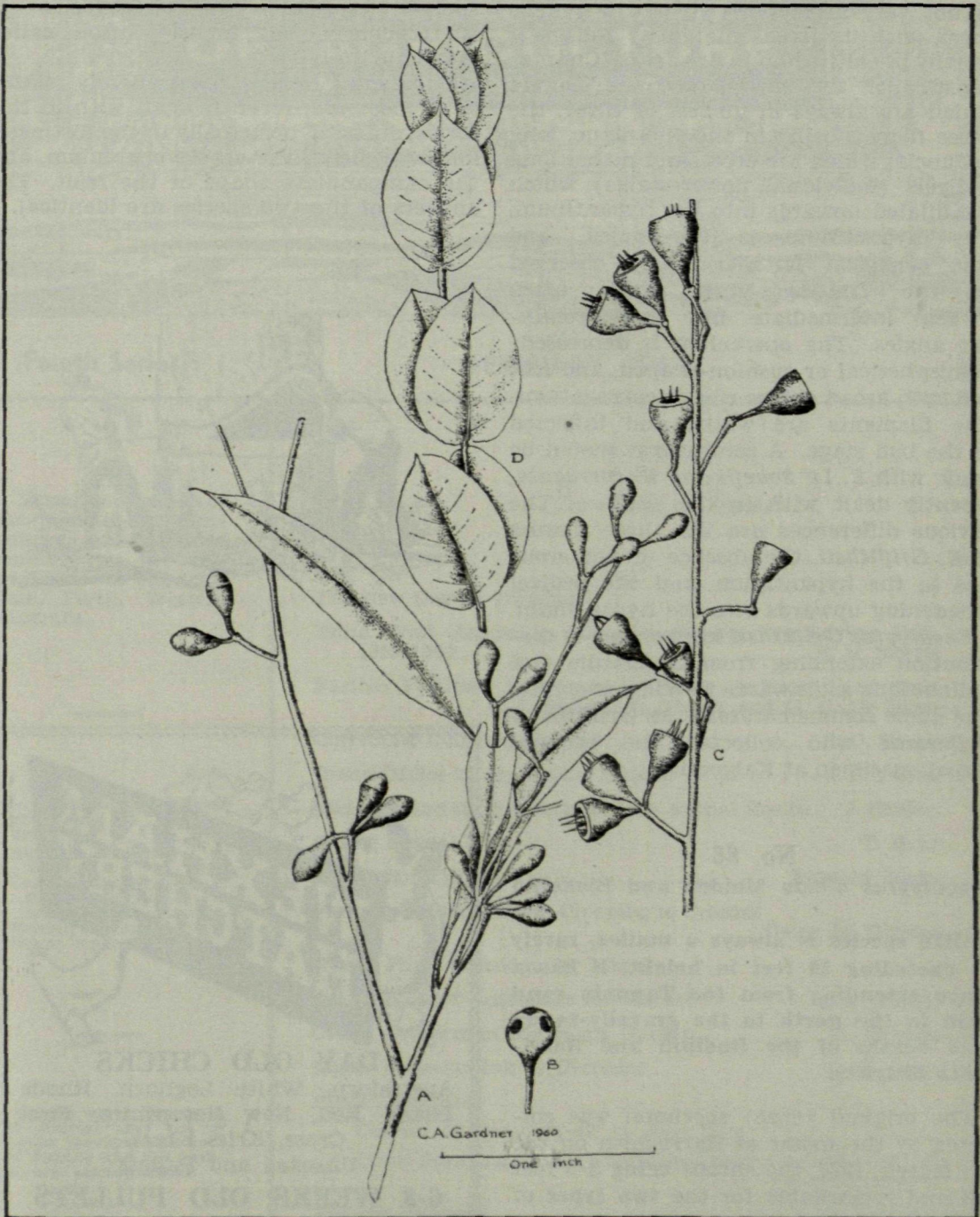
**A**LTHOUGH occurring as a tree, this species, especially in the Coolgardie and Bullabulling area, where it is common, is more typically a mallee up to 18 feet tall with a reddish bark in the upper parts. The tree form is more typical of saline areas, and is relatively abundant on the shores of Lake Lefroy around Widgiemooltha, where it occurs as a tree with a rough fibrous light grey persistent bark and smooth branches.

The tree attains a height of between 40 and 45 feet, the trunk being up to 10 or 12 inches in diameter, and the timber is brown with an interlocked grain. The tree typically has a crooked trunk, and



No. 85.—Grey Gum (*Eucalyptus Griffithsii* Maiden.)

A—Branchlets with leaves and flower buds; B—Anthers. C—Branchlet with fruits; D—Fruit in longitudinal section (much enlarged). Bullabulling, Gardner 9269.



No. 86.—*Eucalyptus Albida* Maiden et Blakely.

A—Branchlet with leaves and flower buds; B—Anther; C—Branchlet with young fruits; D—Primary foliage  
 A—Harrismith, Gardner 2113 (Type); C—Dudinin, Gardner sine no.

is not very attractive, whilst the mallee form, with its handsome glossy foliage is worthy of cultivation in dry areas. Characteristics of the species are the flowers which are always in umbels of three, the three flowers being in the one plane, long peduncles which are erect, and rather long pedicels (individual flower-stalks) which are dilated upwards into the hypanthium. The hypanthium is two-angled, and this condition is also to be observed in the fruiting stage, with often a few intermediate but less prominent angles. The operculum is depressed-hemispherical or cushion-shaped, and ribbed with broad obtuse ribs or corrugations. The filaments are white, and inflected in the bud stage. A comparison should be made with *E. Le Souefii* and *E. corrugata*, recently dealt with in this series. The obvious differences are the three flowers of *E. Griffithsii*, the absence of numerous ribs to the hypanthium, and the pedicel broadening upwards into the hypanthium.

*Eucalyptus Griffithsii* has an area of distribution extending from Coolgardie and Bullabulling southwards to Widgiemooltha. The name commemorates J. M. Griffiths of Melbourne who collected the original (type) specimen at Kalgoorlie.

### No. 86

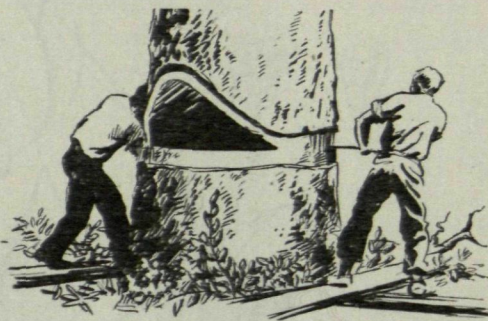
(*Eucalyptus albida* Maiden and Blakely.)

**T**HIS species is always a mallee, rarely exceeding 10 feet in height, it has a range extending from the Tammin sand plain in the north to the gravelly-sandy sand heaths of the Dudinin and Harrismith districts.

The original (type) specimen was collected by the writer at Harrismith on the 6th March, 1924, the shrubs being 3-5 feet tall and remarkable for the two types of foliage present, both of which are here illustrated: the narrow deep green lustrous leaves of the upper older branches, and the broad frosty-white opposite leaves of the younger lower branches. These represent the primary foliage which is seen on a number of *Eucalyptus* species, especially the blue gum, and a number of tropical

species, especially the bloodwoods. It is frequently, but inaptly, often called "juvenile" foliage.

*Eucalyptus albida* is very closely related to *E. foecunda*, recently dealt with in this series, differing principally in the distinctly longer pedicels, the obtuse operculum, and the campanulate shape of the fruit. The anthers of the two species are identical.



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