

The status of Kohekohe (*Dysoxylum spectabile*)
in the native flora of Brooklands Park

Major upgrading of the stabling facilities near the southern (mountain end) boundary of the New Plymouth Racecourse is now well advanced into the construction phase. Details have only recently been disclosed at what could almost be described as a 'fait accompli' stage. The extended layout as proposed demands that the upper half of a 180m existing single lane sealed road affording access from the level of the Racecourse down an escarpment to the level of the Bowl of Brooklands about 20m below must be re-aligned.

The proposed detour of about 100m in length and up to 25m at its widest involves excavation of a large volume of soil and destruction of about 25 native trees of several genera. Included, most importantly in my estimation, is a mature stand of 10 kohekohe forming a boundary shelter belt. These trees are instrumental in protecting a section of the Maranui gulley below from the prevailing on-shore winds from north and west and in themselves are a unique species in this location.

I have been invited by the Friends of Pukekura Park to contribute my thoughts on this proposal. Research has convinced me that concentrating attention on the plight of the kohekohe alone is sufficient to establish a sound platform in defence of the retention of the entire community of trees.

This could also be inverted to instead insist that there is justification to fully explore upgrading of the existing road.

My livelihood has centred on an understanding of the vital factors affecting the growth of plants but I cannot claim to be an authority on native species. Therefore I must call upon the words of others in order to define the role that kohekohe plays in the rich tapestry of the native forest remnants for which Brooklands Park has long been famous.

L Cockayne¹ observes. *'Long fronds of ferns and lycopods several feet in length hang drooping from the boughs and certain orchids, with aerial roots, and shrubs of various kinds, too, grow high on other trees, whose boughs thus support veritable gardens. In some few cases the flowers of a tree are produced on the thick branches, as in the kohekohe (*Dysoxylum spectabile*), and not, as usual, from amongst the leaves. Now, should a botanist knowing nothing of New Zealand read this description, he would at once conclude it was no account of the forest of a temperate climate, but of one in the tropics. And this is quite true: the common forest of New Zealand, owing partly to its origin, but far more to the moist and equable climate, must be classed with the tropical, not with the temperate forests.'*

L B Moore and J B Irwin ² add: '*Dysoxylum spectabile kohekohe*. A tall tree of coastal forests from North Auckland to Marlborough Sounds, often in pure stands where the bright green foliage forms an even canopy swept smooth by constant winds from the sea. Inside a kohekohe forest, amongst the stout trunks, the light is dim in winter when the long drooping sprays of waxy white flowers appear in hundreds springing straight from woody branches. The pale green fruit takes about a year to ripen and then splits into three or four valves, exposing within the thick white wall brilliant orange-red arils that envelop the paired seeds.'

The authors confirm that botanically, this native species is classified into the plant family Meliaceae which means that it belongs to the tree group more commonly known collectively as mahogany, normally associated with tropical and sub-tropical rainforest.

Kohekohe is very prominent in the regenerate 'bush' areas of Brooklands where it dominates in the tree canopy with a ceiling of about 25m. Trunks are up to about 1.0m in diameter. The above 10 specimens constitute a 'pure stand'.

D Medway and D Hughes³ expand on the great virtues of this species, homing in on its special significance in Brooklands Park where healthy kohekohe are the most common and conspicuous canopy tree. They accompany the article with excellent coloured photographs and mention its importance as a valuable food source for several species of birds during winter.

In addition to the winter source of nectar to which tui flock and over which they quarrel as they do with kowhai (*Sophora tetraptera*) in spring, the red portion attached to the seeds also attracts birds which distribute the seed widely in their droppings. For example in 1876 the 20 odd ha area which we now know as Pukekura Park was described as treeless whereas Brooklands, of about the same area would have looked by comparison much as it does today. Consequently there is not a single large kohekohe in Pukekura but seedlings and saplings are plentiful thanks to the birds.

S.W. Burstall⁴, renowned for having recorded in detail notable and historic trees throughout New Zealand in the 1970 era and ultimately compiling his findings into a series of regional reports, greatly admired the large specimens of kohekohe in Brooklands Park.

In Report No. 19 he indicated that one close to the Kaimata Street boundary with a diameter at breast height of 1.73m was '*The largest of this species in any city*'. [Dbh stands for diameter at 'breast height' which is taken as 1.4m]

E.V. Sale ⁵ collaborated with Bursall and in 1984 they published 'Great Trees of New Zealand'. In introducing this tree they refer to '*The virgin bush of Brooklands Park and kohekohe in general as one of the most handsome of New Zealand trees*' They state later '*this tree may be the largest remaining specimen from extensive tracts of the species in lowland forest in damp areas over the whole of the North Island and the very north of the South Island. European development of the coastal lowlands has left it only in a few places, mainly in reserves. It is vulnerable to damage by opossums*'.

Despite protective screening by surrounding trees it was toppled by Cyclone Bola in March of 1988.

This further emphasises the great importance of protecting and preserving the forest remnants in Brooklands Park

In returning to the original Report No. 19 by Burstall via Smith and Fuller he records another large specimen '*Beside access road from Racecourse parking area to the Bowl of Brooklands with a diameter at 60cm of 1.118m*'

This is the tree which forms an arch with the largest of the threatened kohekohe and it is pertinent that he was moved to make the following quotation '*Passed by thousands of people each summer attending Bowl performances.*'

I am assured by some of the tens of thousands who earlier this month used this as access/egress to the very successful Womad Festival weekend that the 'Wow' factor of first-time visitors via this route was very audible!

Smith and Fuller ⁶ updated the measurements of this tree in 2001 to 1.168m and although the increase was less than expected were impressed with the healthy appearance of the tree. It is the strong specimen on the lower side of the access road opposite to and forming an archway with the overhead reclining specimen threatened by the proposed revamp of the road. Currently it is the largest specimen recorded in Brooklands, is almost free-standing and has a balanced canopy; a fine tree and an easily accessible example.

I consider that this archway is so unique that I call it 'The Mahogany Archway!'

The foregoing confirms that in Brooklands, the New Plymouth District Council has in its care a very special biological treasure, over and above the attractive gardens. The magnitude of that treasure can be measured in the dominant presence of flourishing kohekohe.

To come down to earth, I suspect that if the cutting proposed should proceed, in the first strong gale, the largest specimen of kohekohe remaining in the Park, located on the lower side of the existing road and forming an archway with

another large specimen on the other side which would have been removed to form the cutting, will be stripped of all its leaves.

I doubt that it will die, or that it will be toppled as has happened recently to another only 11m distant and below this one but there will be a very severe impact on it and numerous other trees in the area, now protected by the ten skyline sentinels above. I would liken the proposed action to that of removing several trees in a shelterbelt around a Bell Block avocado orchard.

Most humans live in some level of awe over living organisms which dwarf them in stature and/or out-span them in longevity. It should never be overlooked that a strong contributing factor in the success of events in the Bowl and its surroundings is the presence of the commanding vegetation.

In contemplating any threat to that vegetation I am reminded of the two 'sayings' from earlier days: 'The tail wagging the dog' and 'Killing the goose that lays golden eggs.'

New Plymouth has been elevated to prestigious status on the international environmentally-conscious roll. Would not the sacrifice of these twenty five native trees at the altar of entertainment give rise to an untidy blot on the city's now illustrious environmental escutcheon?

I had the great privilege and pleasure of sharing the company of Robert Van Pelt, a famous overseas 'tree canopy scientist. He was seeking assistance in locating the largest trees in this region for inclusion in a world scale major work and was accompanied by two colleagues. Their visit proved to be fortuitous in timing because at the end of three days of intense activity I realised that in effect, it was as if they were sophisticated modern-day actors performing to a script and on a stage set by Cockayne a century ago.

Their findings are so relevant to further understanding of the Brooklands flora that I include my summary of their visit with this article.

Signed George Fuller
Compiled for FoPP February 2009

¹ New Zealand Plants and Their Story – L Cockayne. John Mackay - Government Printer 1910

² The Oxford Book of New Zealand Plants – L.B. Moore & J.B. Irwin Oxford University Press Wellington, Oxford, New York 1978

³ Kohekohe – A Spectacular New Zealand Tree – David Medway
The magazine of Friends of Pukekura Park. Vol 3 No. 2 June 2008

⁴ Historic & Notable Trees of New Zealand;
Taranaki, Wanganui & Rangitikei – Central North Island Forestry Research Institute Report 19 S.W. Burstall

⁵ Great Trees of New Zealand – S.W. Burstall & E.V. Sale – A.H. & A.W. Reed Ltd. Wellington 1984

⁶ The Notable Trees of New Plymouth – C. Smith & G. Fuller – Waikato Polytechnic 2002