

WARTED YATE (*Eucalyptus magacornuta* C. A. Gardn.)
 A—Leaf; B—Anther; C—Flower buds; D—Fruit; E—Section of Fruit

TREES OF WESTERN AUSTRALIA

By C. A. GARDNER, Government Botanist

No. 35—THE WARTED YATE

(*Eucalyptus megacornuta* C. A. Gardn.)

THE Warded Yate was originally discovered by the writer in 1927 in the Ravensthorpe Range, and to date it is a tree of restricted habitat in that the species has not been found occurring naturally in any other locality.

The tree, which attains a height of 25 ft., resembles the gimlet tree in some respects, having smooth, rather thin, ashy-brown bark, a branching habit not unlike the gimlet, and hard, dark yellowish-brown timber. In other respects however, there is no resemblance.

The Warded Yate is remarkable for its large green-filamented flowers, and its densely-warted bud-cap or operculum. This, as the accompanying illustration shows, is long and horn-like except that it is obtuse at the tip. The base of the operculum shows a pronounced dilation with a dense row of closely-placed tubercles—those on the remainder of the cap being irregularly scattered.

Only two or three flowers occur at the end of the very thick flower-stalk (peduncle) which is dilated upwards, and the flowers are pendulous. These buds are more than three inches in length, so that

the flowers are relatively large. The green stamens are not incurved before the bud expands, but remain erect and wavy within the operculum. The fruit is hard and woody, somewhat bell-shaped and nearly one and a half inches in length. Broad processes of the disc overlie the valves.

The Warded Yate is regarded by apiarists as one of the best nectar-producing species of *Eucalyptus* in Western Australia, and its planting on an extensive scale might serve a twofold purpose—as it is a very desirable shade tree and one which is valuable for honey production. The leaves are very rich in oil, but this has not been chemically examined.

The tree grows in small pure stands in the gravelly declivities of the Ravensthorpe Range, and it flowers in October and November. In cultivation it has proved hardy in the banksia and tuart sands of the metropolitan area.

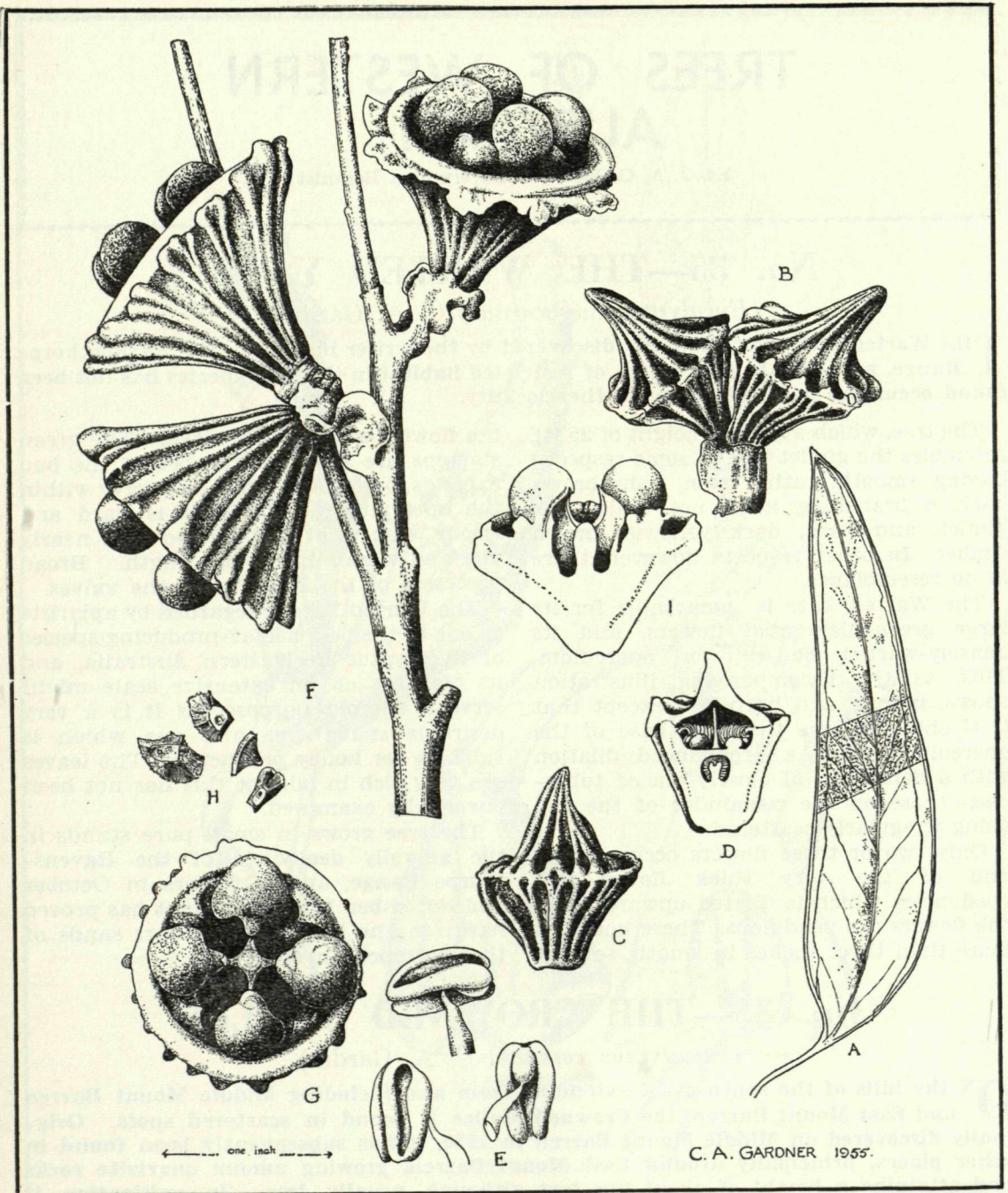
No. 36—THE CROWNED MALLEE

(*Eucalyptus coronata* C. A. Gardn.)

ON the hills of the south coast extending from and including Middle Mount Barren and East Mount Barren, the Crowned Mallee is found in scattered spots. Originally discovered on Middle Mount Barren in 1926, it has subsequently been found in other places, principally around East Mount Barren, growing among quartzite rocks and attaining a height of about five feet, although usually less. In cultivation it grows somewhat taller, and has been widely cultivated in Victoria for windbreak purposes.

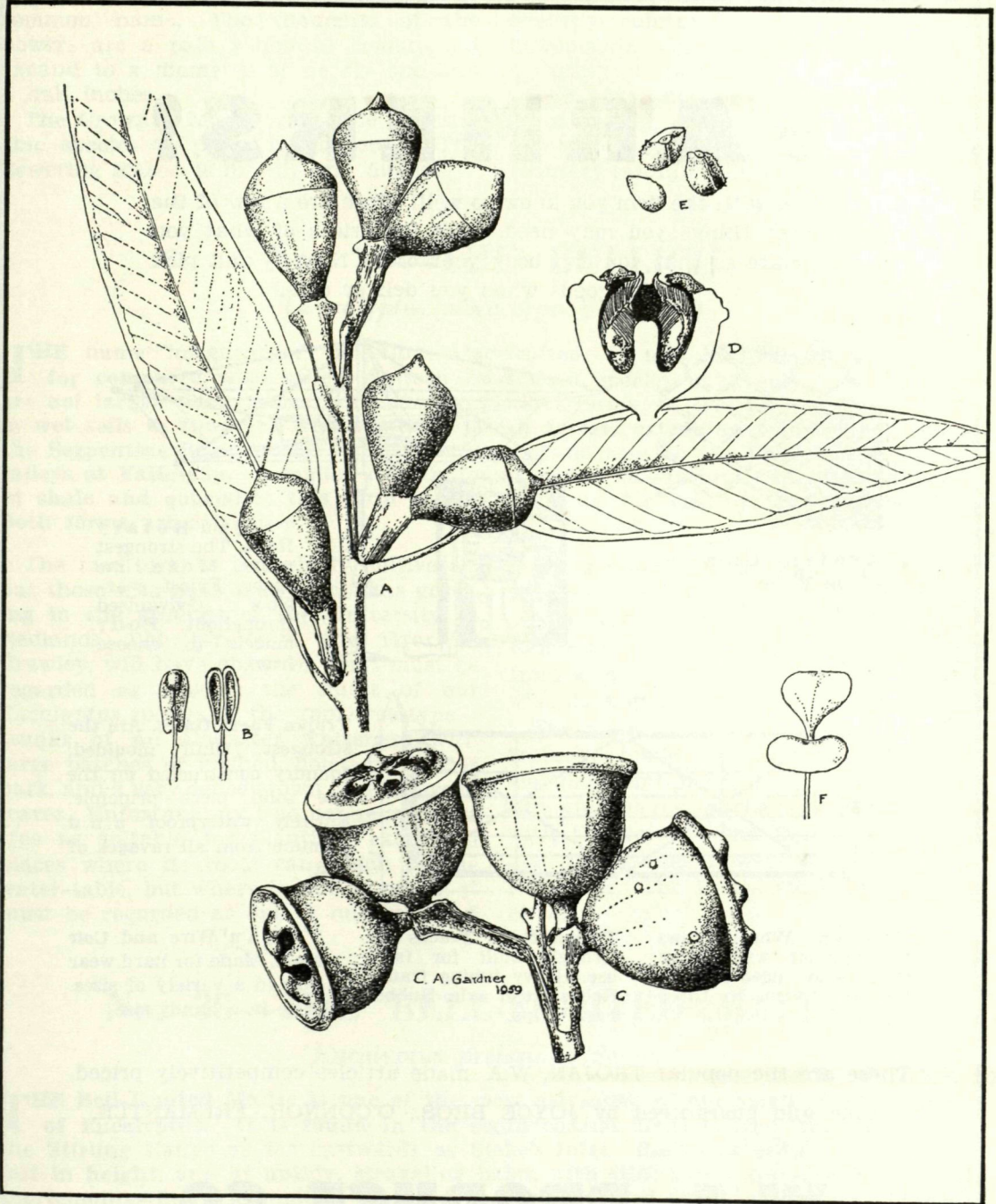
The principal features of the species are the remarkable ribbing of the buds and fruits, the curiously-shaped bud cap broadly and horizontally expanded at the base with the ribs expanded at the point

where the cap joins the calyx, and the large globular tubercles which cover the valves of the fruit. The fruit-valves, and correspondingly the tubercles, vary from four to six, and it is this "crown" of



CROWNED MALLEE (*Eucalyptus coronata* C. A. Gardn.)

A—Leaf; B—Flower-buds; C—Single Flower-bud; D—Section of Flower-bud; E—Anthers; F—Branchlet showing Fruits; G—View of Fruit from above; H—Seeds; I—Section of Fruit



BULLICH (*Eucalyptus megacarpa* F. Muell.)

A—Branchlets with Leaves and Flower-buds; B—Anthers; C—Fruits; D—Section of Fruit; E—Seeds; F—Cotyledons

appendages which gives the mallee its common name. The filaments of the flowers are a pale yellow in colour, and expand to a diameter of nearly one and a half inches.

The Crowned Mallee would be a desirable species to plant in gardens. The flowering season is in July and August.

Another attractive feature of the quaintly-sculptured fruit is the broad wavy flower-stalk which is rigid, and takes on a variety of shapes.

The plant has proved hardy in many types of soil, and would be suitable for planting anywhere where the annual (winter) rainfall is in excess of 12 inches.

No. 37—THE BULLICH

(*Eucalyptus megacarpa* F. Muell.)

THE name "megacarpa," meaning large-fruited, is not particularly appropriate, for compared with other Western Australian species of *Eucalyptus*, the fruits are not large. The species takes on two distinct forms. A tree form is found mostly in wet soils in the karri and southern jarrah forests extending from Jarrahdale on the Serpentine River to the vicinity of Albany, and also on the limestone soil of the valleys at Yallingup. A mallee form is found on the mountains of the Stirling Range, in shale and quartzite; this form is also found as far east as the Barren Hills. Both forms are attractive.

The tree form is not widely cultivated, but those who have seen specimens growing in the grounds of the University at Nedlands, not far from the river at Crawley, will have observed what must be regarded as one of the finest of our *Eucalyptus* species of the gum-tree type—trunks of an alabaster whiteness with large patches of unshed violet-grey outer bark, and a very dense crown of dark green leaves. Unfortunately I do not regard this tree as suitable for planting, except in places where its roots can reach to the water-table, but where it can be grown it must be regarded as one of our best and

most attractive shade-trees. The timber is very straight-grained, and pale in colour.

The mallee form found on the Stirling Range and adjacent quartzite hills, varies from 4 to 10 ft. in height and is a shrub with dark green leaves.

The main characteristics of the species is to be found in the fruits which are globular-hemispherical with a prominent rim, and the disc of the fruit is continuous with the valves. The flowers are white, and the species flowers in October and November. The leaves yield 0.5 per cent. of oil.

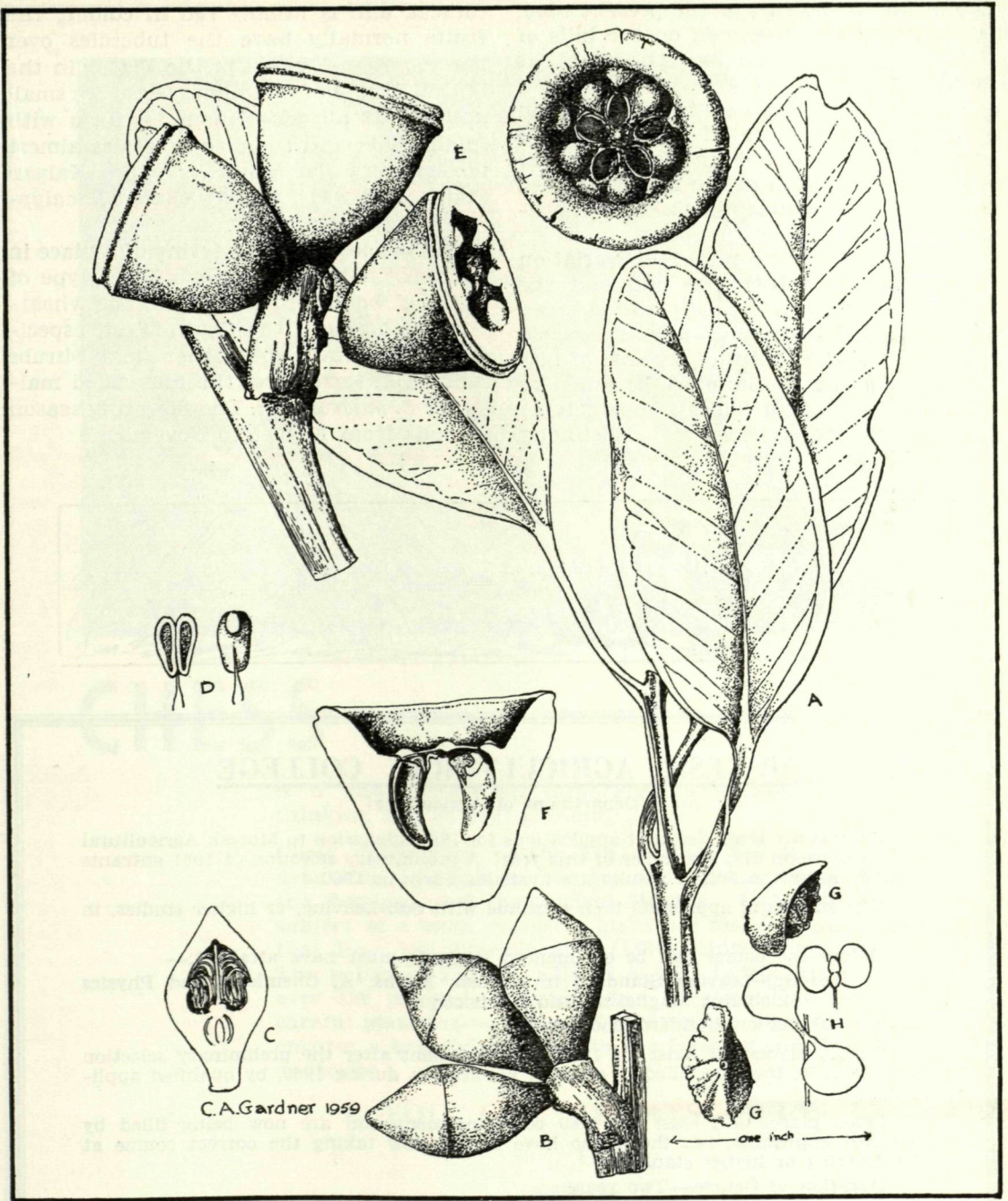
No. 38—THE BELL-FRUITED MALLEE

(*Eucalyptus preissiana* Schua.)

THE Bell-Fruited Mallee is one of the most attractive of our small shrubby species of *Eucalyptus*. It is found in the south coastal districts from the west end of the Stirling Range as far eastwards as Stoke's Inlet. Rarely exceeding three or four feet in height, and of untidy, straggling habit, with stiff, blunt, grey-green leaves, its shortcomings in these respects are more than outweighed by its magnificent blossoms of rich yellow, and its attractive bell-shaped fruits. It grows in poor soils, such as stony sandstone country, usually on the open heath.

The name commemorates Ludwig Preiss, a botanist who visited the Swan Colony in 1838 and resided here for four years. He often travelled with James Drummond,

collecting specimens of plants and birds for the Hamburg Museum, and he penetrated as far inland as Wongan Hills, and took an overland journey to King George's



BELL-FRUITED MALLEE (*Eucalyptus Preissiana* Schau.)

A—Branchlet with leaves; B—Flower-buds; C—Section through Flower-bud; D—Anthers; E—Fruits; F—Section of Fruit; G—Seeds; H—Expanded cotyledons

Sound far to the east of the present road. He collected this specimen on the hills of Cape Riche, and describes the plant as being 8 ft. tall.

The Bell-Fruited Mallee is well known in cultivation, but none of the specimens seen in the metropolitan area compare with the forms seen in the native habitat, the flowers losing much in size and intensity of colour.

The species shows considerable variation in the shape of both the bud and the fruit. The accompanying plate is taken from material collected near the Fitzgerald River—about the centre of its area of distribution—and may therefore be taken as fairly typical. The budcap (operculum) varies from merely convex to distinctly

conical, and is usually red in colour; the fruits normally have the tubercles over the valves (as shown in the Plate) in the typical form, but sometimes these are small and not at all conspicuous. A form with small fruits and the disc tubercles almost non-existent is found on the Kalgan Plains, and was formerly named *Eucalyptus kalganensis*.

The species is one deserving of a place in gardens. It thrives in almost any type of soil, and would prove hardy in the wheat-growing areas of the South-West, especially when grown with other small shrubs such as *E. terraptera*, the four-sided mallee, or *E. macrocarpa*. The flowering season extends from August to November.



MURESK AGRICULTURAL COLLEGE

(Department of Agriculture)

Parents are reminded that applications for 1961 admission to Muresk Agricultural College close on 31st December of this year. A preliminary selection of 1961 entrants is made after the Junior results are available early in 1960.

The successful applicants then continue with Sub-Leaving, or higher studies, in 1960.

Before the course can be commenced students must have attained:—

- (a) Sub-Leaving Standard in English, Maths. A, Chemistry and Physics (including Magnetism and Electricity).
- (b) Junior Standard Bookkeeping.

Should places still exist for 1961 commencement after the preliminary selection early in 1960, they are filled in order of application during 1960, by qualified applicants.

Some places still exist for 1960 commencement and are now being filled by qualified applicants, i.e., those who have or are now taking the correct course at Sub-Leaving or higher standard.

Duration of Course.—Two years.

Fees.—Approximately £130 per annum covering full residential charges.

Scholarships.—Department of Agriculture (3), the "Countryman," and J. J. Poynton Memorial (2).

Boarding Allowance.—Most Muresk students are eligible for the Education Department Boarding Allowance (£50 per annum).

Full details of the College are obtainable from the Principal, Muresk Agricultural College, Muresk, W.A., or the Department of Agriculture, Perth.