

WESTERN AUSTRALIAN DEPARTMENT OF AGRICULTURE

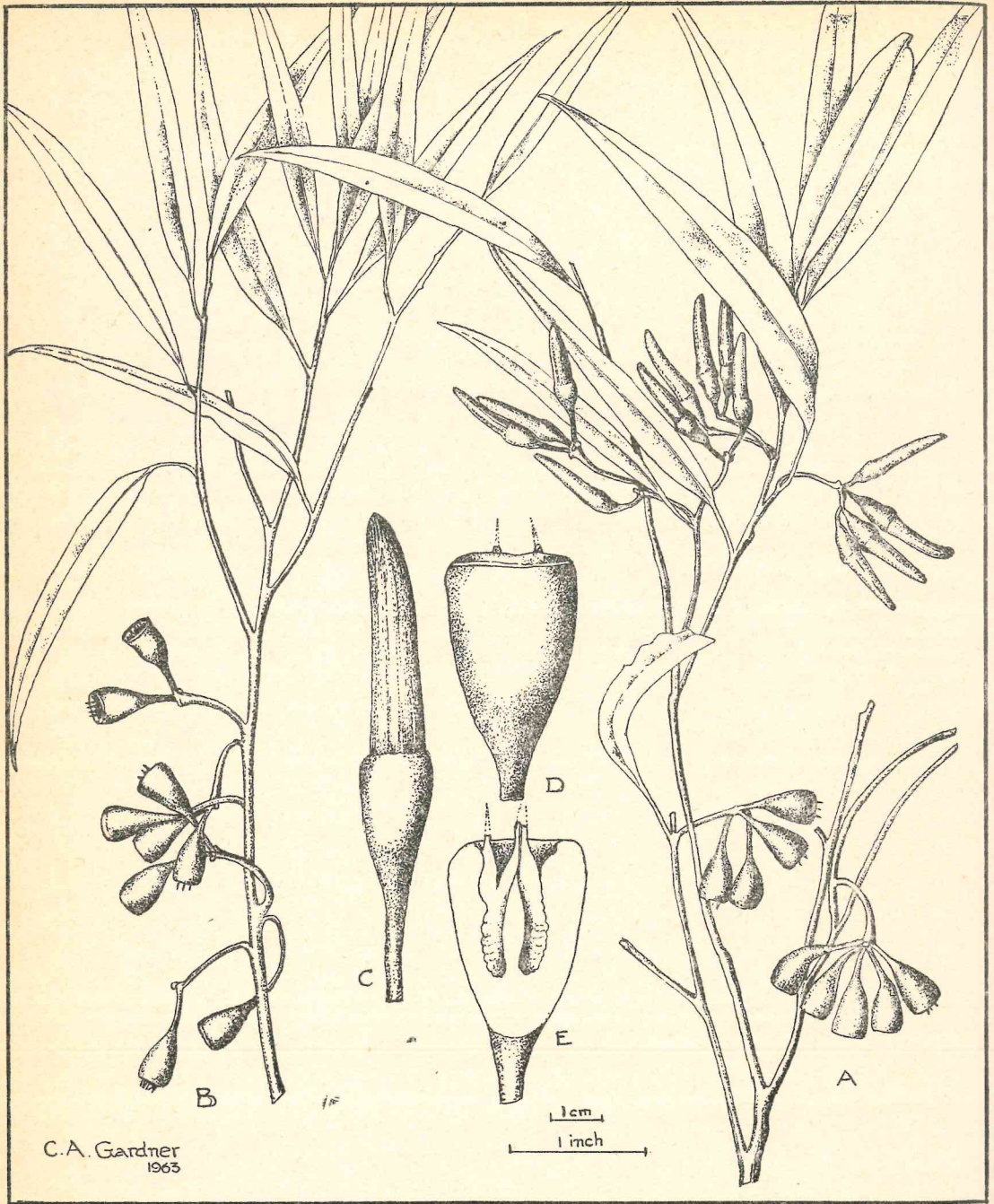
TREES OF WESTERN AUSTRALIA

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by

C. A. GARDNER





SALT RIVER MALLET
(Eucalyptus Sargentii Maiden.)

EXPLANATION OF PLATE

- A—Branchlet with buds and fruits. B—Branchlet with somewhat immature fruits. C—Flower-bud (enlarged).
 E—Fruit in longitudinal section.

Wyola, Gardner 14388, Jan. 1963.

TREES OF WESTERN AUSTRALIA

By C. A. GARDNER

101.—THE SALT RIVER MALLET

(*Eucalyptus Sargentii* Maiden.)

WITH the ever-increasing spread of salt in certain poorly-drained soils in Western Australia, any plant which tends to restrict salt encroachment is of considerable economic importance.

In the genus *Eucalyptus* there are a few trees which will withstand a certain degree of soil salinity, the principal one being *Eucalyptus kondininensis*, first described from Kondinin where it was called (locally) the "stocking-tree" because of the black, rough bark of the trunk which terminates upwards somewhat abruptly, and is succeeded by a thin, smooth bark. This particular tree is much more common further south, inhabiting the shores of the salt-pans, particularly at Pingrup, Lake Grace and other salt-pan country in the district. This tree may be found growing fairly close to the white surface salt, and is undoubtedly valuable in salt areas under dry conditions.

Another tree is the one to which this article is devoted (*Eucalyptus Sargentii*), originally named from Lake Mears between Dangan and Kweda, on the salt river near where it enters the Avon. From there it can be traced in certain spots as far as Hines Hill, while it is also not uncommon on the east branch of the Mortlock River between Cunderdin and Wyola.

The salt river mallet is closely related to the brown mallet (*Eucalyptus astringens*), but is a smaller, more widely branched tree averaging about 20 feet in height, with a rough, flaky bark on the lower part of the trunk. This bark is a dark grey or almost black and is succeeded upwards by a greenish-brown, thin, smooth bark. The bark is fairly rich in tannin, and in the

early days of settlement of the eastern districts was used for tanning hides.

The heartwood is tough and dense, straight-grained, and dark brown in colour.

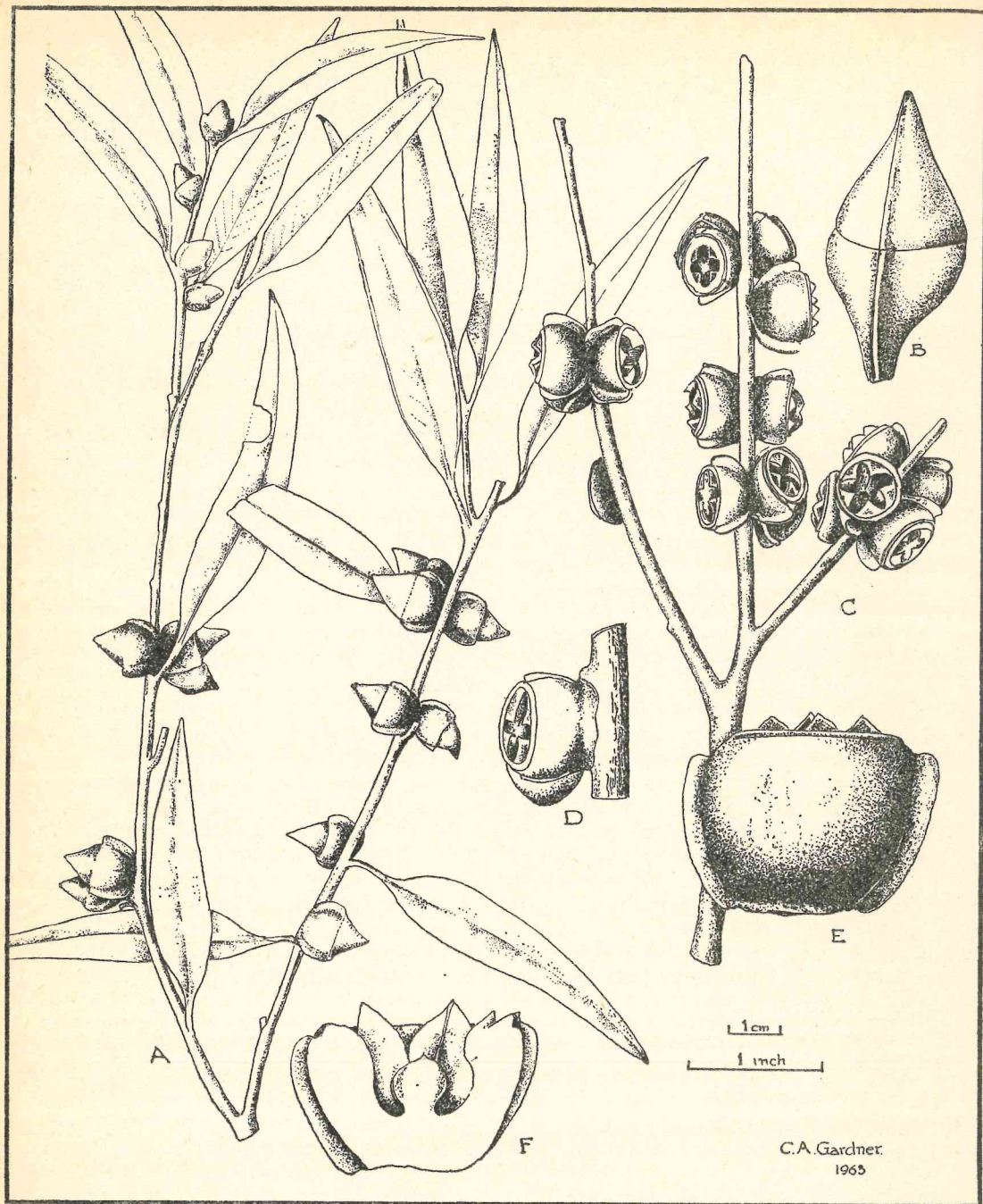
The salt river mallet is sometimes associated with a mallee form of *Eucalyptus spathulata*, which is also to some extent salt-tolerant.

Although it is salt-tolerant to a marked degree, often growing under conditions in which the other vegetation dies from excessive salt in the soil, the salt river mallet also dies but is the last tree or shrub to do so. For example, formerly common at Hine's Hill, much of the salt river mallet has died, and there are probably two factors involved: too much salt, and insolation through lack of soil protection.

The salt river mallet is being increasingly grown in many inland places in soils which are becoming saline. It is both hardy and rapid-growing as far inland as Wannarra Station, east of Perenjori, and it may be found in cultivation in many parts of the eastern wheatbelt.

Young plants are obtainable from the Forests Department's nurseries at Hamel and Dryandra.

Planting should be undertaken not later than the end of June. The young trees should be planted some distance from any visible superficial evidence of salt on the surface, their function—at least at first—being to restrict the spread of salt.



THE TWO-WINGED GIMLET
(Eucalyptus diptera C. Andrews.)

EXPLANATION OF PLATE

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

Salmon Gums, Gardner 14297, Sept. 1962.

Description

A small tree, rarely exceeding 25 feet in height, with a rather stout trunk, the greater part of this relatively short trunk covered by a thick, persistent dark grey, flaky bark, often thick and ragged; the bark of the upper parts thin and smooth and greenish-brown. The branchlets are slender, often drooping, reddish. Timber pale brown, straight-grained, hard and tough. Leaves alternate, spreading or drooping, narrow, lustrous on both surfaces with copious oil cavities.

Flowers in axillary or lateral three to seven flowered umbels on rather long slender recurved common stalks, the individual flower-stalks slender, and about as long as the fruits. The hypanthium (calyx-tube) is somewhat obconical or almost cylindrical, smooth, and about half as long as the bud-cap (operculum). The filaments are yellowish-white and erect

when in the unopened bud. The stamens are all perfect with narrow anthers opening longitudinally. The fruit is cylindrical-cupular, tapering into the stalk, less than half an inch in length, smooth, the disc narrow and the valves slender and needle-like. It flowers in the spring.

The salt river mallet is most closely related to the brown mallet (*Eucalyptus astringens*), differing in the smaller narrower fruits and the very slender needle-shaped valves of the fruit. The tree is of quite different habit, with widely-spreading branches, and the thick, platy, dark-coloured bark of the relatively shorter and stouter trunk is quite different from that of the brown mallet.

The name commemorates Oswald H. Sargent, formerly a pharmacist of York, who collected specimens in the York and Bruce Rock districts, and was the author of a number of species.

No. 102.—THE TWO-WINGED GIMLET

(*Eucalyptus diptera* C. Andrews.)

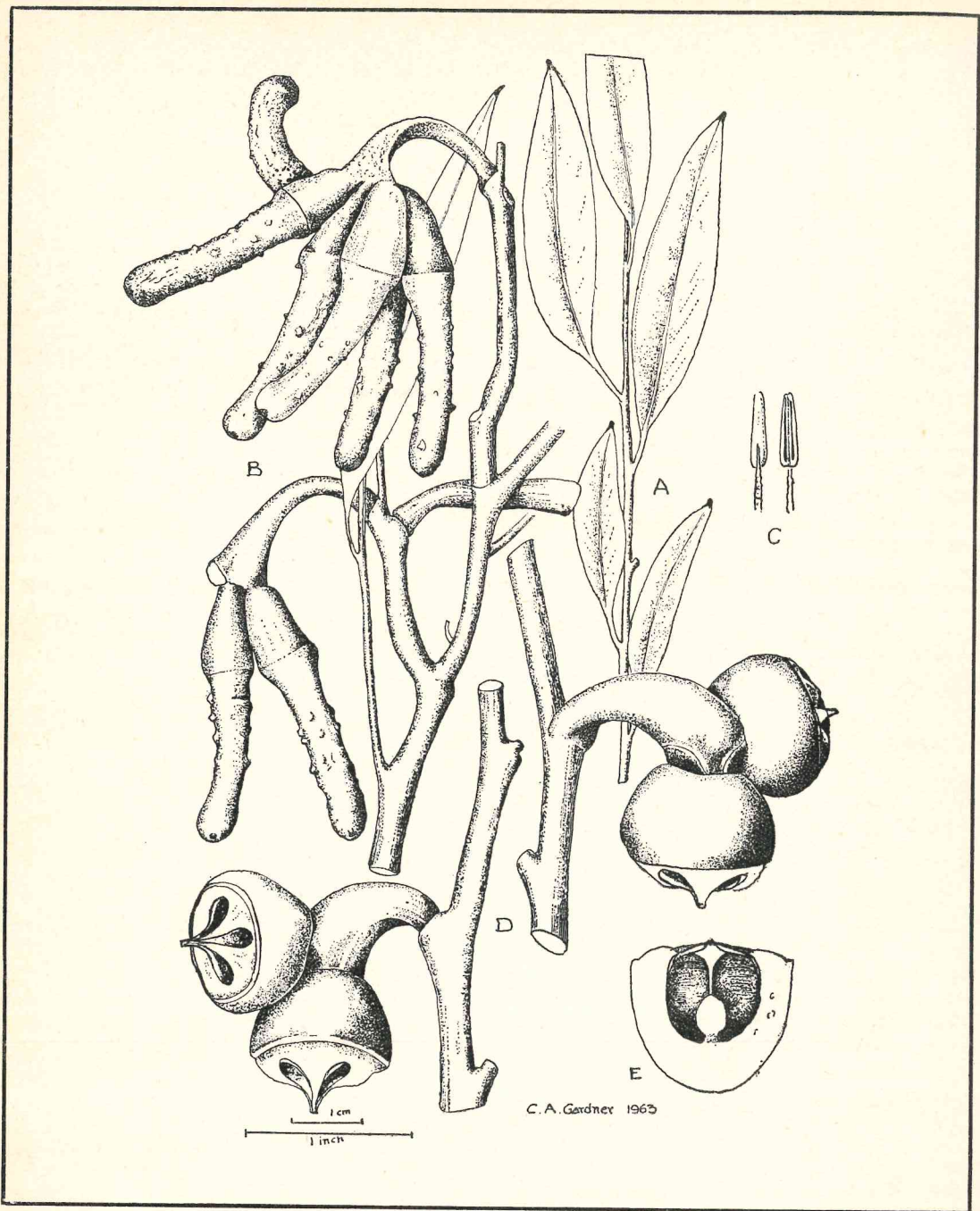
THE two-winged gimlet has the habit, colour and form of the common gimlet tree, even to the character of the fluted bark and often twisted trunk. However, it is much smaller, rarely exceeding 18 or 20 feet in height, and it never attains the girth of the gimlet.

Its relationship to the gimlet tree is obscure and it remains a very distinctive tree because of its flowers and fruit. These are without stalk; the flowers—solitary, in pairs or in threes—are closely attached to the branch or branchlet, usually some distance below the leafy twigs. The two-winged character of the flowers—which gives the species its name—is quite unmatched within the genus. Also, there are not many species which are devoid of the common (peduncle) or individual (pedicel) flower stalks. The filaments of the flowers are greenish-yellow.

The branches are erect, the bark is a brownish-green in colour, quite smooth, and the hard, straight-grained timber is a light brown and very tough. The leaves are lustrous on both surfaces, well provided with oil cavities and typically broader than those of the gimlet tree.

The original material was collected and named in 1903 by Mr. C. Andrews, who found a tree in flower north of Esperance. It was without opercula, was not in fruit, and the species, as well as the locality in which it was found remained unknown until in May 1924, the writer rediscovered the tree near Salmon Gums, growing in clay.

Its range extends from the Circle Valley to near Norseman, but it does not appear to be widespread in its range. It is stated by Blakely that it likes subsaline conditions, but I have not seen the trees except in the clay soil of the woodlands, under conditions where salt is not evident in the soil. It flowers in May. Trees more than 20 feet high are rare, and it is occasionally found in thicket formation. The size of the flowers and fruits is variable; specimens with fruits over three quarters of an inch in diameter are not uncommon.



EUCALYPTUS BURDETTIANA Blakely et Steedman

EXPLANATION OF PLATE

A—Branchlet with leaves. B—Branchlet with flower-buds. C—Anthers (enlarged). D—Fruits (immature).
E—Section of mature fruit.

East Mount Barren, Gardner 14351.

No. 103—EUCALYPTUS BURDETTIANA Blakely et Steedman

THIS species is a shrub or mallee, usually about five feet tall, but in rocky declivities it may attain a height of 12 feet or more.

It has erect branches, and the stems and branches smooth-barked. The bark is greenish, becoming brown. The leaves are rather small, always tipped by a dark, blunt apex like those of *E. Stoaiei*, green and lustrous, and erect.

The flowers are in heads on thick, deflexed peduncles, quite sessile, and three to seven together in the head. The calyx is cylindrical-campanulate and smooth or slightly rough to the touch, and the elongated operculum or bud-cap is cylindrical but expanded at the base, and very obtuse. It has a number of small irregularly-placed warts which give it a distinctive appearance, and the blunt apex bears a dark, pit-like depression. The filaments are green and erect within the bud, somewhat wrinkled throughout their length, and the elongated anthers are attached slightly above the base. The expanded flowers have not been seen.

The fruit is subglobular or globular-cup-shaped, smooth, or occasionally with a prominent single rib, and rounded at the

top. The valves, three or four in number arise from the domed summit of the ovary, becoming united at the tips, but these tips are relatively short.

The species commemorates Mr. W. Burdett, a South Australian horticulturist who visited South Western Australia on several occasions and raised many plants in his garden at Basket Range near Adelaide. It is confined to East Mount Barren and the quartzite spurs or ridges which radiate in the northerly direction from the mountain, and to my knowledge is not found elsewhere.

It bears a close relationship to *Eucalyptus megacornuta*, the "warted yate" of the Ravensthorpe district, differing in the smaller flowers, differently shaped and less warted operculum, and in the shape of the fruits; in addition the flowers and fruits of *E. Burdettiana* are smaller than those of *E. megacornuta*, the latter a gimlet-like tree, while *E. Burdettiana* is always a shrub or mallee. It flowers in the summer.

No. 104—THE MOORT

(*Eucalyptus platypus* Hook.)

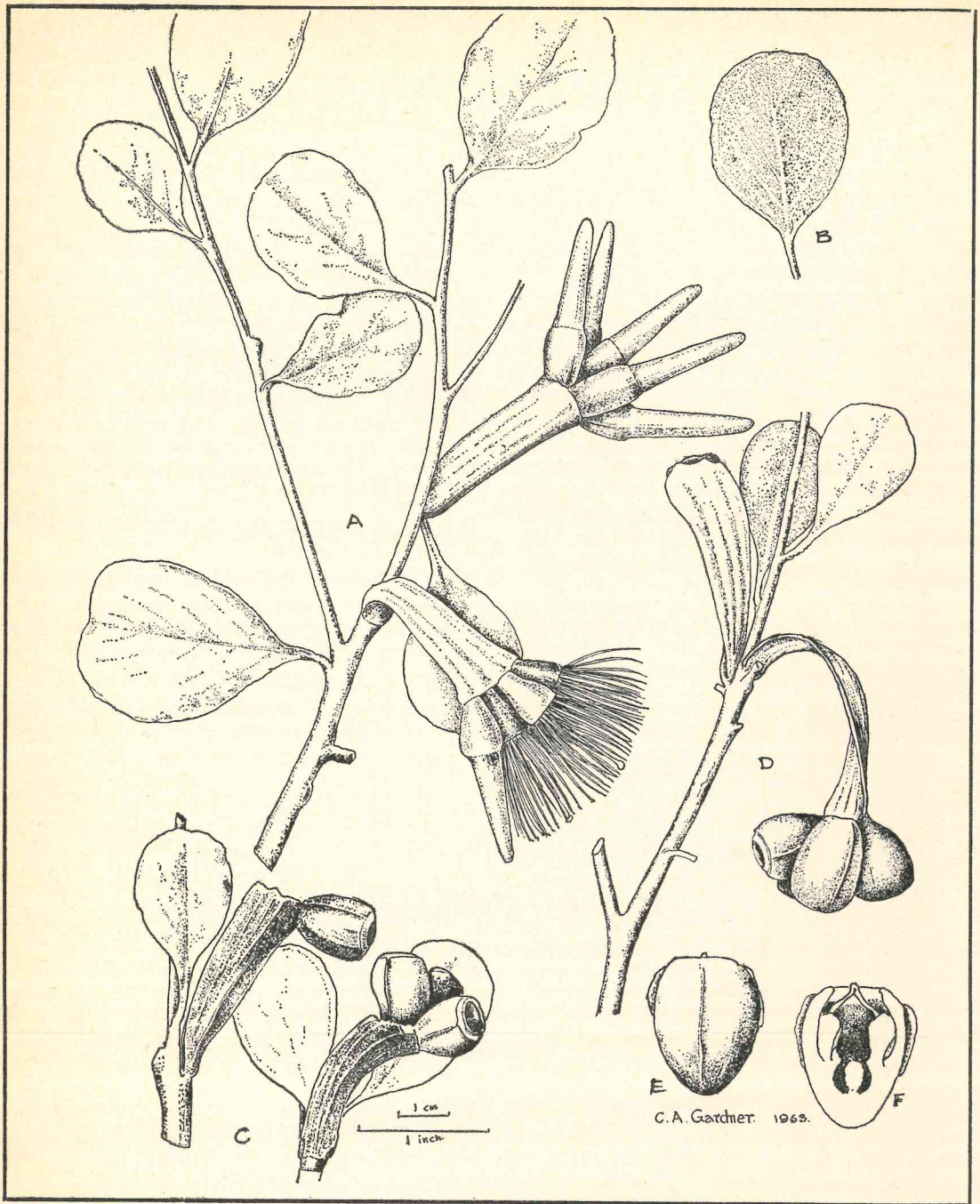
THE Moort usually occurs as a small tree 10 to 20 feet tall, with rather a stout trunk and spreading leafy branches. The bark is smooth and yellowish in colour, or sometimes rough in the lower part, and the pale timber is strong and straight-grained.

The typical form has roundish, very obtuse or notched leaves which are lustrous, but not a bright green, rather a dark, oliveaceous green. The leaves are thick, obscurely veined, and often wavy-margined.

The relative lengths of the broadly flattened peduncle and the horn-shaped operculum exhibit considerable variation, the operculum varying from rather shortly conical to much elongated. The form illustrated is the one with long peduncles.

In some specimens the operculum at the base is much narrower than the top of the hypanthium; in others (as in the specimen illustrated here) it is only slightly narrower.

The foliage also exhibits considerable variation, the leaves varying from almost round to obovate or shortly oblong, and in the variety *heterophylla*—mainly centred around the Kundip-Hamersley River district and the littoral at Hopetoun—the leaf may be narrow-oblong or broadly



THE MOORT
(*Eucalyptus platypus* Hook.)

EXPLANATION OF PLATE

A—Branchlet with leaves and flower-buds. B—Leaf of the typical form. C and D—Fruits. E—Fruit. F—The same in longitudinal section.

Gnowangerup, Gardner 1871.

lanceolate. There are some forms which appear to connect the two.

The filaments are either red or yellow, both forms being common. The red-filamented form is more attractive when the trees are in blossom.

Eucalyptus platypus occurs mainly in a heavy, grey clay soil, and sometimes we find whole colonies of this species growing to the exclusion of practically everything else. It is the type of soil which is not readily permeable and requires a considerable amount of rain before it becomes wet. When this occurs it is found to be a clay

of great tenacity. It is frequently associated with limestone.

The range of the species extends from Pingrup district south to Gnowangerup, and east to Esperance, but the main areas of its occurrence are those found in the Ravensthorpe district.

This species has much to recommend it as a shade tree, and it is grown to some extent in the metropolitan district, but in the prevailing sandy soil, the habit is more lax, and it does not develop into the robust species found in the heavy clay soils of its natural habitat.