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AGE OF KAHAROA ASH.

By W.A. Pullar

In the Bay of Plenty it is well known that the Kaharoa Ash Bed is a marker of high value for archaeology, but its quality as a time plane depends on an accurate determination of its age. Because a reliable field sample (N.86/f 504) gives the Kaharoa ash-fall an age of 930 ± 70 years before 1950, we have heretofore assumed A.D. 1100 as an approximate single figure more useful than the clumsy expression, "the chances of its eruption occurring between A.D. 1960 and A.D. 1100 are good but those for the period between A.D. 860 and A.D. 1200 are better." Recent analyses have revealed new difficulties in converting published $Cl4$ ages to calendar years, particularly in the last 2,000 years, a time span of special interest to New Zealand archaeology. For instance, the $Cl4$ age appropriate to the Kaharoa Ash according to the 1961 Report of the Institute of Nuclear Sciences would call for a correction of plus 200 years, providing an amended approximate date of eruption between A.D. 1100 and A.D. 1300.

It appears to us in Whakatane that an independent assessment of the age of the Kaharoa Ash could be made through Maori tradition now that R.W. Halbert has published his memoir, Te Tini o Toi.¹ According to him, Toikairakau, or Toi III, along with others arrived at Whakatane about A.D. 1250 and then constructed Kaputerangi Pa commonly known as "Toi's Pa".

A difficulty in the field is to show that the site reputed to be Kaputerangi is indeed such. In the investigation of Toi's Pa² my colleague A.D. Mabon, who is well versed in the literature of local Maori tradition, assured me that the site probed is genuine. The site is on the only flat land available, and for what it is worth, is commonly known in Whakatane as "Toi's Pa". Furthermore, the pa is not the ring-ditch portion of the site but the terrace and scarp. This latter kind of earthwork has been tentatively suggested by Golson³ as probably associated with Archaic Maori in the Bay of Plenty. We are confident that Kaharoa Ash mantles the terrace and scarp portion as an ash-fall bed, and what is more important, did discover definite evidence of pre-Kaharoa human occupation. All that remains is to identify this occupation with that of Toikairakau; but this no one can do with certainty. Rather we have to assume that this particular site belongs to Toikairakau because a portion of the pa is very old and also because other records of occupation besides Halbert's suggest that Toi III arrived in A.D. 1250. For the moment we feel bound to accept this date, because we lack competence to examine

critically the basis for Halbert's date.

Assuming our earliest occupation to be A.D. 1250, then the Kaharoa eruption occurred later, but how much later we do not know. One would have thought that such a catastrophic event in the Bay of Plenty would have been handed down through tradition, but we are unaware of its mention in local tradition associated with the fleet of A.D. 1350. While it may be fashionable now to place less emphasis on the importance of the fleet in Maori history, no doubt some canoes must have arrived in New Zealand for the date of A.D. 1350 to be perpetuated. The failure of this event to be preserved in tradition could be accounted for by having it occur between A.D. 1250 and A.D. 1350.

Support for this date is given by H.W. Wellman⁴ who says, "... A single Cl4 sample gives an age of about A.D. 1050. The age (of Kaharoa Ash) inferred from stratigraphic position is about A.D. 1300...." Furthermore, at Gisborne where Kaharoa Ash occurs in the oldest soils from alluvium, we are examining soil stratigraphy and soil ageing, working back from the date of the last recorded flood, to arrive at the time of eruption. If we put the date much later than A.D. 1300, we might find difficulty in accepting a timetable accommodating sedimentation and soil formation.

All of the evidence adduced is merely of a supporting kind, but in my opinion is well worth bringing forward as a very rough check on Cl4 ages.

References

- (1) Halbert, R.W. 1961. "Te Tini o Toi". Historical Review, Journal of the Whakatane and District Historical Society. Vol.IX. No.3. pp66-116.
- (2) Mabon, A.D.; Pullar, W.A. 1961. "Kapu-te-Rangi (Toi's Pa.)" Historical Review, Journal of the Whakatane and District Historical Society. Vol.IX. No.3. pp117-128.
- (3) Golson, J. 1961. "Investigations at Kauri Point Katikati". N.Z. Arch. Ass. Newsletter. Vol.4. No.2. p41.
- (4) Wellman, H.W. 1959. "The Stratigraphy of Human Occupation Layers in North Island Coastal Sections, New Zealand." Asian Perspectives. Vol.III. No.1. p92.