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An investigation:

THE SIGNIFICANCE OF KARAKA IN AN ASSESSMENT
OF PRE-EUROPEAN LAND UTILISATION IN NEW ZEALAND

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As part of the survey of the Wairarapa coast by a group from Wellington Teachers' College, it was decided to ascertain distribution of karaka in relation to occupation sites. The area lends itself perfectly to such a survey, as karaka cannot regenerate owing to the extensive grazing of stock. In this relatively barren coastal region, stock eat the karaka seedlings, to such an extent that only in one small area, the fenced reserve behind the Tora Station homestead, can one find young karaka growing in the coastal littoral. The rest of the region has been grazed since the 1850's. The first 'runs' were taken up in the 1840's, and being already clear or easily cleared, and accessible by sea, the whole of the coastal area was utilised by runholders or Maori graziers by the early eighteen-fifties (Wellington Provincial Gazette, 15 May, 1855). H. J. Kemp, in his report to the New Zealand Company (Feb. 15, 1849) wrote, "the tribes who now inhabit the valley and coast (considering that they were but a few years ago amongst some of the most barbarous in the Southern District) have made rapid advancement and are now to a great extent in the enjoyment of European comforts. Some are holders of cattle, others of horses and sheep and in every village is to be seen a wheat field, the stack and what is more gratifying, the use of bread is now becoming universal". From the evidence, it seems safe to assume that the coastal area would have been grazed from the eighteen-sixties onward to such an extent that karaka could not regenerate except in fenced reserves, free from the deprivations of grazing animals. Therefore a survey of karaka groves today would give some indication of its distribution in the 1860's, if not the earlier period.

Standing karaka can survive grass fires, because the ground beneath it is generally bare. Moreover, the wood in its green state is fire resistant. There is scant demand for it as timber, and the tree is useful as shelter for stock, therefore it is probable that few karaka groves would be felled after European settlement. The exception to this would be in areas where whole flats or hillsides were covered in karaka, preventing establishment of pastures.

Unfortunately, it is impossible to assess the age of karaka through growth ring counts, but microscopic analysis of test cores indicates some

seasonal differentiation. (This research is continuing.) Karaka is slow growing, is firmly rooted and - on local information - withstands the periodic gales that lash the Wairarapa coast. Therefore, chance factors of destruction should not invalidate our attempt to reconstruct the pattern of karaka distribution in the pre-1860 period.

To make fairly reliable generalisations, we took as large a sample as possible, covering 48 miles of coastline, from Cape Palliser to Flat Point, counting the frequency of karaka from the coastline to the crest of the littoral hills. The count was an approximation rather than an exact one. On topographical maps using a tenth of a mile grid we estimated the number of karaka for each tenth of a square mile, dotting them on the map to give an idea of their distribution within the grid. Comparison of karaka distribution with site distribution on maps previously completed, indicated a concentration of karaka on or about pa sites, with high correlations between karaka distribution and distribution of pits and gardens.

Distribution of gardens has not been ascertained beyond doubt, but the widespread use of stone ridges and mounds within this area makes it easy to locate some former garden sites. The presence of organically darkened layers in stream banks and other natural cuttings gives corroborative evidence for the reliability of walls and mounds as an indicator of garden sites. Distribution of gardens, pa or village sites and the concentration of karaka groves all show a high correlation.

Although there is a density of karaka in and about all former Maori occupation sites, the association could have been an indirect one, due to other causative factors. The study of local climate zones within the region indicates a marked difference in surface temperature between the soils of the bay garden sites and on the unoccupied headlands. Slope drainage, shelter from the wind are factors determining not only the choice of occupation sites but also the germination of karaka. Daily temperature readings taken at or about 8.00 a.m. for the month of November showed a 3.7 degree difference in average temperature between an adjoining headland and bay site, shelter and slope being critical factors.

Within bays and sheltered areas there is a concentration of karaka around Maori occupation sites, but not the the same extent within portions of bays or complete bays where there are no habitation sites. Moreover, all the more exposed ridge and headland pa except one at White Rock (N.Z. top series 1: 63360, Sheets N168-9, 937874) carried mature groves of karaka. Karaka distribution in this coastal region reflects the pattern of Maori occupation sites, so far as they are known.



NOTE THAT THE PLACING OF SOME VILLAGES
ON THIS MAP IS NOT EXACTLY THE SAME AS THAT GIVEN BY COLENZO



This raises the question: did the Maori actually plant karaka or did accidental regeneration take place in areas where berries were stored and eaten? Karaka trees were obviously valued; they were left standing even on the sides of pa, for they not only provided berries and shelter but attracted and facilitated the snaring of many of the birds valued as Maori food. Yet it is quite possible that they grew from accidental causes.

To test whether karaka berries could germinate after their preparation as food, a trial kit of berries were soaked and dried in the traditional manner and then sown in rich leaf mould. Three out of the hundred germinated; enough to make accidental germination a feasible cause of the karaka association with living sites. So the question of deliberate planting of karaka must remain unanswered, but their deliberate protection by the early Maori seems unquestionable for they are growing beside well used tracks and pits where young trees would inevitably have been destroyed without nurture.

One question remains: how valid are conclusions drawn from the pre-1860 period for pre-European occupation of the Wairarapa? As the maps indicate (opposite and overleaf), the sites recorded by Colenso in the ten years previous to 1860 bear little relation to the pre-European pa sites listed by Elsdon Best (map No. 2). But the evidence of the first resident missionary in the Wairarapa, William Ronaldson, indicates that the Maoris of the area were still living on a communal, village-based pattern in the eighteen-fifties and later (letters and papers, William Ronaldson, Turnbull Library). Moreover, our survey revealed evidence of pre-European pa sites on or near all the village sites noted by William Colenso. It seems then that the pre-1860 distribution of karaka bears a close relationship with its pre-European distribution; therefore conclusions from modern evidence can be drawn about pre-European distribution of karaka within the Wairarapa, conclusions that may have relevance for other regions less marginal for Maori subsistence. Karaka distribution may or may not correlate with pre-European occupation patterns in other regions, but as a source of Maori food, karaka is significant in any analysis of pre-European land utilisation.

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