

YELLOW TINGLE

(*Eucalyptus Guilfoylei* Maiden.)

A—Branchlet with leaf and panicle of flowers; B—Flower buds; C—Anthers; D—Fruits; E—Section of fruit; F—Seeds

[Frankland River, Gardner

TREES

of Western Australia

By C. A. GARDNER, Government Botanist

No. 63—YELLOW TINGLE

(*Eucalyptus Guilfoylei* Maiden.)

THE yellow tingle is one of the large forest trees of the lower South-West, and although it possesses many good qualities, its limited range renders it of less importance than its associates—the jarrah and karri. Its area of distribution extends from the Denmark River in the east, to the Deep River in the west, in which area it is usually found fringing the karri forest, mainly in the low-lying situations.

Attaining a height of 150 ft., although usually about 120 ft. high, with a trunk up to 6 ft. in diameter, the trunk is relatively short (usually about 50 ft. long), and the branches are widely spreading. The bark is dark grey, rough throughout, fibrous, not unlike that of the blackbutt, but less friable, and resembling that of the red tingle, with which it is sometimes confused, although the two are very dissimilar in the flowers and fruits.

The timber is yellow, and exceptionally hard and durable. It withstands long submersion in water, and an experimental pile placed in position when the present Frankland River bridge was built, is still quite sound. Experiments made by the Forests Department with this timber for sleeper purposes in 1937, have proved that the timber is very suitable for this purpose, and termite resistant. The tree prefers low-lying situations, and is fairly common along the watercourses in the area mentioned above.

Botanically the tree possesses two unusual characteristics which may be seen by

reference to the accompanying plate. The inflorescence (A) shows that the umbels are arranged in a terminal panicle, a feature common in many tropical species of the genus, but confined to this species in the South-West. The second feature is the shape of the anther (C).

The anthers instead of opening in vertical slits or pores, open laterally, and when seen from below resemble a pair of spectacles. This character is peculiar to this species. In the foliage and fruits the tree is not unlike the karri, and the leaves spread horizontally, are deep green above and paler underneath like those of the karri.

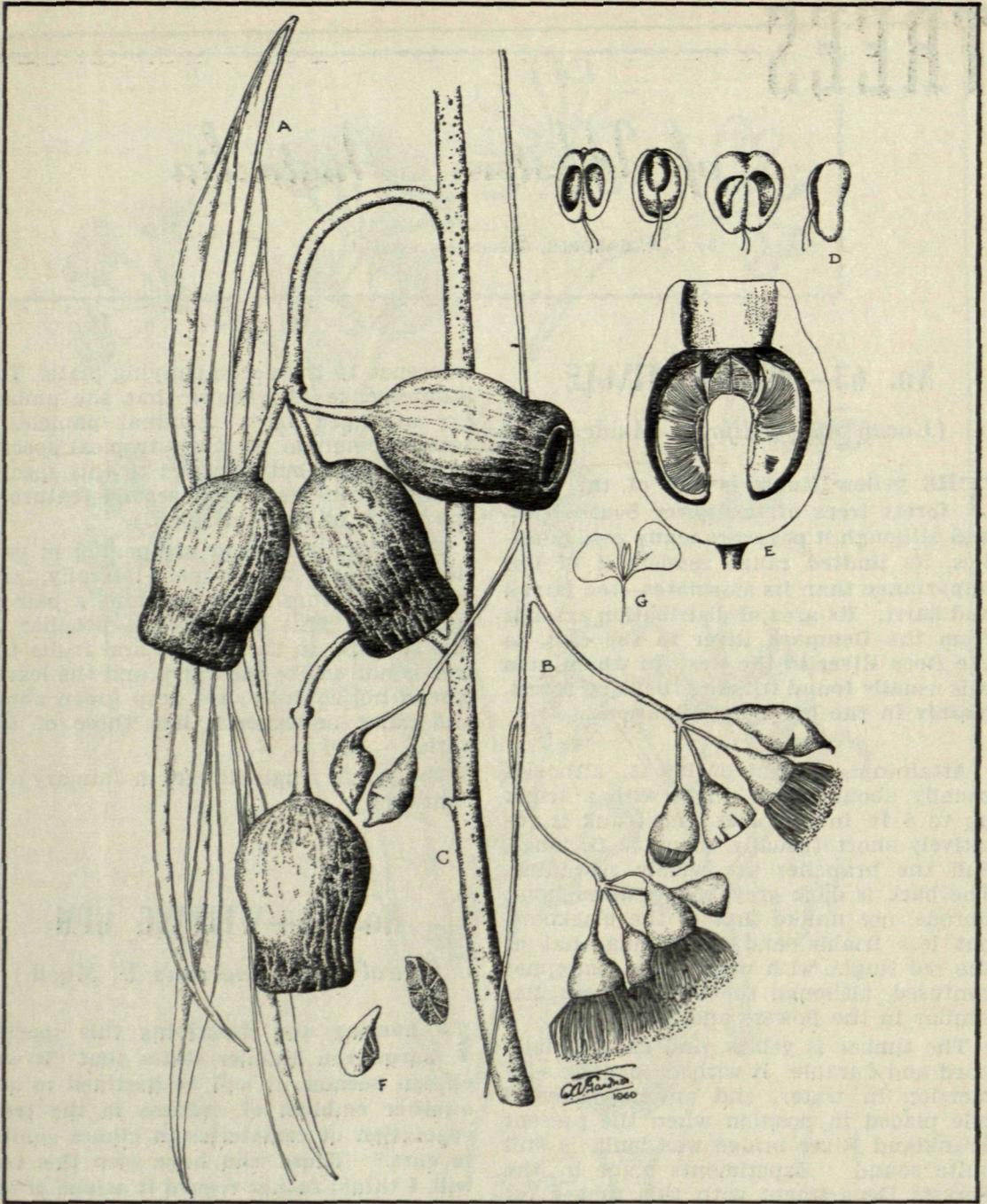
The yellow tingle flowers in January and February.

No. 64—WEeping GUM

(*Eucalyptus sepulcralis* F. Muell.)

IN naming and describing this species, Baron von Mueller states that "It was chosen because it will be destined to add another emblem of sadness to the tree-vegetation of cemeteries in climes similar to ours." Those who have seen this tree will, I think, rather regard it as one of our most attractive and graceful species and worthy of a place in any scheme of cultivation.

Attaining a height of up to 25 ft., the trunk rarely exceeds two inches in diameter, so that it is one of the most slender of trees, and its powder-white bark

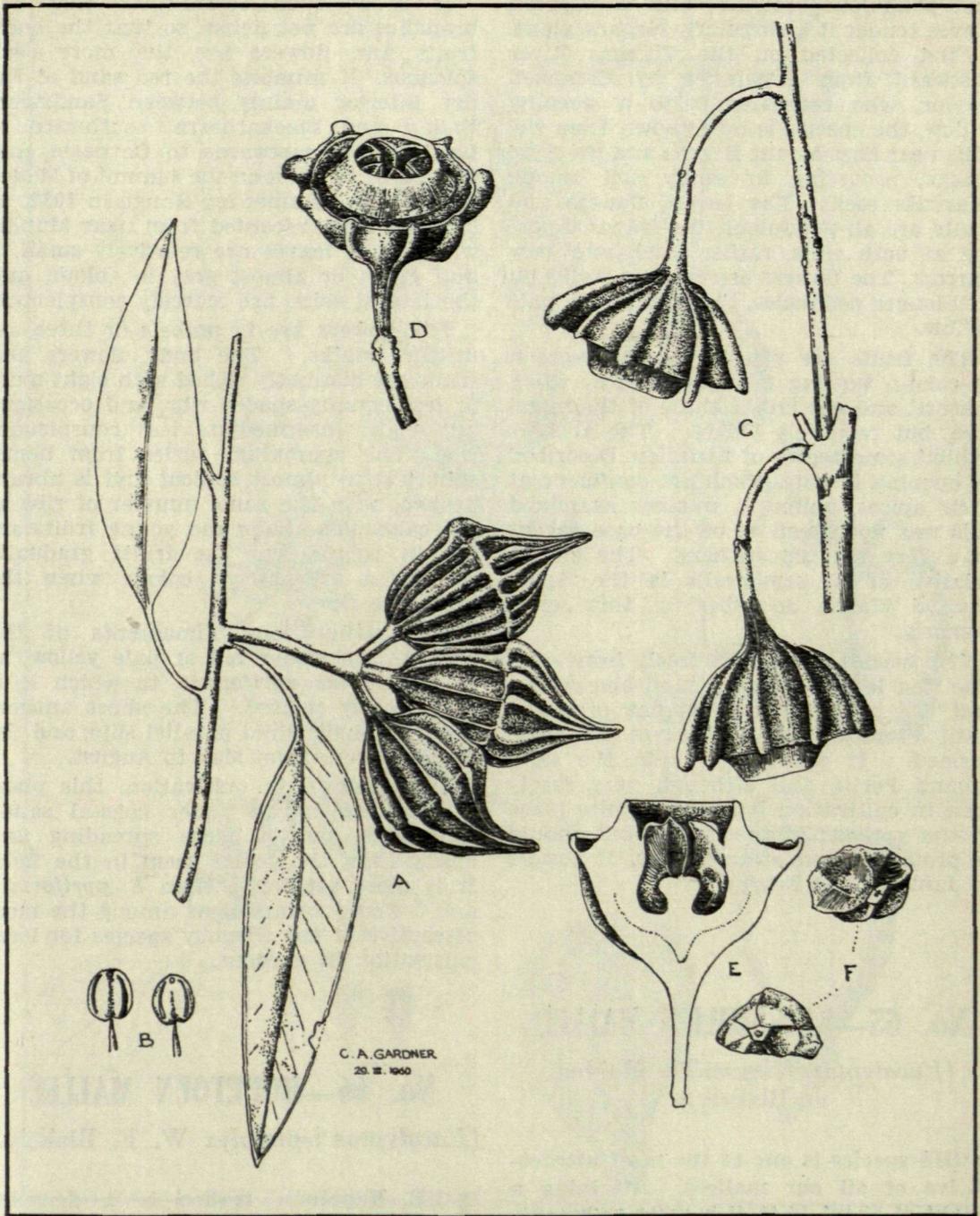


WEeping GUM

(*Eucalyptus sepulcralis* F. Muell.)

A—Branchlet with leaves; B—Flowering branchlet; C—Branchlets with fruits; D—Anthers; E—Fruit in section; F—Seeds; G—Cotyledons

[Near East Mount Barren, Gardner 12088



KINGSMILL'S MALLEE

(*Eucalyptus Kingsmillii* Maiden et Blakely.)

A—Branchlet with leaves and umbel of flower buds; B—Anthers; C and D—Fruits; E—Fruit in longitudinal section; F—Seeds

and pendulous branches and olive-green leaves render it a singularly elegant plant.

First collected on the Thomas River eastward from Esperance by Campbell Taylor, who compares it to a weeping willow, the species is now known from the hills near East Mount Barren and the Eyre Range, occurring in sandy soil among quartzite rocks. The leaves, flowers and fruits are all pendulous, the leaves tapering at both ends, rather thick and very narrow. The flowers are on long stalks on still longer peduncles, the filaments a pale yellow.

The fruits are urn-shaped, olive-green in colour, turning to a leaden grey when mature, and not unlike those of the marri tree, but relatively longer. The anthers exhibit some degree of variation. Described as opening in slits which are confluent at their apices, among a number examined this was not found to be the case except in a very few old anthers. The closest relative of *E. sepulcralis* is the Apple Fruited Mallee described in this series recently.

The species germinates freely from seed. The first leaves are broad and blue-green, and the typical foliage is not produced until several of the broad leaves have been formed. It grows readily in the sand around Perth, and although very rarely seen in cultivation it has a definite place in the gardens of the future, but should be protected from strong winds. It flowers in January and February.

No. 65—KINGSMILL'S MALLEE

(*Eucalyptus Kingsmillii* Maiden
et Blakely.)

THIS species is one of the most attractive of all our mallees. Attaining a height of about 15 ft. it is more commonly 6 to 8 ft. tall, and in cultivation is a widely spreading shrub. The bark of the main stems is rough and grey in the lower parts, that of the smaller branchlets greenish brown, and the branchlets usually red. It commonly spreads to a diameter of 8 or 10 ft.

It is of open texture, in that the branches are not dense, so that the buds, fruits and flowers are the more conspicuous. It inhabits the red sand of the dry interior mainly between Sandstone, Nallan and Meekatharra, southward to Lawlers and eastwards to Carnegie, and the writer found it on the summit of Mount Bruce in the Hamersley Range in 1932. It has also been recorded from near Mundiwindi. The leaves are relatively small, a dull green or almost grey in colour, and the lateral veins are scarcely conspicuous.

The flowers are in umbels of three, on distinct stalks. The buds, flowers and fruits are distinctly ribbed with eight more or less equally-spaced ribs, and occasionally eight intermediate less conspicuous ribs. The operculum varies from hemispherical to almost conical and is always beaked, with the same number of ribs as the calyx. The buds and young fruits are red in colour, but the fruits gradually assume a grey-brown colour when the seeds are ripe.

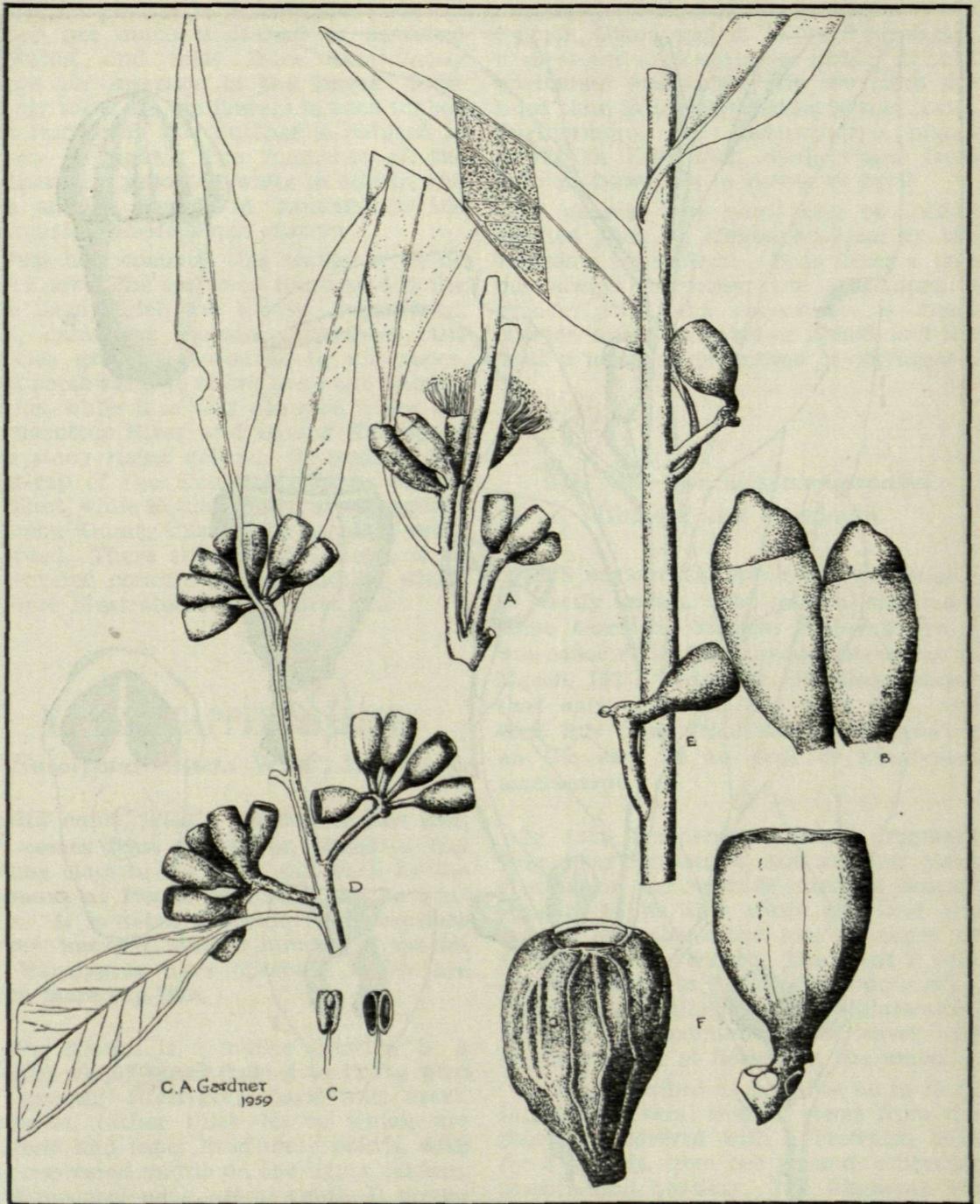
The rather long filaments of the anthers are either red or pale yellow, as in *Eucalyptus pyriformis*, to which it is very closely related. The short anthers open in longitudinal parallel slits, and the shrub flowers from May to August.

Little known in cultivation, this plant proves very hardy under coastal sandy conditions, but is more spreading and bushy than the forms seen in the field. It is more attractive than *E. pyriformis*, and I would regard it as among the most attractive of the shrubby species for local cultivation in gardens.

No. 66—HOPETOUN MALLEE

(*Eucalyptus leptocalyx* W. F. Blakely.)

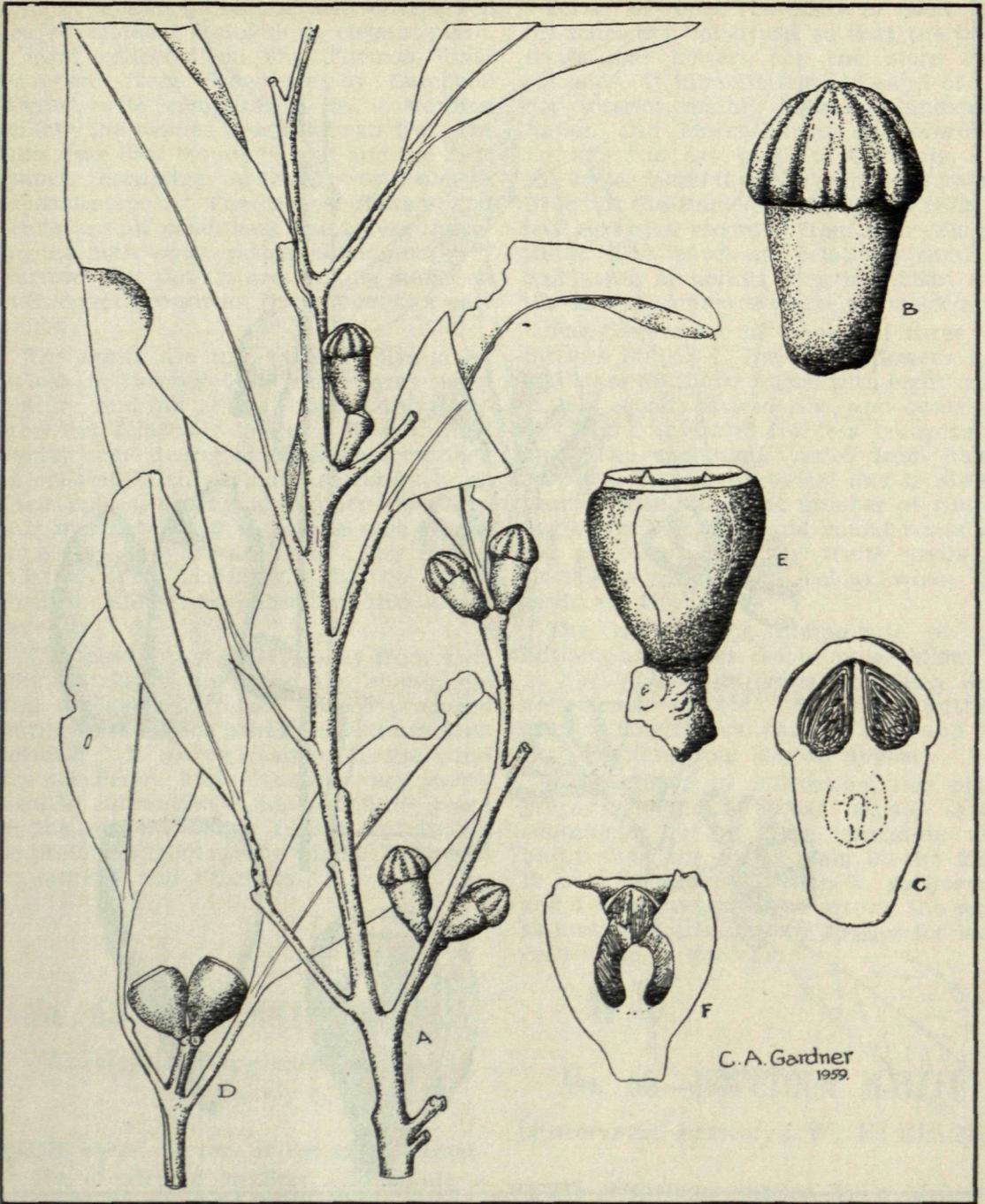
THE Hopetoun mallee is a densely-branched shrub 8 to 12 ft. tall, with a rough grey bark on the lower parts, becoming smooth on the younger branches. The branchlets are acutely angled. The thick erect leaves are lustrous with the midrib impressed on the upper surface, the lateral veins scarcely conspicuous. The leaves are copiously oil-dotted.



HOPETOUN MALLEE

(*Eucalyptus leptocalyz* W. F. Blakely.)

A—Flower buds and flowers; B—Flower buds (enlarged); C—Anthers; D and E—Fruits; F—Fruits (enlarged)
 [Nine Mile Tank northward from Hopetoun, J. H. Maiden November 1909 (Type)]



C. A. Gardner
1959.

CAPPED MALLEE

(*Eucalyptus pileata* W. F. Blakely.)

A—Branchlet with leaves and flower buds; B—Flower bud (enlarged); C—Flower bud in section; D—Fruit; E—Fruit (enlarged); F—Fruit in longitudinal section

[Desmond near Ravensthorpe, J. H. Maiden November 1909 (Type)]

The flowers are in umbels, the stalks of which are much thickened or flattened upwards, and arise from immediately above the insertion of the leaves. Commonly there are ten flowers in each umbel, but frequently this number is reduced to seven or eight. The filaments of the anthers are yellowish-white in colour, and the species flowers in January in the Ravensthorpe-Hopetoun district.

Just how common this mallee is we do not know. The specimen illustrated is the one from which the species was named, but, exhibiting certain differences, the species extends eastwards to Esperance, and northwards to Shark Lake and Salmon Gums, while it is very common along the Jerdacuttup River, and around Kundip on the stony rising ground. In general the bud-cap of the Kundip-Hopetoun shrubs is blunt, while in the eastern areas towards Salmon Gums, this organ becomes more pointed. There still remains much to be discovered concerning this species, which is here illustrated for the first time.

No. 67—CAPPED MALLEE

(*Eucalyptus pileata* W. F. Blakely.)

THE name, *pileata*, applied to this tree, comes from the Latin, *pileus*—a cap fitting close to the head and worn by the Romans at feasts, especially the Saturnalia. It is not a particularly appropriate name, however, since a number of species of *Eucalyptus* have opercula which are even more cap-like.

The species is a mallee growing to a height which varies from 4 to 12 ft., with a smooth, silver-grey bark and erect, lustrous, rather thick leaves which are narrow and taper into acute points, with an impressed midrib on the upper surface, and inconspicuous lateral veins. It occurs in a number of forms, being common on the clay soils around Ravensthorpe (the original specimens came from this district). It is found around Esperance, northward to Salmon Gums, and still further north, around Boorabbin and Karalee, we again find this plant, but the operculum is much more narrowly and

sharply ribbed. The specimens from Salmon Gums appear to be from larger mallees and here again the ribbing of both operculum and calyx-tube are more defined than in the Ravensthorpe specimens. Furthermore, the Ravensthorpe plants flower in December, while those from Salmon Gums are in flower in April.

In general this plant can be distinguished from its closest relatives by the following characters: It is never a tree but always a mallee; the operculum is broader than the calyx-tube, is much shorter, and corrugated or ribbed, and the fruit is never deeply ribbed or corrugated.

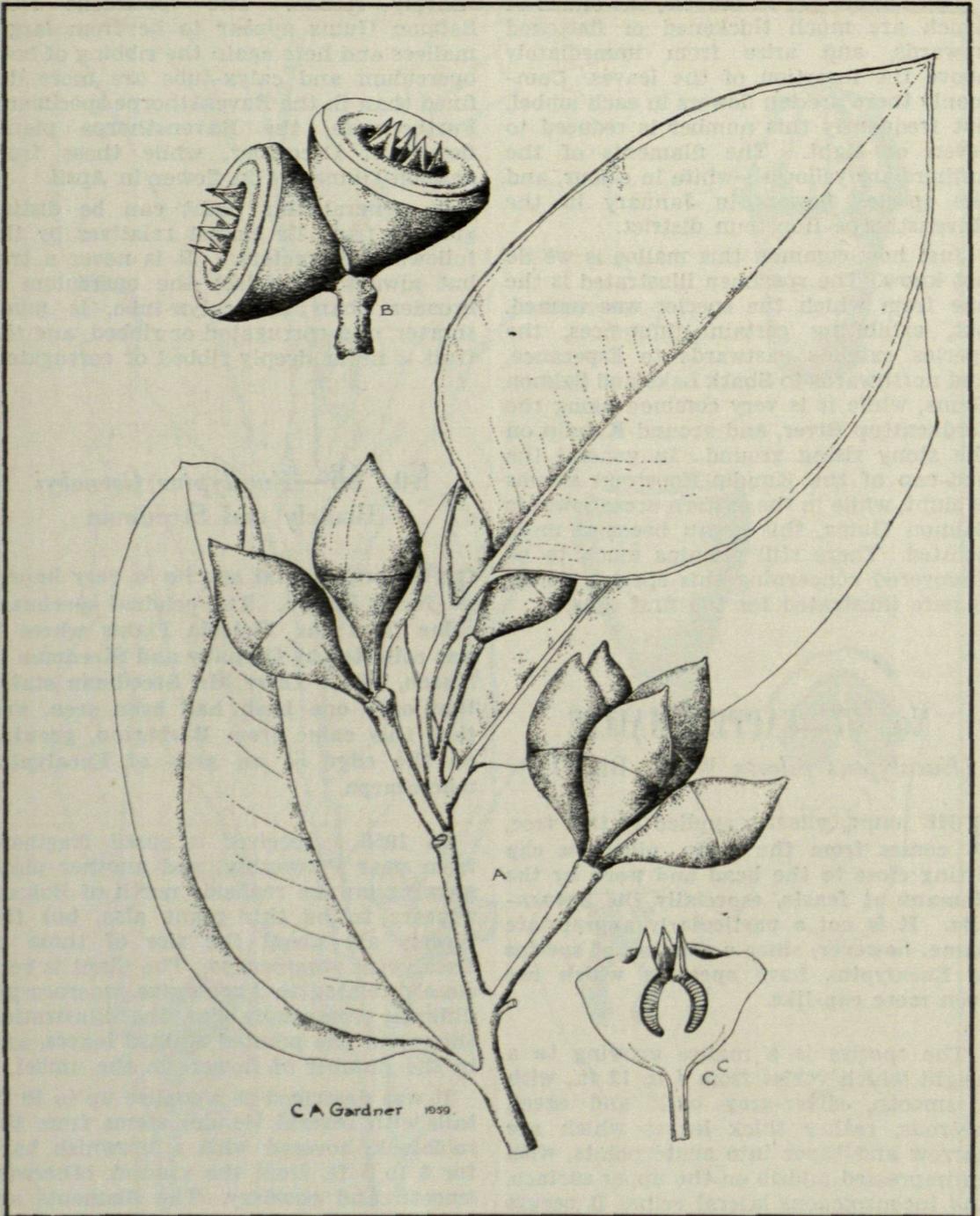
No. 68—*Eucalyptus Carnabyi* Blakely and Steedman

THIS ornamental species is very imperfectly known. The original specimens came from the Victoria Plains where it was collected by Carnaby and Steedman in March, 1937. Later Mr. Steedman stated that only one bush had been seen, and that this came from Barberton, growing on the edge of an area of *Eucalyptus macrocarpa*.

In 1958 I received a small fragment from near Piawaning, and another plant growing on the roadside north of Bolgart appears to be this plant also, but the flowers are about the size of those of *Eucalyptus macrocarpa*. The plant is very closely related to *Eucalyptus macrocarpa*, differing essentially (as the illustration shows) in the pointed stalked leaves, and in the number of flowers in the umbel.

It was described as a mallee up to 10 ft. tall, with several slender stems from the rootstock, covered with a brownish bark for 3 to 5 ft. from the ground, otherwise smooth and powdery. The filaments are stated to be "white or yellowish," but it is probable that red flowers also occur.

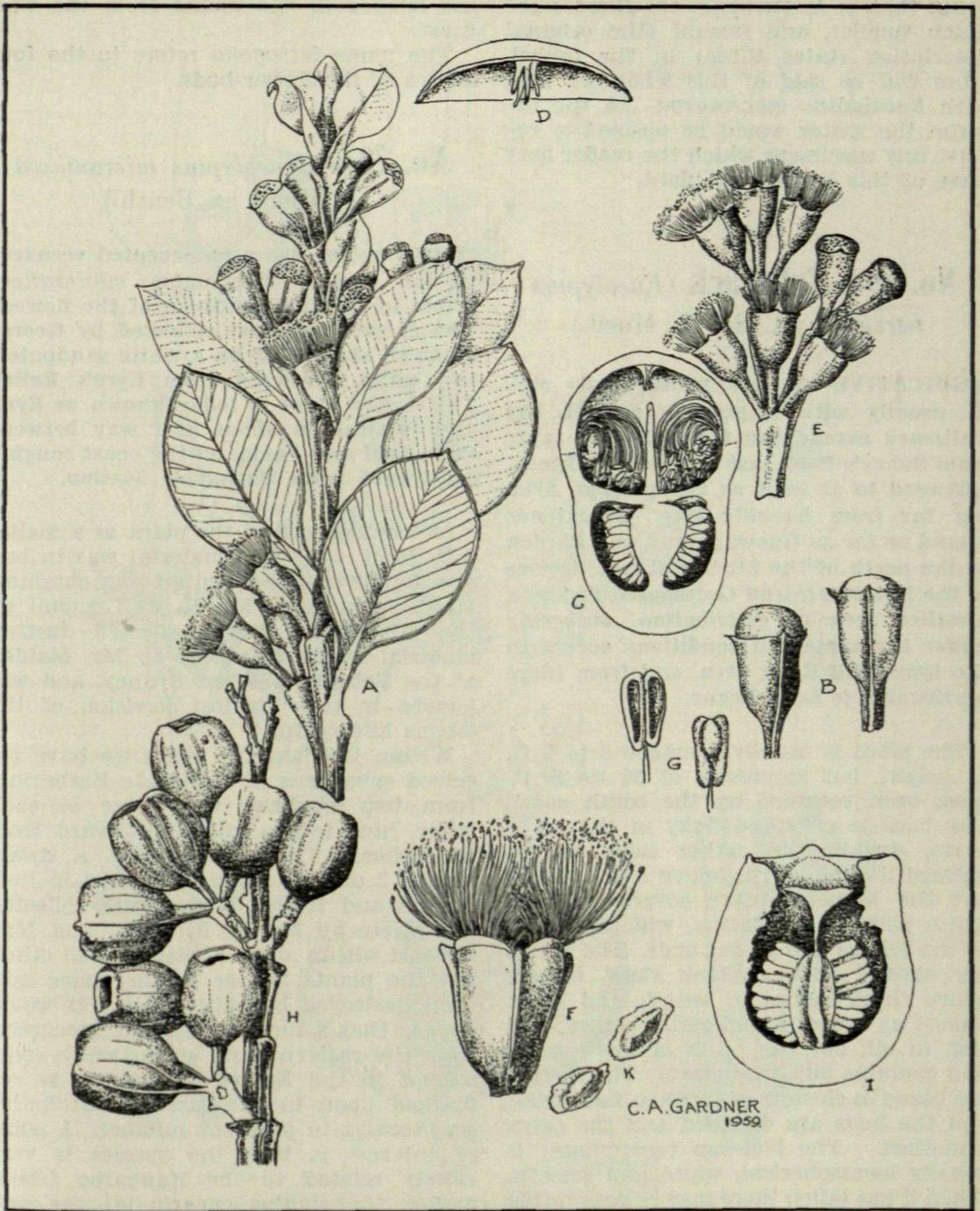
There is some evidence to show that this plant is no more than a variety of *Eucalyptus macrocarpa*, a species exhibiting much variation in leaf shape, presence or absence of leaf-stalk and the same of the flower-stalk, the essential difference



(*Eucalyptus Carnabyi* Blakely and Steedman.)

A—Branchlet with flower buds; B—Fruits; C—Fruit in longitudinal section

[Near Plawaning, Curtis 1959



TALLERACK

(*Eucalyptus tetragona* (R.Br.) F. Muell.)

A—Branchlet with flowers; B—Flower buds; C—Flower bud in longitudinal section; D—Operculum seen from below and showing the four small processes in the middle; E—Flowers; F—Flower (much enlarged); G—Anthers; H—Fruit; I—Section of fruit; K—Seeds

(Dalyup near Esperance, Gardner.)

being that in *E. Carnabyi* the flowers are much smaller, and several (the original description states three) in the umbel. More will be said of this when we deal with *Eucalyptus macrocarpa*. In the interim the writer would be pleased to receive any specimens which the reader may have of this interesting plant.

No. 69—Tallerack (*Eucalyptus tetragona* (R. Br.) F. Muell.)

INDICATIVE of poor white sandy soil, usually with a gravelly subsoil, the Tallerack extends on the light soil types from Sukey's Peak just outside Cranbrook, eastward to at least as far as Cape Arid, not far from Israelite Bay. It extends inland as far as Gnowangerup and Borden to the north of the Stirling Range, thence to the Newdegate and Grasspatch districts. Another area of distribution, occurring under the same soil conditions occurs in the lower Hill River area, and from there northwards to Lake Logue.

The plant is usually a mallee 6 to 8 ft. in height, but specimens of 20 to 25 ft. have been recorded on the south coast. The bark is grey and flaky in the lower parts, shedding in rather thick plates; upward it is yellowish-brown and smooth, but the branchlets are covered with a white powdery exudation, which extends to the foliage and flower buds. The leaves are stalked with a thick stalk, seldom above three inches in length and often almost as broad, prominently veined, and rich in oil, but the oil is of low quality and contains but little cineol. The flowers are borne in clusters of three on flat stalks, and the buds are 4-ribbed and the calyx 4-toothed. The bud-cap (operculum) is usually hemispherical, white and smooth. When it has fallen there may be seen inside four small tooth-like projections which may represent the vestiges of the incurved tips of the four petals which have become fused to form the operculum. The stamens are pure white, and in four tufts or bundles alternating with the four teeth of the calyx-tube. The fruits are almost globular in the south coastal forms, but often more

urn-shaped in the plants from the west coast.

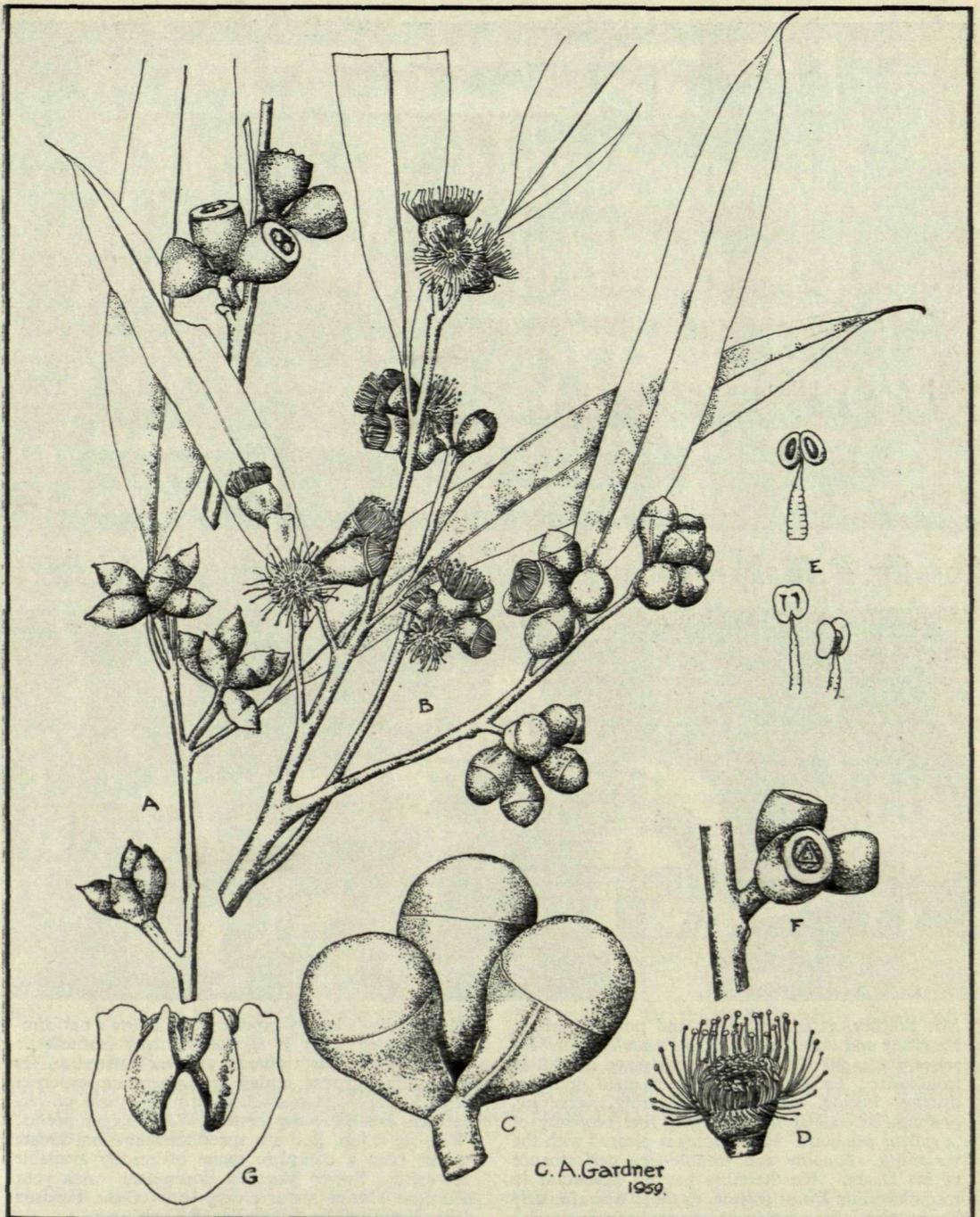
The name *tetragona* refers to the four angles of the flower-buds.

No. 70—(*Eucalyptus micranthera* F. Muell. ex Benth.)

THIS mallee bears no accepted vernacular name. The name *micranthera* refers to the small anthers of the flowers. The species was first collected by George Maxwell about 1850 on a white sandpatch, two miles westward from Eyre's Relief. This latter place is today known as Eyre, and is situated about half way between Cape Arid and Eucla, on the coast roughly southward from Burnabbie Station.

Maxwell described the plant as a mallee 6 to 10 ft. tall. The material was in bud and flower only, no fruits being obtained. Many years later, Mr. H. P. Turnbull on the Alexander River collected further material which was sent to Mr. Maiden at the Botanic Gardens Sydney, and was figured in the "Critical Revision of the Genus *Eucalyptus*."

Within the last two years we have received specimens at the State Herbarium from two localities very close to each other, nine to ten miles northward from Esperance. They came from a dwarf mallee 2 or 3 ft. high, and were in bud, flowers and fruit. These were collected separately by Mr. A. R. Main, and Mrs. Stewart within about a year of each other, but the plants in one locality have now been destroyed by cultivation. It would appear that a number of these specimens from the eastern parts of our south coast extend to the Esperance district, as remarked upon in the case of *Eucalyptus scyphocalyx* in a recent number. A point of interest is that the species is very closely related to the Kangaroo Island mallee (*Eucalyptus cneorifolia*) the well known source of eucalyptus oil of high quality. Another point of interest is to be found in the flowers which possess two types of stamens, one long and one short, and with these a certain difference in the size of the anthers. At the present time there is little to remark upon concerning this species.



(*Eucalyptus micranthera* F. Muell, ex Benth.)

A and B—Branchlets showing leaves, buds, flowers and fruits; C—Buds (enlarged); D—Flower; E—Anthers;
 F—Fruits; G—Section of fruit
 (About 10 miles northward from Esperance, A. R. Main, 1959.)