

# An anecdote: walking in the footsteps of the history of sustainable forest management in Myanmar

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It must only come rarely to a New Zealand forester to be able to get a glimpse of the history of sustainable forest management in Asia. During a United Nations forestry development assignment in Myanmar (formerly Burma) in November I was, quite by chance, able to do just this when visiting several localities about 400 km north of Yangon (formerly Rangoon). On this extensive but gently rolling and attractive lowland countryside teak (*Tectona grandis*) is the dominant indigenous tree in the mixed broadleaved forests that occur here. Teak has evolved in this tropical environment, which is characterised by hot wet rainy summers, dry mild winters and also the deep alluvial and fertile soils on which it grows.

I was not specifically looking at teak during my visit but inevitably the topic of teak management cropped up because it is in central Myanmar that some of the most highly priced teak in the world is grown (logyard prices for veneer quality logs are presently about US\$3,000/cubic metre, and rising). It was during a good natured discussion one warm morning, whilst two Burmese foresters and I were enjoying our humble breakfast of noodle soup, chillies and fish in a tiny roadside restaurant in the ancient town on Pyay (formerly Prome) beside the Irrawaddy River, that a chance comment was made that the famous German forester and botanist, Dr Deitrich Brandis, once worked here and lived not far from where we were sitting! I was surprised and also thrilled to have stumbled across the fact that I may be walking in the footsteps of the earliest forester to have worked in Asia.

I, and other students who read forestry in Europe in the 1960s, became familiar with Dr. Brandis's work in the teak forests of Burma during our forest management studies and it was Brandis that has made such a lasting contribution to the theoretical and practical basis for sustainable management of broadleaved forests that modern forestry depends upon today. Dr. Brandis came to Pyay in 1855 (as a graduate from Copenhagen University) and it was near here, and when teak forests were much more extensive, that during the late 1850s he developed what is known today as the Myanmar Selection System of forest management. He also developed the taungya afforestation system in which farmers establish teak trees in combination with temporary cultivation of agricultural crops; it is a system that is beneficial to both the foresters and to shifting cultivators who have for generations grown their agricultural crops in this way.

Management of teak forests, linked to taungya plantation establishment, has now been practised with few interruptions since about 1856, a period of nearly 150 years, giving Myanmar the distinction of having the longest history of formally planned forest management in Asia. It was from Pyay in Myanmar that Brandis – who is sometimes still

known as the 'Father of Tropical Forestry' – moved west in 1862 and with others, notably Professor Sir William Schlich, set about introducing planned management into the broadleaved forests in India. Later knighted by England for his work on forestry, Sir Deitrich Brandis remained in India until 1888 but spent the latter part of his life in Europe. He died in 1909. Dr. Brandis' memory is still very much alive in the minds of Myanmar foresters and the fine contribution that he made to Burmese and later to Indian forestry continues to be highly regarded today.

*Photo 1: Young teak trees six months old and 1 metre tall that have been established under taungya cultivation amongst a sesame crop in the Yedasche locality.*



Today Brandis' own forests are long gone but the main features of the selection system that he designed, including taungya plantation establishment, are being applied in the increasingly extensive teak forests being managed now. Near Yedashe in the Bago Yoma hills, a locality that foreigners are never normally allowed to visit, I had the opportunity to see several examples of recently established teak and also 30 to 40 year old teak stands that have been tended under the Myanmar Selection System. Yields are determined by area control of harvesting under prescriptions set out in classical forest management plans. Logging continues to be done using elephants (there are still 5,000 working elephants in Myanmar) and long may this continue. Elephant logging is low impact log harvesting at its best and is also quite inexpensive!

Such is the conservatism of the Burmese that there is a reluctance to make any changes even if they seem to be necessary. But I sometimes wondered whether I was in the real world during my visit because so little seems to have changed since Brandis formulated the basis of selection forest management in the 19<sup>th</sup> Century. Wood volumes



*Photo 2: Teak planted in 1967, now about 35 - 40 metres tall. Tree form is superb, a result of periodic thinning since establishment.*



continue to be measured in Hoppus Foot (or Hoppus ton), tree sizes in inches quarter-girth, areas in acres, long distances in miles and two roadside notices I saw pointed out that it was 4 furlongs to a waterfall and 2½ furlongs to a small nursery!

Despite the increasing misery and anxiety experienced by most Myanmar people that I met because of the difficult

social and economic conditions prevailing in their beleaguered country, I was impressed by the resilience and determination of the Myanmar foresters to uphold a proud tradition of professional forestry. They know that they have an outstanding comparative advantage for the sustainable production of one of the most prized and easily marketed timbers in the world and they are determined to continue to try to do so, notwithstanding severe trade hardships suffered by their country, caused by the international sanctions against it.

I wondered as I was leaving Yangon what it will take to see thoughtfully planned management of some of our New Zealand forests re-introduced? Perhaps the day may come when we as a country will decide that we can't afford not to attempt, once again, to sustainably manage some of our broadleaved forests, especially beech, for the production of high quality and highly priced wood. We know that we have the knowledge and ability to do so, just as Myanmar foresters know how to grow their teak. I wonder what Dr. Brandis would think of the prospects of carefully considered, long-term management of New Zealand beech forests? If he were alive today I'm sure he would be positive and would see it as a great professional challenge – perhaps just as he did when he arrived as a young forester in Pyay in central Burma to manage teak about 150 years ago.

## Isolated woodlot on Farewell Spit

Colin O'Loughlin

**I**n late December 2004 I joined a guided tour of the Farewell Spit. This fascinating area, famous for its history of shipwrecks and providing summer habitat for migratory birds such as bar-tailed godwits, knots and turnstones, also provides an interesting example of early tree plantings. Near the eastern extremity of the Spit at Bush End Point there is an historic lighthouse originally built in 1897. One of the early lighthouse keepers, a James Harwood, decided in the late 1890s, to establish a plantation of trees at Bush End Point to help make the lighthouse site more tolerable and to provide an improved visual horizon for ship navigators who had difficulty distinguishing the low sand dunes of the spit during poor weather conditions.

Although the historical records are rather conjectural about the timing of the plantings, it appears that, after some unsuccessful attempts to establish radiata pine seedlings, Harwood imported soil from near Collingwood and finally managed to establish a small woodlot of radiata pine and macrocarpa between 1889 and 1892.

Considering the windy climate and the raw sandy site the trees grew remarkably well. Today there are a few hectares of rather large healthy macrocarpa and radiata pine trees still standing. The average height of the radiata pine appears to be about 30 metres and some of the lower trunks are more than 100 cm in diameter. The foliage appears to be healthy and shows no indication of nutrient deficiencies.

*Photo of part of the woodlot from the lighthouse tower.*



There are also Tasmanian blue gums and *Banksia ericifolia* growing in the area.

Of the original plantings it appears that only one radiata pine and five macrocarpas remain. The bulk of the existing trees are descendents of the original plantings or result from later plantings, mainly in the 1940s. I understand that the Department of Conservation, which manages the Spit as a nature reserve and bird sanctuary, has plans to eventually replace the exotic trees with native trees and shrubs. To my knowledge, this small woodlot is the most isolated exotic tree woodlot in the country.