

TREES OF WESTERN AUSTRALIA

By C. A. GARDNER.

No. 22—THE DUNDAS MAHOGANY (*Eucalyptus Brockwayi* C. A. Gardn.)

AMONG the most popular trees for planting in the agricultural areas is the Dundas mahogany which, while closely resembling the salmon gum superficially, is even more attractive because of its deeper green crown and paler-coloured bark. Like the salmon gum it thrives in low rainfall areas in loamy or sandy loamy soil.

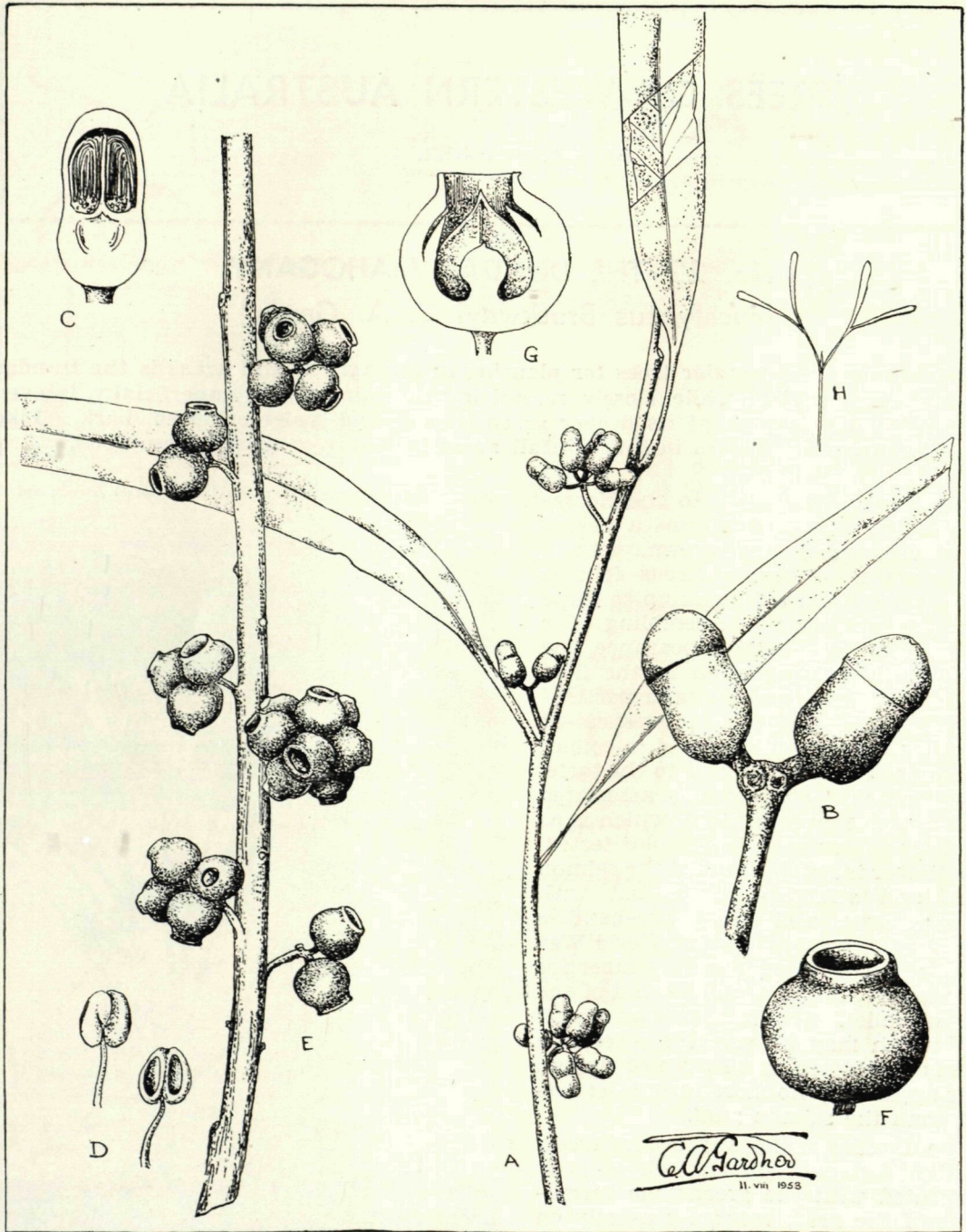
The tree is indigenous to the Norseman district where it attains a height of 80 feet when well grown, with a broad crown of deep lustrous foliage, and a smooth-barked trunk up to three feet in diameter. Resembling the salmon gum in general appearance, the tree may be distinguished in the field by the usually paler bark, and particularly by the bark characteristics—in fracture it is a deep blood-red in colour, gummy and very astringent to the taste. This “gummy” character is associated with a high tannin content, which is as much as 42 per cent. in samples tested. The timber is red like that of the salmon gum, and straight-grained, but with longer fibres, and when axe-handles were in short supply during World War II, this tree provided a useful timber for the purpose, being much like that of the brown mallet. This indicates an elasticity which may be valuable when the tree is considered as a source of timber. It is apparently no more termite-resistant than the salmon gum.

The Dundas mahogany occurs freely in the Norseman district where it is associated with the greenstone formations of the area, occurring usually on flats or the lower slopes of hills, and associated with salmon gum, morrell, merritt and the Dundas blackbutt.

The young plants are distinctive by reason of their very narrow and somewhat crowded foliage, and until they attain a height of about 15 inches they

Fig. 1.—The Dundas Mahogany (*Eucalyptus Brockwayi* C. A. Gardn.)





DUNDAS MAHOGANY (*Eucalyptus Brockwayi*, C. A. Gardn.). A—Branchlet with leaves and flower-buds; B—Flower buds; C—Flower-bud in section; D—Anthers; E—Branchlet with fruits; F—Fruit; G—Fruit in section; H—Cotyledons. (B, C, F and G enlarged.)

10 m. N.W. from Norseman,
Brockway and Gardner.

Icon origin.

resemble a tea-tree rather than a *Eucalyptus*. Later on they change abruptly from this narrow form of leaf to the normal form.

BOTANICAL DESCRIPTION

Tree 60-80 feet tall, the trunk up to 25 feet in length, and 2-3 feet in diameter. Bark smooth throughout, white or salmon-coloured, the outermost layers peeling off in thin purple patches, the new bark white, deep red in fracture, "gummy" and astringent. Timber red. Branchlets reddish, acutely angular. Leaves alternate, stalked, spreading or drooping, narrow-lance-shaped, rather thick, deep green on both sides lustrous, copiously oil-dotted, the lateral nerves relatively few and diverging from the midrib at a rather wide angle the intramarginal nerve distant from the leaf-margin. Umbels axillary and lateral, solitary, mostly 5-8-flowered, the peduncle spreading, slightly compressed, 1cm. long; pedicels short, mostly 1mm. long, slender. Buds smooth. Calyx-tube shortly cylindrical, broad and rounded at the base, 4 mm. long; operculum hemispherical or broadly ovoid, much shorter than the calyx-tube, obtuse. Filaments yellowish-white, inflected in the bud; anthers ovoid, versatile (attached by the middle) opening in distinct longitudinal separate slits. Fruit urceolate-globular, smooth, much contracted and shortly cylindrical at the summit, 6 mm. diameter, the margin elevated, the disc vertical and lining the orifice of the calyx-tube, the valves included, broadly deltoid. Fertile seeds black, ovoid, smooth; cotyledons Y-shaped.

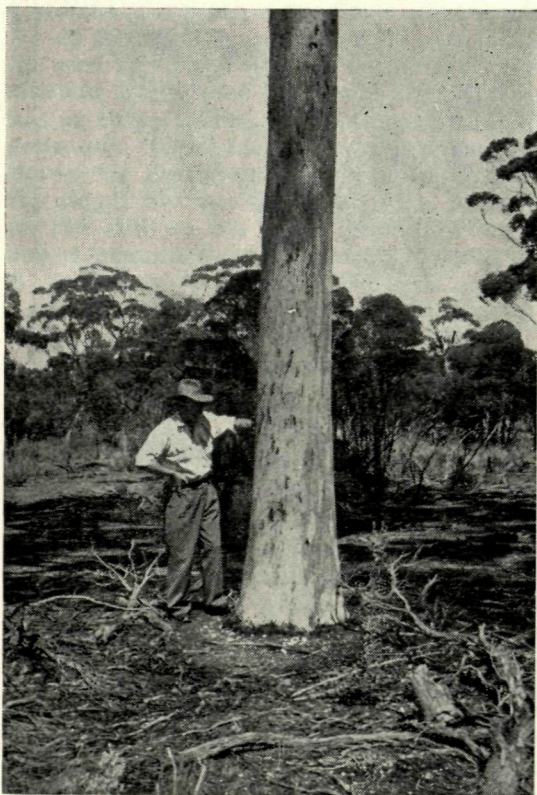


Fig. 2.—Dundas Mahogany showing size and general appearance of trunk.

Farmers will find this tree a useful shade tree for the agricultural areas, especially in the loamy soils of salmon gum country. It is of fairly rapid growth, provides a broad crown (provided the trees are well spaced), and the indications are that it is fairly salt-tolerant. Young plants are obtainable from the nursery of the Forests Department at Kalgoorlie. Planting should be done in late April or early May for the best results.

The name *Eucalyptus Brockwayi* commemorated George Ernest Brockway, former Superintendent of Inland Forests at Kalgoorlie, who first collected specimens of this tree in 1940.

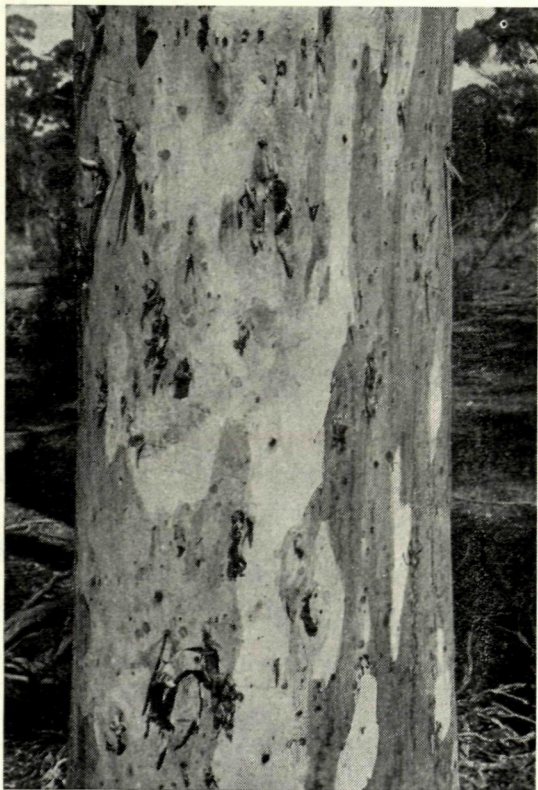
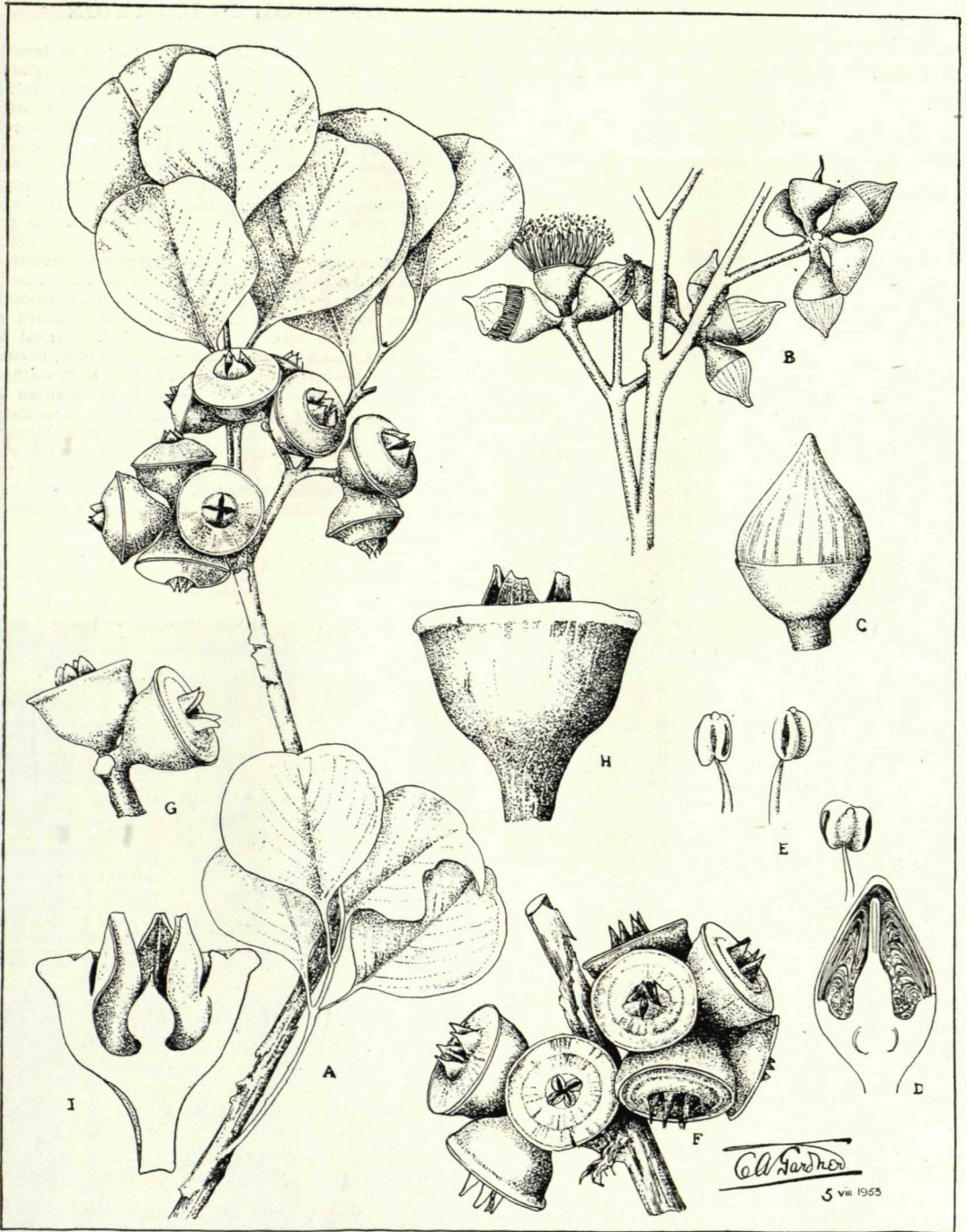


Fig. 3.—Close-up showing typical bark of the Dundas Mahogany.



ROUND-LEAVED MALLEE (*Eucalyptus orbifolia*, F. Muell). A—Branchlets with leaves and fruits; B—Flower-buds; C—Flower-bud; D—Flower-bud in section; E—Anthers; F—Fruits; G—Two buds detached from the umbel; H—Fruit (enlarged).

Pigeon Rocks,
G. E. Brockway, 1940.

Icon origin.

No. 24 THE ROUND-LEAVED MALLEE

(*Eucalyptus orbifolia* F. Muell.)

PERHAPS no other species of *Eucalyptus* has proved of so much interest to botanists as has *Eucalyptus orbifolia*. In 1865, Charles Harper, while exploring country to the east in search of land suitable for grazing, collected at the foot of granite rocks in latitude 30° 47' and longitude 119° 25' a small fragment of *Eucalyptus* consisting of two or three leaves, one flower bud and one expanded blossom. There were no fruits collected. This fragment was described by the Government Botanist of Victoria, Baron Sir Ferdinand Mueller, under the above name, and the specimen was sent to the Royal Botanic Gardens, Kew, where it exists today. The original locality is close to Tin Hill on the track leading from Southern Cross to the Koolyanobbing Range, but it remained undiscovered, despite searches for it until May, 1940, when Mr. G. E. Brockway found it at Hospital and Pigeon Rocks to the west of Mulline and northwards from Bullfinch respectively. Still more recently it has been found 14 miles north-easterly from Weira Siding.

The plant has been raised from seeds from these localities, and will shortly be available for distribution from the Kalgoolie Nursery of the Forests Department. It is a mallee attaining a height of 25 feet, and is of attractive appearance by reason of its striking bark like that of *E. caesia*, and its white branches, buds and fruits, and particularly its curiously rounded notched leaves. A characteristic not observed in any other *Eucalyptus*, and noted by the boanists of the last century is the extraordinary thickened style (see fig. D) and the very rigid and prominent valves which protrude from the hemispherical-bell-shaped fruits.

As observed by Charles Harper, the species is as far as we know restricted to granite outcrops, but this should not pre-

vent it from being cultivated in many types of soil in gardens. The flowers (filaments) are yellowish-white.

BOTANICAL DESCRIPTION

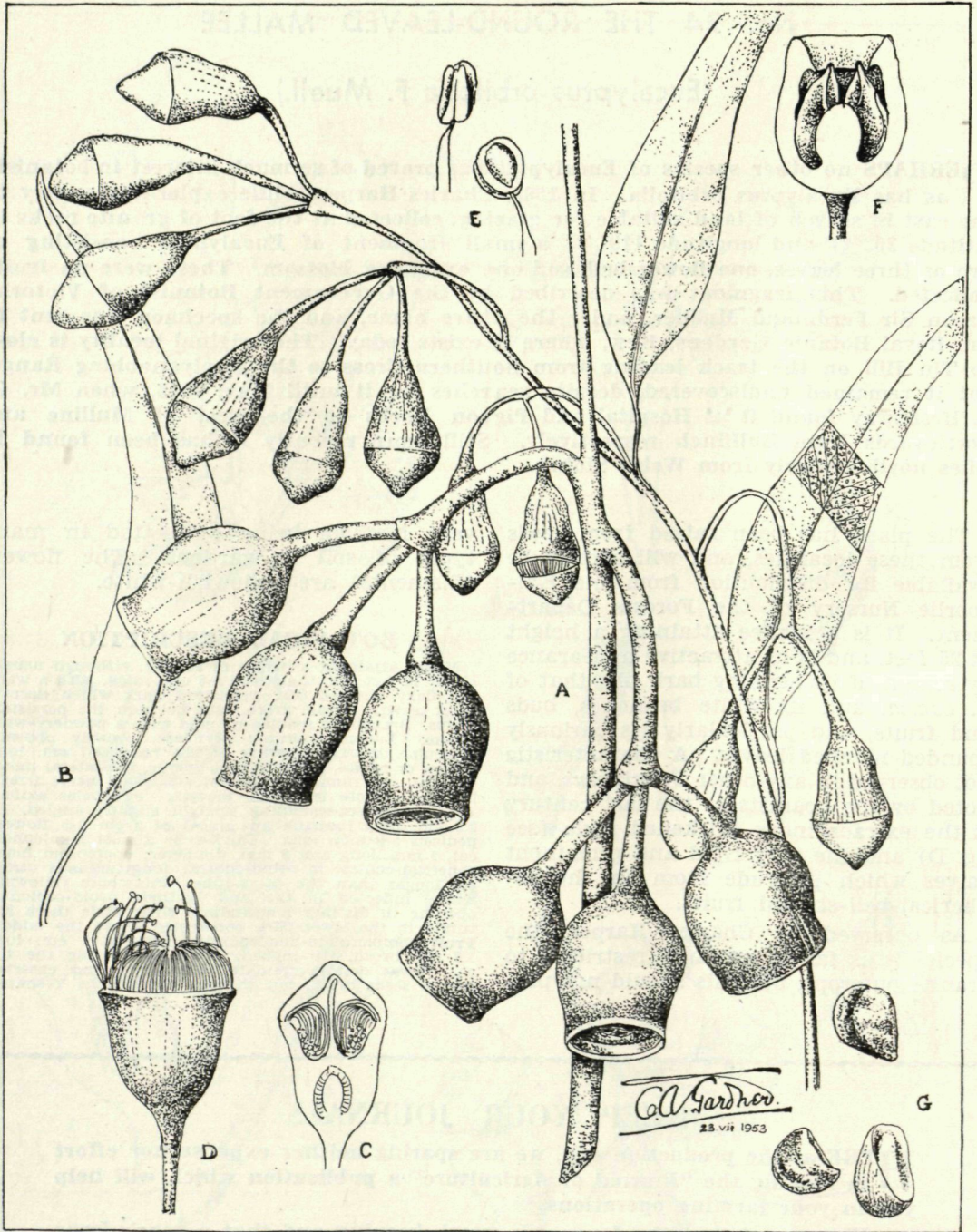
Mallee attaining a height of 25 feet, although usually about 18 feet tall, the stems 5-6 cm. thick, with a warm red flaky striated thin persistent bark which decorticates leaving a pale green bark between the persistent strips. Branchlets reddish-covered with a powdery-white bloom. Leaves alternate petiolate, broadly obovate-orbicular, shortly tapering at the base, 3-7 cm. long, obtuse or retuse, grey-green in colour, the lateral nerves parallel, not numerous the intramarginal nerve irregular and remote from the margin. Peduncles axillary or lateral erect-spreading straight slightly angled, 1.5-2.5 cm. long, bearing an umbel of from 2-5 flowers; pedicels 5-9 mm. long. Calyx-tube almost hemispherical, 5 mm. long and 8 mm. diameter; operculum hemispherical-conical to ovoid-conical, longitudinally striated, longer than the calyx-tube. Filaments yellowish-white, inflected in the bud; anthers ovoid-orbicular, opening in distinct longitudinal slits; style thick and turgid in the lower part, contracted above the middle. Fruit campanulate-hemispherical, woody, 1 cm. long, 1.7 cm. broad, flat-topped, the disc covering the top, the valves deltoid-subulate, very rigid and exserted. Fertile seeds black, not winged. Cotyledons Y-shaped.

KEEP YOUR JOURNALS

HERE at the production end, we are sparing neither expense nor effort in making the "Journal of Agriculture" a publication which will help you in your farming operations.

We suggest that the Journal is worth keeping and that a year's issue will make an attractive and useful volume for your library—a volume that is full of sound factual information, attractively presented.

Arrangements have been made for the compilation of a comprehensive index to be incorporated in the December issue—a feature which will greatly enhance the value of the Journal as a work of reference.



GUNGUNNU (*Eucalyptus caesia*, Benth). A—Branchlets with buds and fruits; B—Leaf; C—Flower-bud in section; D—Flower with the filaments commencing to expand; E—Anthers; F—Fruit in section; G—Seeds.

Perth, W.A.

Icon Origin.

(Eucalyptus caesia Benth.)

FOR the want of a good descriptive common name for this handsome mallee I have used the name which Richard Helms stated was used by the aborigines of the Fraser Range district. Helms stated that the natives ate the roots of his species. As far as I can ascertain, the specimens recorded by Helms were from 40 miles N.W. from Fraser Range. The specific name "caesia" is from the Latin caesius (blue of the eyes) and refers to the blue-grey or pale grey powdery appearance of the leaves, and more particularly the branchlets, buds and fruits. The flowers are a pale rose-pink in colour.

This species, usually a mallee 18 to 20 feet tall, but with the branches and foliage often measuring more in diameter, is well known in cultivation. It is particularly handsome in that it combines an attractive bark with white branches, blue-green leaves and masses of rose-pink blossoms and attractive fruits. It is one of the few *Eucalyptus* species which confine themselves under natural conditions to the vicinity of granite outcrops, hence we find it recorded from a few widely scattered localities, such as Ueberin Hill near Dowerin, Mount Caroline southwards from Kellerberrin, the rocks of Warren Double Cunyon northwards from Westonia, the vicinity of the Fraser Range, and the Victoria Desert. In all of these it is nowhere so common as around Mount Caroline, and perhaps there are no more beautiful examples than the small broad-leaved mallee form that is found northwards from Westonia. The plant was first collected by James Drummond when he made his Fifth Collection—a trip that took him from Toodyay through Tammin, Karlgarin and Mount Short to the Ravensthorpe district and Middle Mount Barren in 1849.

The bark is longitudinally crisped, the narrow flakes of cinnamon coloured bark disclosing an under-bark of pale green. An exactly similar bark is to be found in other inland species associated with granitic rocks, namely, *E. Kruseana*, *E. crucis*, *E. orbifolia*, *E. Websteriana* and some forms of *E. leptopoda*. It has also been observed in one locality to be a peculiarity of *Eucalyptus Drummondii*, which has typically a smooth white bark.

The Gungunnu has no close relatives. The fruits are shaped something like those of the marri or red-gum, but the flowers and foliage are entirely different. It also has a general resemblance to *Eucalyptus sepulcralis*, a small tree of the Ravensthorpe district, but the resemblance here also is restricted to the shape of the fruits. It is really an anomalous species scattered over a wide area with a very restricted soil type. This, however, does not prevent its being cultivated in many types of soil. It thrives, for example, in the sands of the metropolitan district, and equally well in the sandy loams of the interior. It is recommended for planting for ornamental purposes.

BOTANICAL DESCRIPTION

A shrub or mallee, 15-20 feet tall, rarely a small tree. Bark of the stem and branches rough, with longitudinal strips of cinnamon-brown bark with crisped margins revealing a pale green inner smooth bark. Timber pale brown. Branchlets smooth, covered with a white or blue-white powder. Leaves alternate, stalked, spreading or drooping, ovate-lanceolate to lanceolate, tapering at the apex, grey-blue in colour on both surfaces, the midrib prominent, the lateral nerves not numerous and diverging from the midrib at a moderately wide angle, the intramarginal nerve remote from the leaf-margin. Oil-dots few and scattered. Umbels axillary, lateral, or rarely forming terminal panicles by leaf-abortion, the slender peduncles recurved, 2-3 cm. long; pedicels slender, 10-15 mm. long, thickened upwards. Buds powdery-grey. Calyx-tube campanulate, striate with fine longitudinal lines otherwise smooth; 1-1.5 cm. long; operculum umbonate-hemispherical, smooth, the umbo somewhat broad and very obtuse. Filaments incurved in the bud, rose-pink in colour; anthers nearly orbicular, versatile, opening in broad lateral slits. Fruit urn-shaped, 18-20 mm. long, powdery-grey-white, striated with fine lines, the disc broad and sloping inwards, the capsule with broad included valves. Seeds hemispherical-ovoid; cotyledons Y-shaped.