

'OPEN GROWN' EXPLAINED BY IAN BEVEGE

A tree is said to be 'open grown' when it has grown literally 'in the open' as distinct from growing in 'closed forest'. The obvious examples of open grown trees are those found in widely spaced woodlands where there is lack of competition between individual trees. By contrast, in a forest trees are closely spaced and actively compete for light, water, nutrients etc. As a consequence, trees in forests generally have finer branches and the lower branches are rapidly shed due to hormone controls that are mediated by low light intensity; they are also more subject to apical dominance i.e. when the leading shoot suppresses the development of competing leaders and side branches. In contrast, open grown trees retain their lower branches and they tend to lose apical dominance rapidly leading to 'crown break' at low heights – so producing large umbrageous crowns and short boles. This *C. tessellaris* demonstrates this open grown form of growth.

As an example; below are two pictures from my recent trip to Victoria - *E. bosistoana* (Coast Grey Box). One is of a remnant forest where you can see typical forest tree form. The other is of a tree of approximately the same age. It is open grown, having regenerated in a cleared area that was used as a lookout for shipping from the 19th century.

You often find what looks like open grown big old trees in forest surrounded by smaller younger trees with forest tree form. This structure tells us that this is a comparatively young forest. It has developed since the cessation of aboriginal burning, which kept the 'forest' in a woodland form with widely spaced trees with grassy understorey. With the cessation of burning, the forest has regenerated in close formation leaving the original widely spaced trees with their big ropey crowns. Another photo of *E. bosistoana* shows an old growth tree with what would have been a large wide crown, developed in woodland formation under aboriginal burning over 200 years ago, among the younger trees. This is probably the seed tree from which these younger ones have regenerated about a 100 years ago when regular burning ceased.

When a tall forest is partly cleared, you can tell many years later that the trees originally grew in forest formation because they have long boles and relatively small crowns. Trees that regenerate scattered in a paddock, or are planted in a park, develop the umbrageous habit quite rapidly. This is very common particularly with rainforest species that invariably break crown very rapidly when open grown; hence they make excellent shade trees. The down side to this is they are difficult to grow well in plantations because at the spacing normally used, they still tend to break crown and produce short boles. The photo of *Khaya senegalensis* (African Mahogany) plantations in North Queensland demonstrates this.



E. bosistoana Open grown tree



E. bosistoana Remnant tree



E. bosistoana Old growth tree with what would have been a large wide crown, developed in woodland formation.



Khaya senegalensis Remnant young forest trees.