

CABBAGE GUM

(*Eucalyptus clavigera* A. Gunn, ex Schau.)

A—Branchlet with stalked leaves; B—Inflorescence with flower buds; C—Flower bud; D—Anthers; E—Fruits;
F—Fruit in section

[Walcott Inlet, Gardner 1588]

TREES

of Western Australia

By C. A. GARDNER, Government Botanist

No. 55—CABBAGE GUM

(*Eucalyptus clavigera* A. Cunn. ex Schau.)

THIS tree is one of the common trees of Kimberley, inhabiting the sandy soils of the sandstone ranges, but is found less frequently on the sandy flat country. It is most common in northern Kimberley extending as far south as the King Leopold Range, and is less frequently encountered on the plains of the Ord and Fitzroy Rivers. The species is an erect tree 20 to 35 ft. tall with widely spreading densely-foliaged branches and horizontally-expanded leaves. The trunk attains a length of 18 ft. and a diameter of about 20 in.

The bark of the lower parts, and occasionally over almost the whole of the trunk is tessellated, flaky and thick, persistent and dark grey in colour; the bark of the upper part of the trunk is smooth and white, decorticating in large grey plates leaving the young inner bark at first a greyish-pink colour. The timber is red.

A characteristic of the tree is the rough surface of the leaves which are commonly broad and blunt at both ends, stalkless or stalked and frequently cordate at the base. The leaves are pale green in colour. The white flowers are borne on long stalks and arranged in condensed panicles along the branchlets, and the long-stalked fruits are conspicuously veined and fragile. They do

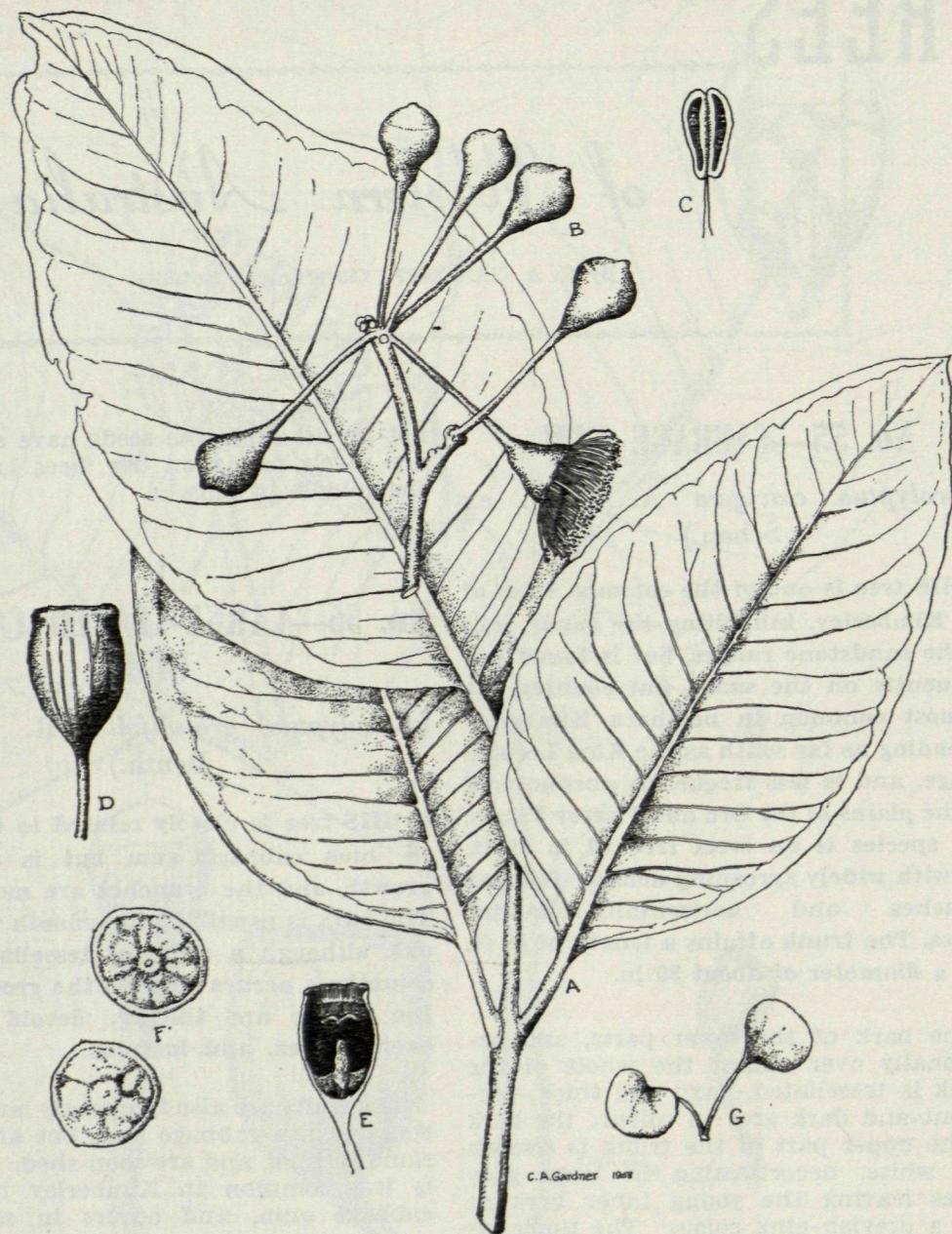
not persist after the seeds have shed, and are rarely found on the trees later than the middle of May.

No. 56—LARGE-LEAVED CABBAGE GUM

(*Eucalyptus grandifolia* R. Br. ex Benth.)

THIS tree is closely related to the common cabbage gum but is of taller growth, and the branches are more erect. The bark is usually quite smooth throughout, although a collar of tessellated bark sometimes occurs close to the ground, and the leaves are thicker, devoid of any excrescences, and lustrous.

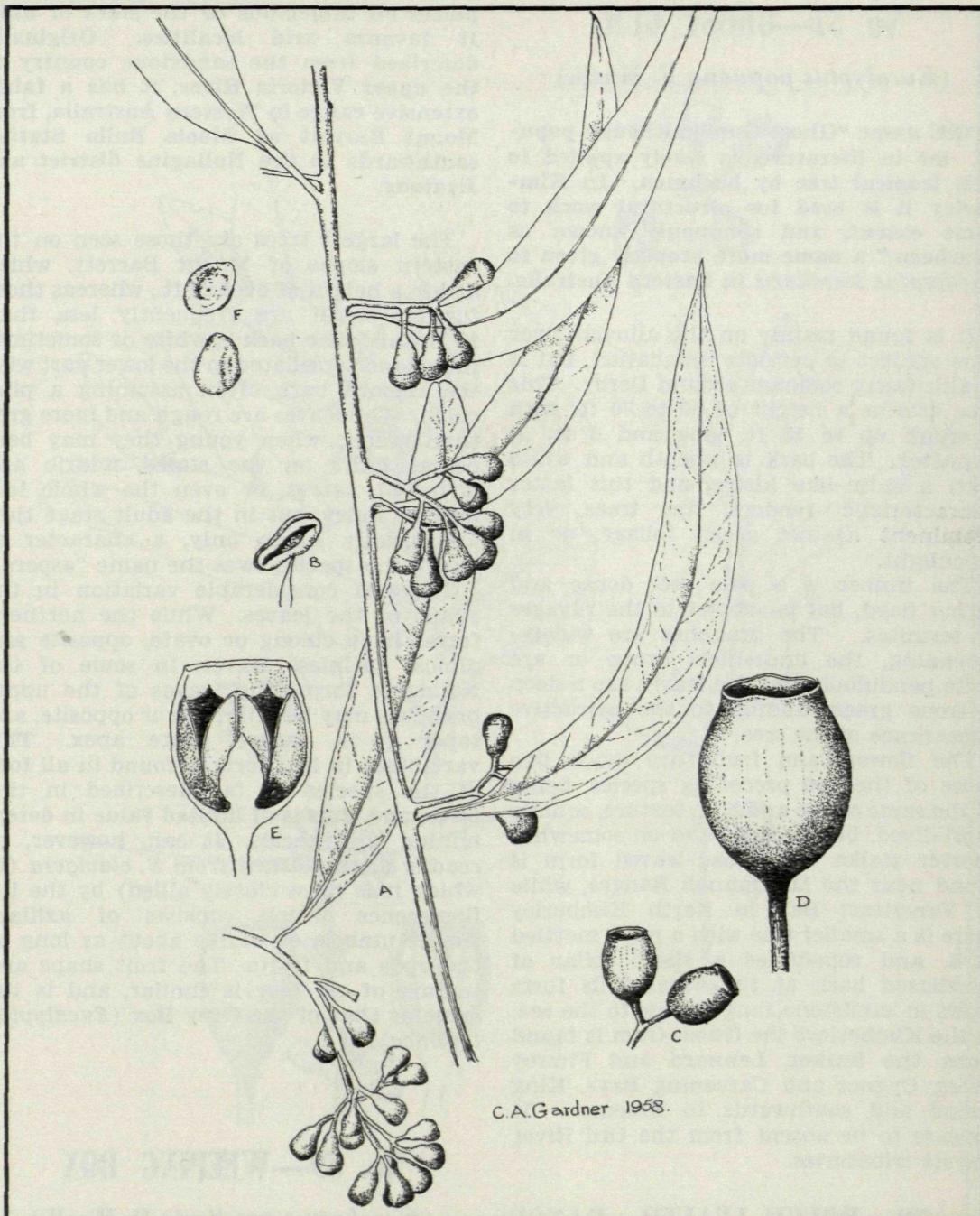
The fruits are also frequently larger than those of the cabbage gum but are of the same texture, and are soon shed. The tree is less common in Kimberley than the cabbage gum, and occurs in sandstone country among rocks from the Artesian Range northward. It is found eastwards to the Ord River, extending into the Northern Territory. This tree could be mistaken for *Eucalyptus Foelscheana* when only in leaf, but a reference to the illustrations of both shows at once the different venation, the veins of *E. Foelscheana* being closer together and much finer than those of *E. grandifolia*.



C. A. Gardner 1958

LARGE-LEAVED CABBAGE GUM
(Eucalyptus grandifolia R. Br. ex Benth.)

A—Branchlet with three leaves; B—Flower buds; C—Anther; D—Fruit; E—Fruit in longitudinal section;
 F—Seeds; G—Cotyledons
 [Cockatoo Sands, lower Ord River, Gardner 7324]



C.A.Gardner 1958.

GHOST GUM
(Eucalyptus papuana F. Muell.)

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

[Derby, Gardner 1929]

No. 57—GHOST GUM

(*Eucalyptus papuana* F. Muell.)

THE name "Ghost Gum" although popular in literature, is rarely applied to this tropical tree by bushmen. In Kimberley it is used for structural work to some extent, and commonly known as "Carbeen," a name more properly given to *Eucalyptus tessellaris* in Eastern Australia.

It is found mainly on the alluvial river-flats subject to periodic inundation, but it is also fairly common around Derby. This tree attains a height of 50 to 70 ft. with a trunk up to 18 ft. long and 2 ft. in diameter. The bark is smooth and white with a satin-like lustre, and this latter characteristic renders the trees very prominent against green foliage, or in moonlight.

The timber is a pale red, dense and rather hard, but is subject to the ravages of termites. The branches are widely-spreading, the branchlets droop or are quite pendulous, and the leaves are a deep lustrous green, adding to the attractive appearance of the tree.

The flowers and fruits are much like those of the two preceding species, being of the same shape and thin texture, equally short-lived, but smaller, and on somewhat shorter stalks. A broad-leaved form is found near the Macdonnell Ranges, while at Vansittart Bay in North Kimberley there is a smaller tree with a more mottled bark, and sometimes a short collar of tessellated bark at the base. This form grows in sandstone ranges close to the sea. In the Kimberleys the Ghost Gum is found along the Barker, Lennard and Fitzroy rivers, Cygnet and Careening Bays, King Sound and southwards to Broome. It appears to be absent from the Ord River and its tributaries.

No. 58—ROUGH-LEAVED RANGE GUM

(*Eucalyptus aspera* F. Muell.)

THIS species is usually a small crooked tree rarely more than 25 ft. tall, and often much less, growing in dry stony

places on tablelands or the sides of hills. It favours arid localities. Originally described from the sandstone country of the upper Victoria River, it has a fairly extensive range in Western Australia, from Mount Barrett on Moola Bulla Station southwards to the Nullagine district and Jigalong.

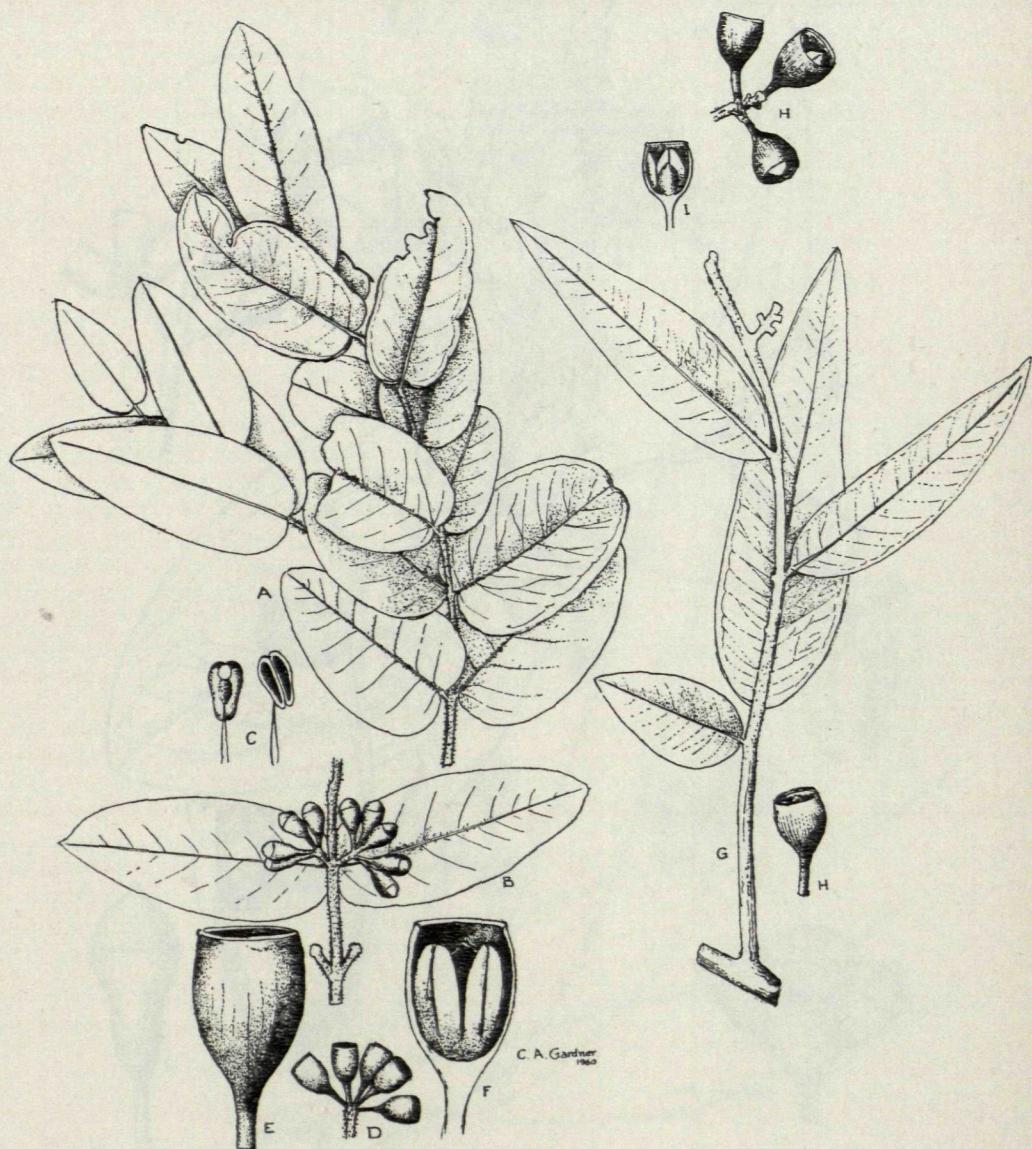
The largest trees are those seen on the eastern slopes of Mount Barrett, which attain a height of over 20 ft., whereas those further south are frequently less than 12 ft. tall. The bark is white or sometimes rough and tessellated in the lower part with the smooth bark often assuming a pink colour. The leaves are rough and more grey than green; when young they may bear coarse hairs on the stalks, midrib and principal nerves, or even the whole leaf may be hairy, but in the adult stage they are usually rough only, a character to which the species owes the name "aspera."

There is considerable variation in the shape of the leaves. While the northern forms have oblong or ovate, opposite and almost stalkless leaves, in some of the Nullagine forms the leaves of the upper branches may be alternate or opposite, and taper to a rather acute apex. This variability in leaf form is found in all four of the species so far described in this issue, and thus is of limited value in determining the species. It can, however, be readily distinguished from *E. clavigera* (to which it is most closely allied) by the inflorescence which consists of axillary simple umbels on stalks about as long as the buds and fruits. The fruit shape and texture of all four is similar, and is the same as that of the Grey Box (*Eucalyptus tectifica*).

No. 59—WEEPING BOX

(*Eucalyptus patellaris* F. Muell.)

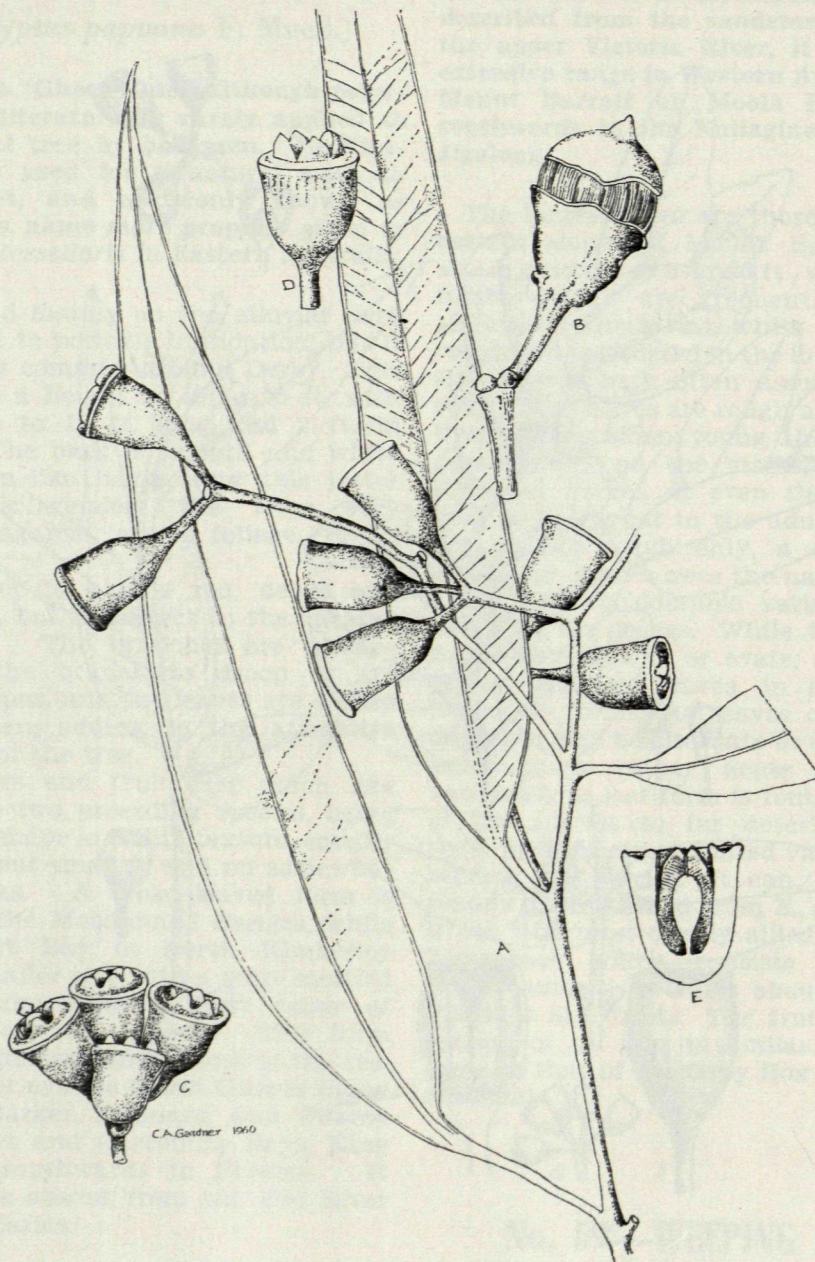
THIS species is a rough barked "box" tree up to 35 ft. tall, with the grey fibrous bark extending to the ultimate twigs. The foliage is grey-green, and the timber is brown in colour. The fruits are of woody texture with the valves usually shortly protruding.



ROUGH-LEAVED RANGE GUM
(Eucalyptus aspera F. Muell.)

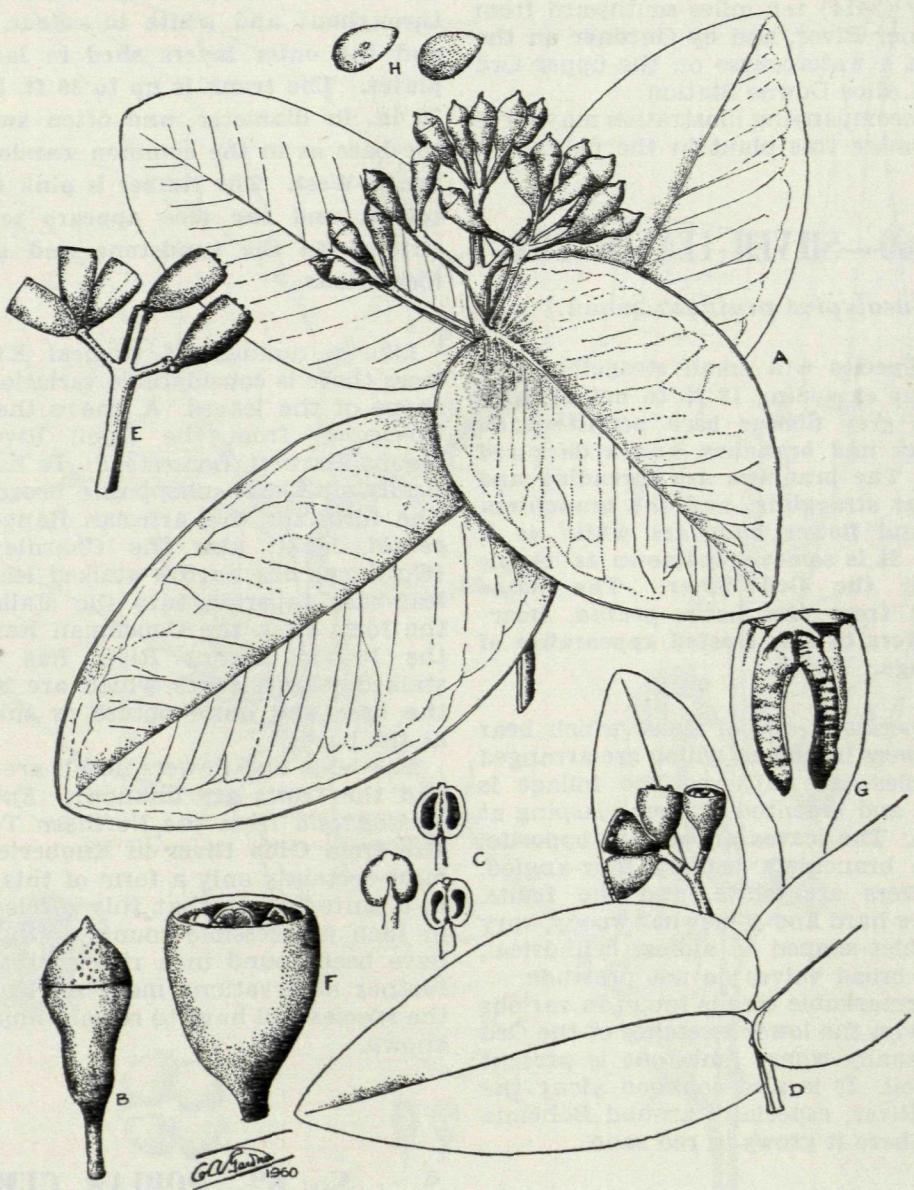
A—Leafy branchlet showing opposite sessile hairy leaves; B—Axillary inflorescence; C—Anthers; D—Umbel of fruits; E—Fruit enlarged; F—Fruit in longitudinal section; G—Branchlet with alternate narrow pointed leaves; H—Fruits; I—Fruit in section

[A, E, and F Mount Barrett Gardner 10200; B, C and D from Flockton, Maiden's Critical Revision of the genus Eucalyptus; G, H. and I, Five Mile Creek, Nullagine, G. E. Brockway]



WEEPING BOX
(*Eucalyptus patellaris* F. Muell.)

A—Branchlet with leaves and fruits; B—Flower bud; C—Cluster of fruits; D—Fruit; E.—Section of fruits.
[Near Turner River Perry 3200 except B, which is copied from a drawing of a bud from the type speci-
men—upper Roper River, Mueller July, 1856]



SILVER-LEAVED BOX
(*Eucalyptus pruinosa* Schau.)

A—Branchlet with leaves and a terminal panicle of flower buds; B—Flower bud; C—Anthers; D—Branchlet with fruits; E—Fruits; F—Fruit (enlarged); G—Section of fruit; H—Seeds

[All from Bohemia Downs, Gardner 7124, except E, from Kimberley Boundary Survey in latitude 19°S, S. J. Stokes]

Little is known of this tree in Western Australia. It has been collected twice, once by Perry (2414) ten miles southward from the Turner River, and by Gardner on the banks of a watercourse on the upper Ord River at Alice Downs Station.

The accompanying illustration may serve to determine this plant in the field.

No. 60—SILVER-LEAVED BOX

(*Eucalyptus pruinosa* Schau.)

THIS species is a small straggling tree rarely exceeding 18 ft. in height, with a rough grey fibrous bark persistent on the trunk and branches, and a dark red timber. The branches are spreading and somewhat straggling, and the branchlets, leaves and flower buds are white as if frosted. It is sometimes known as "Apple Box" on the Ord River. The name *pruinosa* from the Latin *pruina*, hoarfrost, refers to this frosted appearance of the foliage.

The species is one of those which bear their flowers in umbels which are arranged in panicles (see A), and the foliage is stalkless and indented or stem-clasping at the base. The leaves are always opposite, and the branchlets usually four-angled. The flowers are white, and the fruits, which are hard and somewhat woody, vary from goblet-shaped to almost cylindrical, and the broad valves do not protrude.

This remarkable tree is found in various localities on the lower stretches of the Ord River, usually where limestone is present in the soil. It is also common along the Fitzroy River, especially around Bohemia Downs where it grows in red sand.

No. 61—KIMBERLEY WHITE GUM

(*Eucalyptus Houseana* W. V. Fitzg. ex Maiden.)

THE common tree found along the river flats of the Drysdale, King Edward, Mitchell, Moran, Carson and Glenelg Rivers is *Eucalyptus Houseana*, a tree

attaining a height of 60 ft. with erect or spreading branches. The bark is clean throughout and white in colour, smooth and the outer layers shed in large thin plates. The trunk is up to 30 ft. long and 30 in. in diameter, and often swollen at the base as in the common wandoo of the South-West. The timber is pink to red in colour, and the tree appears to be restricted to the sandstone and quartzite formations.

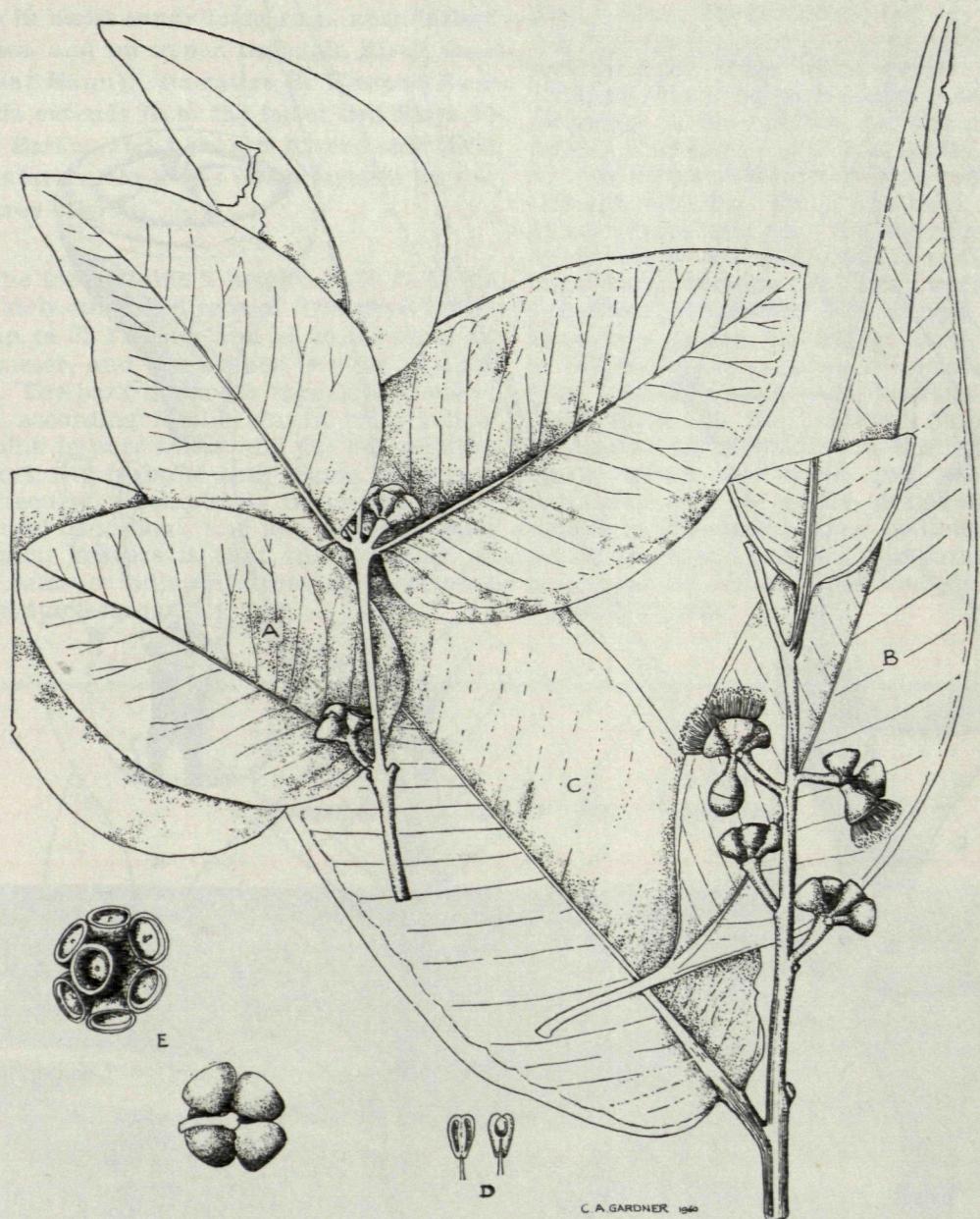
Like a number of tropical Kimberley trees there is considerable variation in the shape of the leaves. A shows the foliage *Houseana*, from the Isdell River near Mount Barnett homestead. It has practically stalkless, subopposite broad leaves. The form for the Artesian Range (Fitzgerald 1357), also the Charnley River (Gardner) has narrow-stalked leaves, the leaf-base tapering into the stalk; while the form from the Couchman Range and the Prince Regent River has shortly-stalked, blunt leaves which are broad at the base and quite obtuse or subcordate at the base.

The buds and flowers off all are similar, and the fruits are unknown. *Eucalyptus apodophylla* from the Northern Territory, also from Gibb River in Kimberley is almost certainly only a form of this species. It is unfortunate that this species occurs in such inaccessible country. Until fruits have been found in a ripe condition and further observations made on leaf forms the species will have to remain imperfectly known.

No. 62—POPLAR GUM

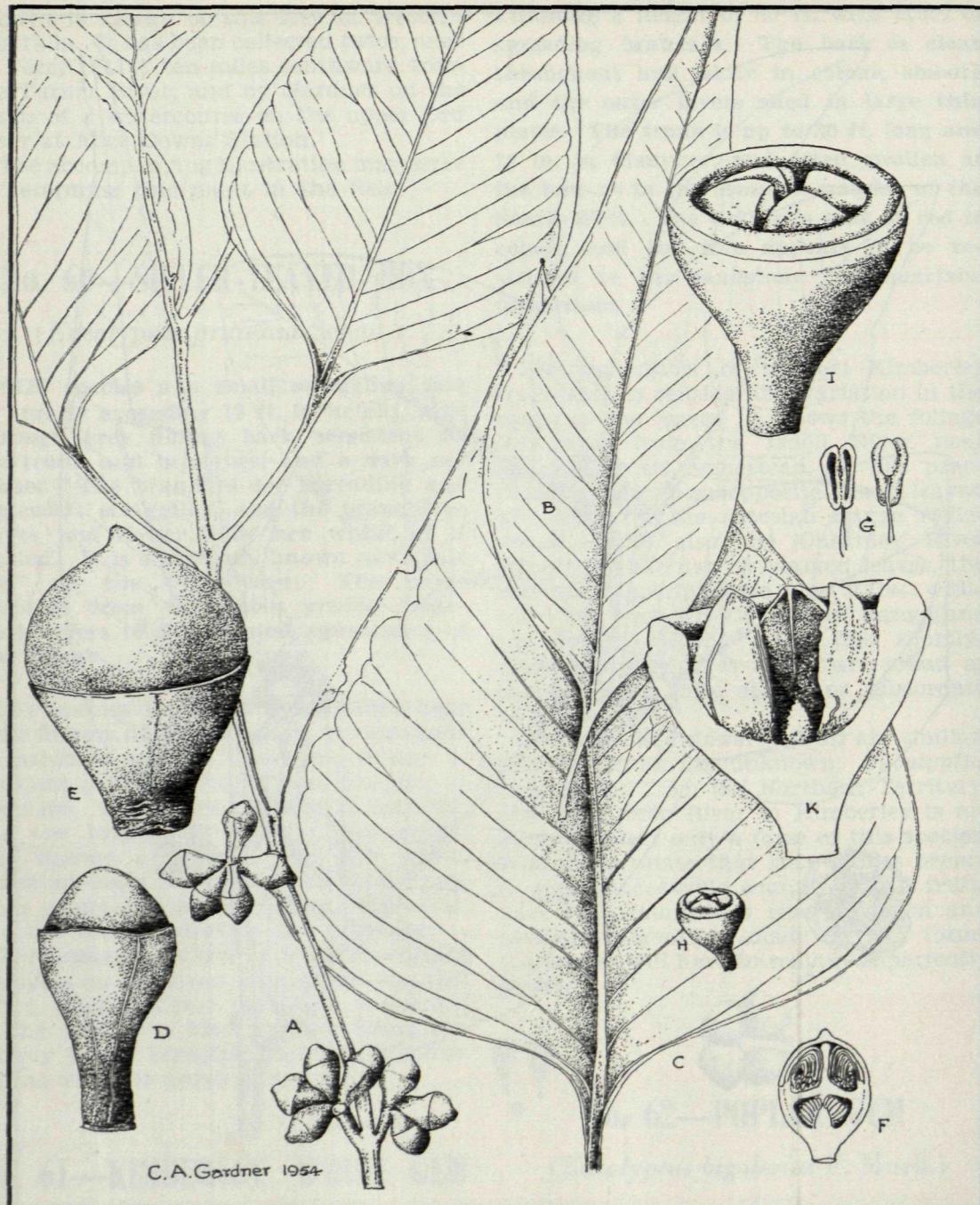
(*Eucalyptus bigalerita* F. Muell.)

THE Poplar Gum is found in various parts of Kimberley and adjacent Northern Territory, but as far as the writer has observed it in Western Australia it is usually found on alluvial soils which are subject to inundation in summer or for a considerable part of the year. It is



KIMBERLEY WHITE GUM
(*Eucalyptus Houseana* W. V. Fitzgerald ex Maiden.)

A—Leaves, flower buds and immature fruits from Isdell River near Mount Barnett homestead, W. V. Fitzgerald 1014 (Type); B—Leaf from Artesian Range (Fitzgerald 1357); C—Branchlet from watercourses in Couchman Range (Gardner); D—Anthers; E—Clusters of immature fruits, from Couchman Range



POPLAR GUM

(*Eucalyptus bigalerita* F. Muell.)

A—Branchlet with leaves and buds; B—Narrow leaf; C—Broad leaf; D—Flower bud; E—Flower bud much enlarged; F—Flower bud in section; G—Anthers; H—Fruit (natural size); I—Fruit (much enlarged); K—Fruit in longitudinal section

[Lennard River, Gardner]

usually found in clay soils, but sometimes also in moist sandy loam (e.g., near Mount Agnes, and on upper Drysdale River near Mount Hann). Its range in Western Australia extends from the lower Ord River to the Barker and Lennard Rivers and their tributaries, but it has not been seen on the Fitzroy River.

The tree attains a height of 35 ft., with a widely-branched crown. The stout trunk is up to 25 ft. long and 16 in. or more in diameter, and the timber is pink or light red. The bark is smooth throughout, varying, according to the season from yellow to pink to pure white, and the outer layers decorticate in large thin plates. The tree is frequently completely deciduous under natural conditions, and another somewhat peculiar feature is that the branches of the same or adjacent trees when coming in contact frequently fuse.

The leaves are almost triangular in shape (see illustration) and a bright yellowish-green in colour, reminding one somewhat of large thick poplar leaves. This fact should be particularly noted with reference to the habitat, for the closely-related *Eucalyptus alba* has leaves which do not possess this distinctive colouring, and are more rounded at the base. Those which I have seen near Katherine grow in sandy loamy soil which would not be inundated in summer. *E. alba*, which has somewhat dull foliage and narrow leaves is usually found on higher land, while *E. bigalerita* which grows in moister low-lying situations has broader lustrous leaves. Since these are the principal differences (excepting for trivialities in the buds and fruits, which are much less than the variations seen in species previously discussed in this issue) some botanists may prefer to regard these as two forms of a single species which would then be called *Eucalyptus alba*.

Spreader Banks for Gullies



The force can be taken out of water running in gullies if spreader banks are used to check the flow of the water. The water must run back into the gully at a safe point or spread out by another spreader bank. Gullies treated this way can be safely filled and stabilised.