

# Imbak Canyon: The oldest tree in Borneo?

## ● Third of a series

ONE of the most impressive trees in the Imbak Canyon is the 'Big Belian', which may very well be the oldest tree in Sabah! Dipterocarp trees are much commoner than 'belian', and can be much taller, but their age is thought to average between 400 and 600 years. 'Belian' trees, on the other hand, are thought to reach ages of more than 2,000 years!

### Rhinos and Rivers

'Belian' trees have the tongue-twisting scientific name of *Eusideroxylon zwageri*, so 'belian' is really a much better name! Mature trees are quite large, up to 50m in height, (though the taller trees are, apparently, often struck by lightning), with large glossy green leaves, bullet-shaped fruits up to 15cm in length, and grooved seeds. The seeds are thought to have evolved to be dispersed by rhinos up slopes and ridges, and by water downstream.

### Two species?

Some authorities believe there are two species, the true 'belian' (*E. zwageri*), found in Borneo and Sumatra, as well as on the island of Palawan in the Philippines, and the closely related 'melangangai' (*Potoxylon melangangai*), which is found only in Borneo. 'Melangangai' is very close to true 'belian' but the wood is apparently much lighter and preferred by some of the native peoples of Borneo for paddles, for this reason, as 'melangangai' floats in water while true 'belian' sinks.

'Belian' is one of my favourite trees, and, to my delight, when we visited the Imbak Canyon earlier this year, we encountered several, including what must be the largest and the oldest 'belian' tree I have ever seen – the "Big Belian" on the Big Belian Trail near the Study Centre, its massive, moss-covered,



A 'belian' seed and a 'belian' fruit, from a young tree growing at the Agricultural Park in Tenom, showing how thick the fibrous flesh around the seed is. Photo: A. Phillips



trunk giving off an overwhelming impression of great age.

### Blowpipes and Coffins

Also called Borneo Ironwood, 'belian' is Borneo's hardest and most durable timber and one of the hardest in the world. In the past, it was prized highly, especially for making blowpipes used in hunting and for making the traditional coffins of the Orang Sungai people living along the Kinabatangan – Sabah's longest and mightiest river, the headwaters of which stretch right back to the Imbak Canyon.

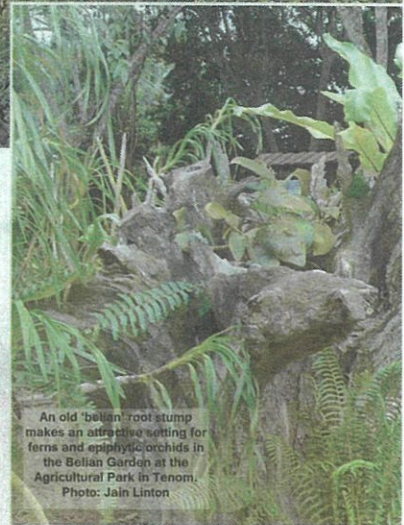
Long ago, these coffins, sealed with 'dammar' and other plant resins, were placed in caves in the many limestone outcrops along the river, that stood high above any floodwaters. Even today, it is traditional for some Orang Sungai communities not to bury the coffined body at once, but to place it in a burial hut near the village where the deceased once lived.

### Garden Landscaping and House Posts

In our more modern era, 'belian' has been valued for house posts and roof shingles as well as for railway sleepers, and for garden landscaping, where it makes very durable fence posts and pergolas – termites will not eat it nor will fungi grow on it, but it has been so over-exploited that the timber is now rare and hard to obtain.

Anyone who has visited the Murut Cultural Centre just outside Tenom in south-west Sabah, will have seen the many 'belian' trunks on which it was built, raising it several metres off the ground.

'Belian' is not only one of the hardest and heaviest of Borneo's trees, it is also one of the slowest-growing. The "Big Belian" tree, on the Big Belian Trail, a delightful walk of 1.7km that runs from the Imbak Canyon Study Centre to the Imbak waterfall, is certainly the largest I have seen. We do not know the exact width of the trunk, nor its exact age, but we can make a good guess based on studies carried out



An old 'belian' root stump makes an attractive setting for ferns and epiphytic orchids in the Belian Garden at the Agricultural Park in Tenom. Photo: Jain Linton

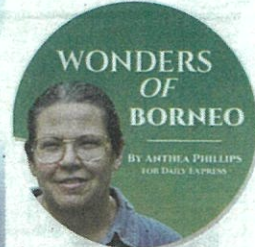
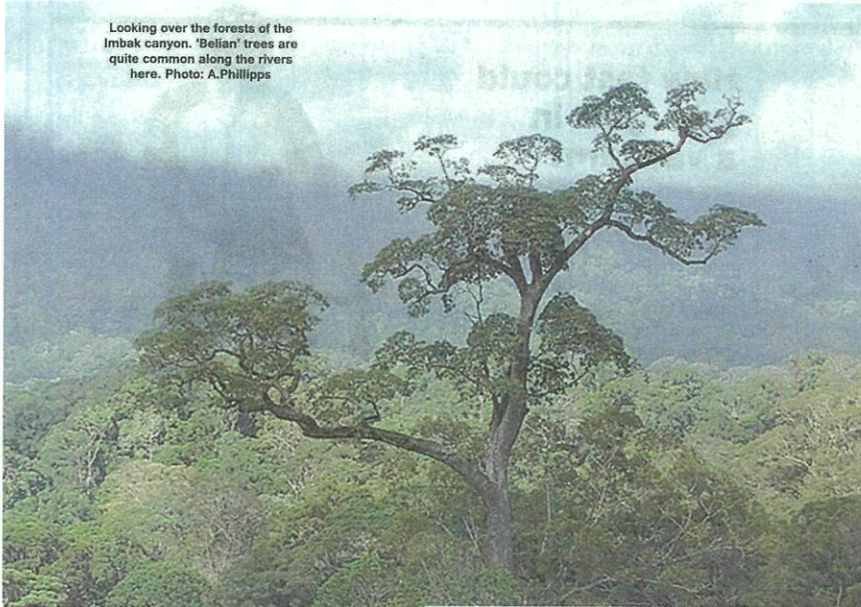
on 'belian' trees elsewhere in Borneo.

### How to age a tree

Radiocarbon dating, carried out on stumps of felled trees in Kubah National Park in Sarawak, published in 2003, gave ages of over 1,000 years with an average radial growth rate of 0.58mm/yr. Studies using a different dating method, carried out on two felled trees just outside Imbak, published in 2011, gave estimated radial growth rates of 0.27 and 0.38mm/yr.

A huge tree in the Kutai National Park in East Kalimantan, estimated to be over 1,000 years old, is said to have increased in diameter, from 241cm to 247cm, in 20 years, giving a radial growth rate of 1.5mm a year, which is much faster than other records, but I do not know how reliable this is. Young trees in plantation trials in Indonesia have ex-

Looking over the forests of the Imbak canyon, 'Belian' trees are quite common along the rivers here. Photo: A.Phillips



Anthea Phillips studied botany at Durham University in England, before joining Sabah Parks as the Park Ecologist. She co-authored A Guide to Kinabalu Park as well as books on the Rhododendrons of Sabah and on the pitcher-plants of Borneo. She hopes that through these reports in the Daily Express, people will appreciate the unmatched uniqueness of Sabah and Borneo.

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She will gladly answer any question on this or related topics.

Below: The 'belian' tree at the Rainforest Discovery Centre at Sepilok near Sandakan is one of the easiest to see in Sabah. Photo: A. Phillips



The moss-covered trunk of the Big Belian gives an overwhelming impression of great age. Photo: A. Lamb



hibited faster growth rates, especially under good conditions, of about 5mm a year, but appear to slow down fairly quickly.

Possibly the most well-known 'belian' tree in Sabah can be seen at the Rainforest Discovery centre in Sepilok, about 10 minutes walk down the path. This tree with a diameter of about 120 cms is thought to be about 1020 years old.

**How old is the 'Big Belian'?**

Based on photographs, it is possible to get a rough estimate of the diameter of the 'Big Belian' of Imbak Canyon, of about 210cm, with a radius of 105cm. This gives us a rough age of between 1800 years and 3800 years, depending on which growth rate is used, so this tree is probably at least 2000 years old, and I think is a good contender for the title of the oldest

tree in Sabah and possibly the oldest tree in Borneo!

**The World 2,000 Years Ago**

So what was the world like when the 'Big Belian' was born? Two thousand years ago, the ancient Silk Road was the main trading route to and from China. Neither Christianity nor Islam had yet developed, though Buddhism had already reached China from India.

The first 1,000 years saw the rise and fall of the Roman Empire in Europe, the Mayan Empire in Central America and the Khmer Empire based around Angkor Wat in Cambodia. Genghis Khan built the largest known empire in the world across the grassy plains of Mongolia and Christopher Columbus supposedly discovered America. Paper, gunpowder and spectacles were all invented during the first 1,000 years of our tree's growth, and the forests of Borneo were yet to be discovered by the outside world.