

TREES OF WESTERN AUSTRALIA

By C. A. GARDNER, Government Botanist

No. 29-WOOLLYBUTT

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

No. 30-GNAINGAR

(*Eucalyptus phoenicea* F. Muell.)

THESE two trees differ from all other species of *Eucalyptus* in that their bark, on the lower portions of the tree where it is persistent, is composed of numerous thin flakes almost like sheets of mica. These plates are traversed by fibres and on the older parts of the trunk, when the flakes have decayed, the fibres are left like a dense netting giving rise to the appearance from which the Woollybutt gets its name.

The name Woollybutt is scarcely appropriate since the fibres are straight and friable and not in the least like wool. The names "Melaleuca gum" or "Cadjeput gum" are no more appropriate because the flakes, although of the consistency of paper, are not like those of the tea tree, and are much more friable. There is some resemblance between the bark of these trees and that of the birch tree but here again the resemblance is not a close one.

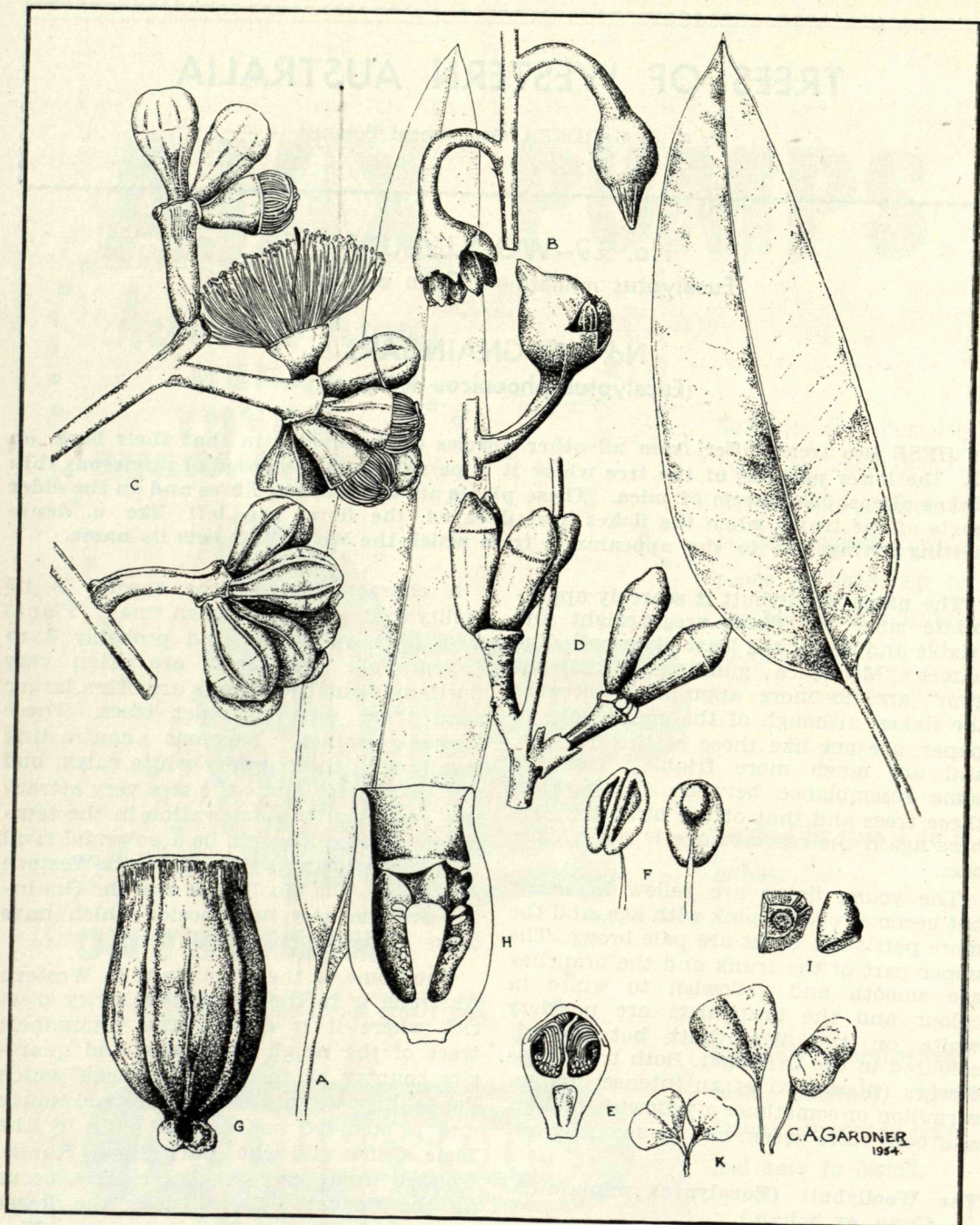
The young flakes are yellow in colour but become reddish-pink with age, and the more persistent fibres are pale brown. The upper part of the trunk and the branches are smooth and yellowish to white in colour and the branchlets are powdery white on the Woollybutt but reddish coloured in the Gnaingar. Both trees have flowers (filaments) of an intense orange-vermilion or sometimes a yellowish-orange, and both have green, not glaucous leaves.

The Woollybutt (*Eucalyptus miniata* A. Cunn. ex Schau.).

This tree attains a height of about 40 ft. but a fair average height is about 30 ft., the trunk being up to 18 ft. long and up to 2 ft. in diameter. The timber is red and hard but susceptible to attacks from termites. The branches spread widely.

A characteristic of the species is its ability to flower freely when small. Plants 4 to 6 ft. in height and probably 3 to 4 years old from seed, are often very floriferous and the flowers are often larger than those seen on older trees. These orange-vermilion blossoms contrasting vividly with the powdery-white calyx, bud and branchlets, make the tree very attractive and were it in cultivation in the temperate regions it would be a powerful rival to the red-flowered gum of South-Western Australia. The Woollybutt and the Gnaingar are the only two species which have these orange-vermilion flowers.

The home of the Woollybutt in Western Australia is in the North Kimberley district where it is one of the commonest trees of the rough sandstone and quartzite country of the Hann Plateau which lies to the north of the King Leopold Range and is bounded on the east side by the Elgie Cliffs and the Carr Boyd Range. Isolated areas carrying these trees occur on the Cockatoo Sands near the lower reaches of the Ord River, also near Elephant Hill in the same district. To the south and west we encounter smaller woodlands near Goody-Goody (not far from Derby) and between Derby and Yeeda on the Fitzroy River.



WOOLLYBUTT (*Eucalyptus miniata* A. Cunn. ex Schau.).

A—Leaves; B—Young inflorescences (see below); C—Flowers and flower-buds; D—Flower-buds from the Prince Regent River (an elongated form); E—Section of flower-bud; F—Anthers; G—Fruit; H—Section of fruit; I—Fertile seeds; K—Cotyledons. All except B and D are from the Cockatoo Springs (Gardner 7325); D shows buds from the Prince Regent River (Gardner 1358). B represents material from Goody Goody (Fitzgerald 296). The young buds are enclosed in a hard globular structure which ruptures as the buds expand. It may, or may not be normal. —Icon. origin.

In its main area of distribution the Woollybutt is frequently associated with the Messmate (*E. tetrodenta*), but it usually occurs as the principal and dominant tree of the sandstone range country. It extends across the Northern Territory into Northern Queensland.

Woollybutt was first collected by Alan Cunningham who was the botanist with Captain Philip King about 1820. He found it in "craggy declivities near York Sound."

This striking tree flowers from about the commencement of June until the end of July. It produces nectar in abundance and the blossoms are much sought after by small birds of the parrot family, especially budgerigars. The native bees frequently make their hives in its hollow trunks.

The name *miniata* is taken from the Latin *miniatus* (coloured with cinnabar), which is what we call orange-vermilion, the colour of the filaments of the flowers.

Gnaingar (*Eucalyptus phoenicea* F. Muell.).

The Gnaingar is much like the Woollybutt in appearance but is a much smaller tree and the branchlets are reddish and angular and not powdery-white like those of the Woollybutt. The flowers also are very different in shape and much more numerous in clusters although they resemble those of the Woollybutt in their orange coloured or vermilion tonings.

Mueller, who described this tree from the vicinity of the Victoria River named it *Eucalyptus phoenicea* from the cinnabar colour of the filaments in allusion to the fiery crimson plumage of the mythical bird, the phoenix.

The phoenix in Egyptian mythology was the "Great Bennu" which lived at Khenensu, identified with Heliopolis, the City of the Sun and the centre of worship of the Sun God. The phoenix resembled an eagle and had feathers that were red and gold in colour. It was sacred to the Sun God and in the best-known version of the myth, the bird was supposed to appear once in every 500 years and build a pyre on which it was burnt—a new phoenix arising from the ashes. (Some authorities identify this mythical bird with the planet Venus which, as the morning star, was the guide to the Sun God. Since this planet after passing the sun reappears as

the evening star, it is possible that the story of the burning on the pyre and the reappearance of a new phoenix from the fire or ashes has originated from observations of the planet).

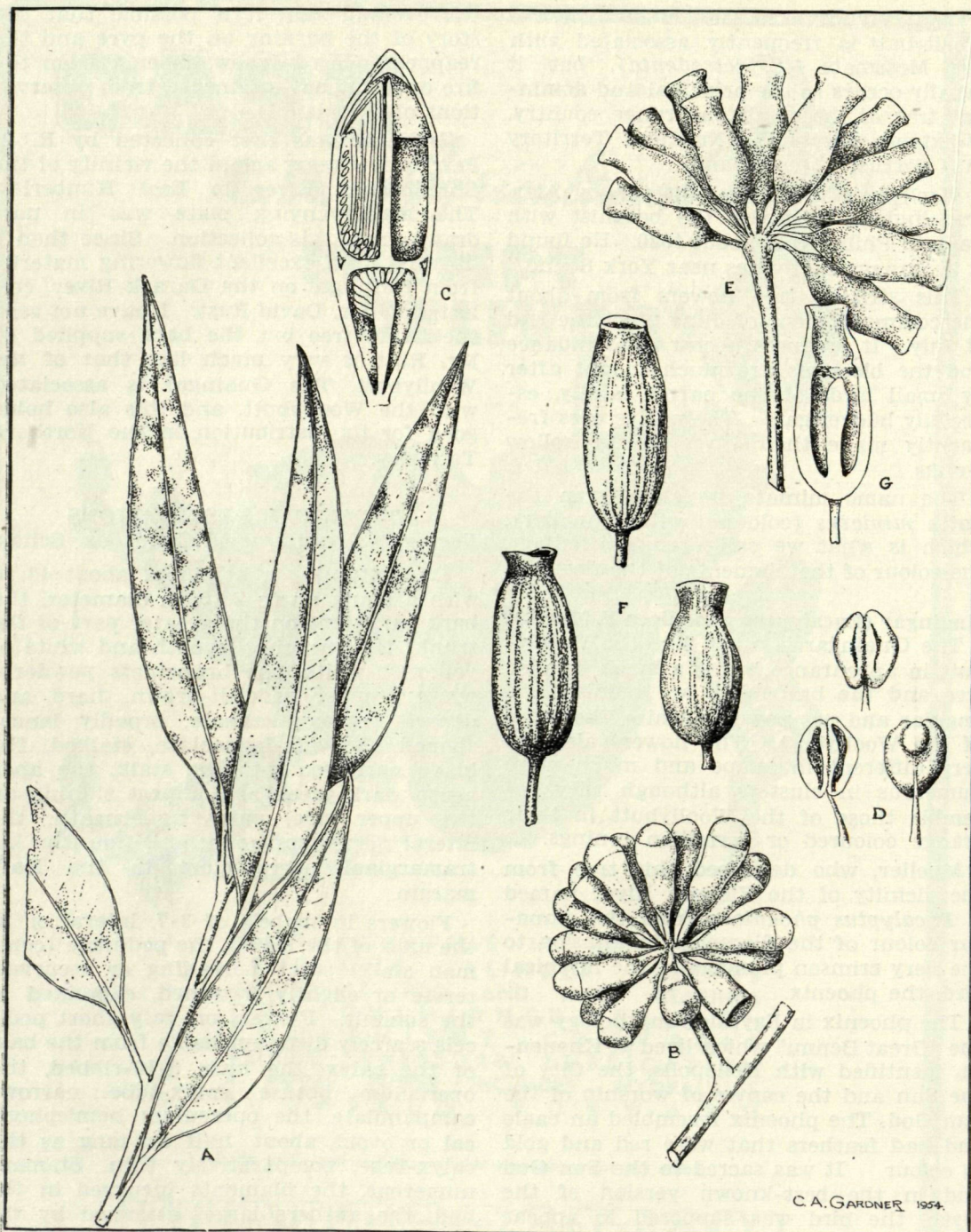
Gnaingar was first collected by R. A. Perry a few years ago in the vicinity of the Chamberlain River in East Kimberley. The accompanying plate was in part drawn from this collection. Since then I have received excellent flowering material from Karungie on the Durack River, collected by Mr. David Rust. I have not seen the living tree but the bark supplied by Mr. Rust is very much like that of the Woollybutt. The Gnaingar is associated with the Woollybutt, and this also holds good for its distribution in the Northern Territory.

BOTANICAL DESCRIPTIONS

Eucalyptus miniata A. Cunn. ex Schau.

Tree attaining a height of about 40 ft. with a trunk up to 2 ft. in diameter, the bark persistent on the greater part of the trunk; the branches smooth and white or yellowish-white, the branchlets powdery-white; timber reddish-brown, hard and dense. Leaves alternate, broadly lance-shaped or ovate-lanceolate, stalked, the blade narrowed into the stalk, the apex acute, dark green and almost shining on the upper side, paler underneath, the lateral nerves spreading and fine, the intramarginal nerve close to the leaf-margin.

Flowers in umbels of 3-7, lateral or in the axils of the leaves, the peduncle (common stalk) stout, spreading or recurved, terete or slightly flattened, expanded at the summit. Flowers on very short pedicels scarcely distinguishable from the base of the calyx, the buds 6-10-ribbed, the operculum obtuse. calyx-tube narrow-campanulate, the operculum hemispherical or ovoid, about half as long as the calyx-tube, comparatively thin. Stamens numerous, the filaments incurved in the bud, the anthers large, attached by the middle, opening in distinct longitudinal slits. Style elongated, rather slender, the upper portion external to the stamens in the bud and then recurved, later straight or flexuose. Fruit urn-shaped or almost cylindrical, over an inch in length, contracted at the summit, the capsule deeply



GNAINGAR (*Eucalyptus phoenicea*, F. Muell).

A—Branchlet and leaves; B—Flower-buds and peduncle; C—Section of flower-bud (after Mueller); D—Anthers (after Maiden); E—Young fruits (after Mueller); F—Fruits; G—Section of fruit; (A, F and G, Perry 3081).

—Icon. composit.

sunk, 3-valved, the valves short and deeply included. Flowering season June to August.

Eucalyptus phoenicea F. Muell.

A tree usually of slender growth, up to 25 ft. tall, the trunk with a papery-flaky somewhat fibrous bark, the upper portion and branches smooth, the branches reddish, slender, and angular. Leaves much like those of *E. miniata* but smaller, of a pale green, alternate or here and there opposite, of the same colour on both surfaces, on rather long stalks, the mid-rib prominent, the lateral nerves fairly numerous and irregular, the intramarginal nerve subcontiguous with the leaf-margin.

Flowers in axillary clusters, on long slender peduncles, the flowers up to sixteen in the umbel, on slender pedicels, the buds pear-shaped. Calyx-tube narrowly bell-shaped or almost pear-shaped, smooth, the operculum very much shorter and obtusely hemispherical to ovoid. Stamens numerous, all perfect, the filaments inflected in the bud; anthers versatile, broad, opening in longitudinal distinct slits; style slender, straight.

Fruit narrowly urn-shaped to almost ellipsoidal or almost cylindrical, usually with a distinct 'neck' below the orifice, 1-1.5 in. long, many-ribbed, abruptly contracted into the stalk, the capsule deeply included with very short obtuse valves.

SPECIMENS HELP DIAGNOSIS

WRITTEN descriptions of plant diseases are often insufficient for accurate diagnosis. Send specimens, preferably several, showing the disease at various stages. They will usually carry well if wrapped in moist newspapers and enclosed in well-ventilated containers.



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