York Gum: The Protean Eucalypt

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York gum does not have the bright flowers, the smooth, light-coloured bark or the clean straight bole that many other eucalypts are admired for. Its special character is its diversity, being 'notoriously variable in habit and bark'[1] as one scientist puts it (Note: protean from *Prōteus* a Greek Sea-God taking various shapes). Although in most areas it is a low-branching, broad-crowned tree of 6 to 12m in height, considerably larger specimens exist in the western part of its range—I have measured one Moora York gum at 23m high. In the drier areas it is a mallee.

Between the extremes of mallee and tall straight tree a multiplicity of shapes can be found. The trunk can be straight or bent into almost serpentine curves. Even a large York gum may have three or four trunks, making its status as either tree or gigantic mallee a moot point. Sometimes a fallen tree continues to send up new shoots at right angles to the now horizontal trunk, creating yet another variation on the York gum theme.

So much character does the York gum possess that a stand of them is reminiscent of people relaxing outdoors. Here is a bunch leaning into a circle to share the whispered gossip, there one clutches at another for support, while others bend down, recline at full length amid branches dropped as casually as unneeded jumpers or energetically stretch their limbs to the sky.

York gum's bark is as variable as the species' growth-habit. The western form has shaggy grey bark on its trunk and lower branches of the type known as 'box' — that is, hard and fibrous with the fibres somewhat interlaced. Thus York gum is actually not a gum at all, as the term is usually reserved for smooth-barked eucalypts. Because, in most cases, this bark-type does not extend to the upper branches which are smooth and of a burnished grey-green colour, York 'gum' is, strictly speaking, a half-box eucalypt. As the tree extends east and north the proportion of rough bark decreases, more or less as its height declines, so that on the fringe of its range York gum becomes a mallee form with smooth green bark.

The tree's specific name, *Eucalyptus loxophleba*, is more accurate. It is derived from the Greek *loxos*, cross-wise or oblique, and *phlebos*, vein, and refers to the pale-green leaves' crooked veins. Another name for York gum is the Aboriginal 'yandee'.

Despite its parochial common name (a result of being first encountered in abundance at York, the earliest settled wheatbelt town), York gum is one of the most widespread and characteristic trees of the wheatbelt. Its range stretches from north of Shark Bay to the south coast and from the Darling Range to east of Kalgoorlie. Over such a wide area it is found in association with a great many plants. In the Murchison, York gum is often the only eucalypt in a sea of wattles. Further south it is frequently associated with salmon gum, gimlet (*E. salubris*) or jam wattle (*Acacia acuminata*). Where York gum occurs with wandoo, the latter tends to be on the summits and upper slopes of hills, with a sharp boundary where it meets York gum downslope.

▲ Light through a canopy of York gum in a woodland to the north of Perth. (Photo C. Young.)

York gum normally grows in a woodland formation littered with fallen branches and with a sparse ground layer. The soil may be sand, sandy loams or loams, perhaps granitic or gravelly, and often has a clay sub-soil. Stands of York gum in the western wheatbelt were described by early writers as Savannah, a formation in which trees are lightly spaced amid grasses or shrubs. The Aborigines used to systematically burn these areas in summer to bring on fresh herbaceous growth to attract kangaroos. The botanist Dr J. S. Beard has speculated that remaining stands of York gum have changed to a denser woodland since this burning ceased.[2]

Because York gum has been used as an indicator of productive soil it has been much cleared to make way for wheat and sheep. Hence undisturbed woodland is rather rare, although the tree itself is still common. It is a difficult tree to eradicate from agricultural land as it is seemingly near-indestructible. Its deep root-system makes it drought and salt resistant and it can tolerate frost (Merredin, at the centre of the York gum's range, averages 31 frosts a year[3]). The same root-system can exasperate farmers and clearing contractors. One man who worked as the latter in the 1950s, when machinery was less efficient, maintained that York gum caused the most problems of any species — to the extent that explosives had to be used to loosen its roots.

I have seen York gums stubbornly persist in growing despite having been knocked over by wind or bulldozer, stripped by cock-eyed bobs of all their branches, sawn off at waist-height or damaged by fire. This is because they are able to sprout new shoots from either dormant buds under the bark of the trunk, known as epicormic shoots, or from a lignotuber.

The timber of York gum does not have the durability of the living tree and consequently is seldom used for fence-posts and strainers. However, the yellow-brown wood is heavy and very hard, more difficult to cut with an axe than even wandoo, and has a closely interlocked grain. Its transverse strength is 14 500 lbs/in^2 and its tensile strength is 13 000 lbs/in^2; unremarkable figures for a wheatbelt eucalypt. Formerly York gum was used for maul- and mallet-heads, the making of naves and

▲ Undisturbed bushland near Perth late last century featuring a well developed specimen of York gum (Photo courtesy of Battye Library. Ref 8168/1882.)

▼ Mature York gums on a Moora farm. The large tree is 23 metres in height, an impressive size for the species (Photo C. Young.)

felloes – respectively, the hubs and the curved rim segments of wooden wheels – and for wagon-building. It was considered the best timber in Australia for these purposes. Another now obsolete use was in spear-shafts by the Aborigines.

Probably York gum's main economic use today is by beekeepers. The species provides a reasonable flow of medium amber honey between September and December, although its pollen supply is unreliable.

York gum is not a popular tree in cultivation, probably because of its lack of conventional beauty. I have seen only two cultivated trees, both of which were in the grounds of a primary school in South Perth where they stuck out like sore thumbs against a background of Queensland brushboxes. Trees grown in Sydney and Adelaide have also adapted well to cultivation. Overseas, the species has been tried successfully in Israel and Morocco for shade, firewood and soil conservation in areas with an annual rainfal of 200 to 400mm. Limited numbers are now being planted by wheatbelt farmers, as York gum's tolerance to drought and salt and broad, shady crown of foliage make it a useful farm tree.

The species was first described by the English botanist George Bentham. However in 1884 the German botanist Mueller demoted it to a tree-form of *E. foecunda* (the narrow-leaved red mallee), a small mallee-eucalypt with rounded buds and white flowers that superficially resemble York gum's. Later scientists confirmed this opinion until York gum was reinstated as a species in a reorganisation of the *Eucalyptus* genus by Blakely in 1934. Narrow-leaved red mallee is not now considered very similar to York gum, which seems to have no close relatives.

York gum was again under taxonic review in 1973, when a new subspecies, *E. loxophleba* subsp. *gratiae*, was described[5]. The subspecies is found between Dumbleyung and Lake King and derives its name from Lake Grace, where it is common. It differs from

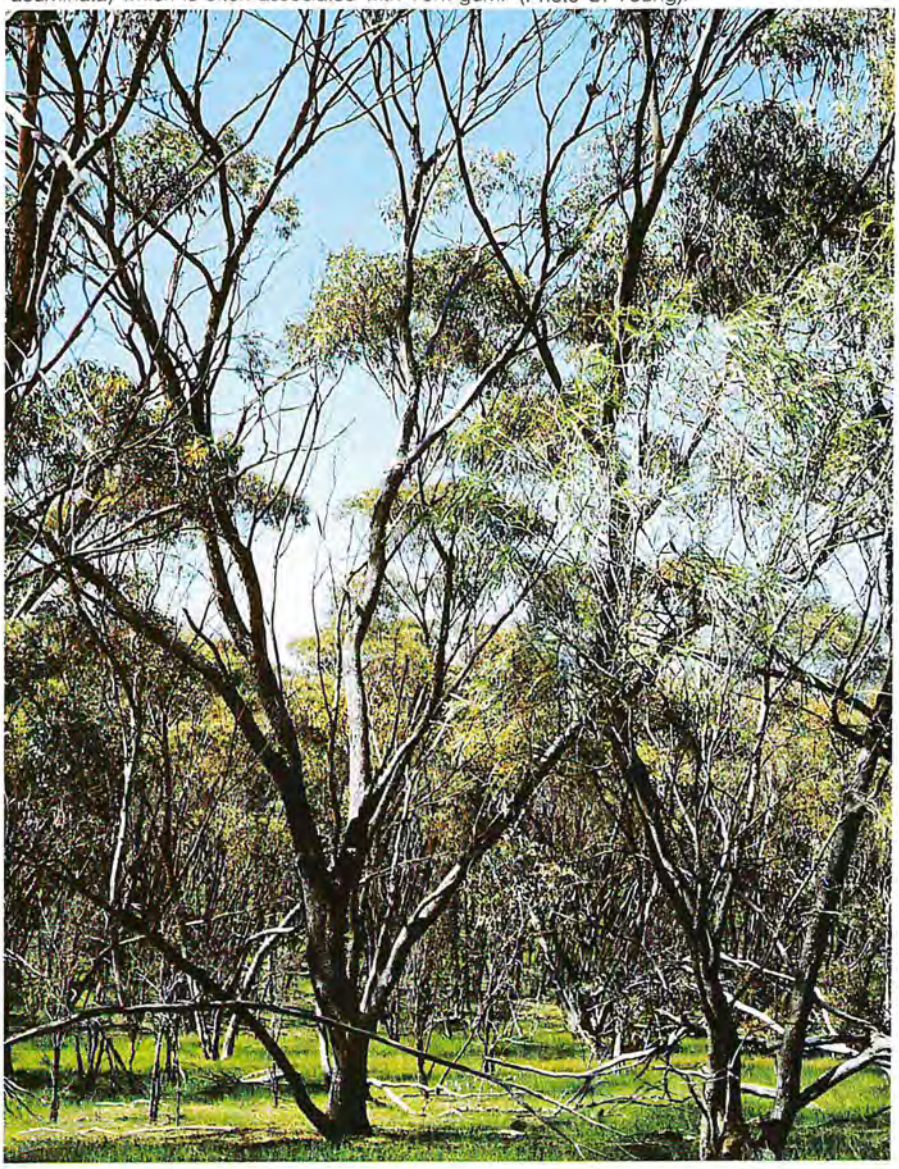
▲ York gum foliage, showing transition of bark types on the upper branches (Photo C. Young.)

▼ York gum woodland, New Norcia. The understorey is introduced Guildford grass (Photo C. Young.)

▲ Lower branches of the York gum feature rough bark, whereas higher in the trees the bark becomes smooth. (Photo C. Young.)

▲ The crooked vein pattern in this leaf is the feature that gives York gum its scientific name. (Photo C. Young).

▼ York gum woodland, New Norcia. In the foreground is a Jam Wattle (*Acacia acuminata*) which is often associated with York gum. (Photo C. Young).



the main form of York gum in having larger buds and fruit and thicker, glossier leaves. An earlier described subspecies, *fruticosa*, is now considered synonymous with the common form.

A botanically dissimilar species that is sometimes confused with York gum in the field is red morrel (*E. longicornis*), a common tree of the eastern wheatbelt and the goldfields on heavy soils. It has the same rough-barked trunk and smooth branches as York gum but its buds and fruit are very different. However, one can learn to distinguish the two species at a glance. Red morrel's leaves are narrower and a deeper green than York gum's, its rough bark is darker and finer-textured and the smooth-barked limbs have a reddish hue. Also, red morrel tends to be a taller, thicker-boled tree with a single trunk and an erect habit more reminiscent of salmon gum than York gum.

Footnotes

[1] Brooker, M.I.H. 'Four new taxa of *Eucalyptus* from Western Australia', *Nuytsia*. 1:250, 1972.

[2] Beard, J.S. *The vegetation of the Moora and Hill River areas.* Perth, Vegmap Publications, 1979, pp. 11-12.

[3] Chippendale, G. M. *Eucalypts of the Western Australian goldfields (and the adjacent wheatbelt).* Canberra, AGPS, 1973. p. 87.

[4] Lane-Poole, C. E. *Notes on the forests and forest products and industries* Perth, W.A. Forest Dept, 1920, P. 55.

[5] Brooker, M. I. H. *Op.cit.* pp. 250-53.