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RADIOCARBON DATES FROM KOHIKA SWAMP PA (N68/104), BAY OF PLENTY

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The dates reported here have been received from the Institute of Nuclear Science, D.S.I.R. They are derived from a series of samples collected in 1977 by the writer and Mr M. McGlone (Botany Division, D.S.I.R., Christchurch) during investigations at Kohika Swamp Pa (N68/104), Bay of Plenty (see Lawlor, 1979:34). These investigations are part of a continuing archaeological research programme carried out by Dr G. Irwin of the Department of Anthropology, University of Auckland (Irwin, 1975).

Sample Number	Run Number	Depth below Tarawera Ash	Years B.P. Old half life (5570 \pm 40yrs)	Years B.P. New half life (5730 \pm 40 yrs)
XP2	5853/1	45-50cm	353 \pm 57	364 \pm 58
XP3	5853/2	65-69cm	535 \pm 57	551 \pm 59
XP5	5853/3	105-110cm	729 \pm 58	750 \pm 59 (1)
XP7	5853/4	130-132cm	678 \pm 75	698 \pm 77 (2)
XP9	5853/5	145-146cm	656 \pm 57	675 \pm 59
XP12	5853/6	180-182cm	1365 \pm 75	1405 \pm 80
XP14	5853/7	220-222cm	1605 \pm 65	1650 \pm 65
(1)	Corrected for secular effect 714 \pm 59 B.P.			
(2)	Corrected for secular effect 684 \pm 77 B.P.			

TABLE 1. Kohika radiocarbon dates.

The samples are from Square D17. The D17 section is represented by 3.38m of peat resting on a sand deposit which has been interpreted as marine dune sand. The section contained two identified tephra layers: Kaharoa Air-fall Ash (890 \pm 80 B.P.; see Pullar *et al.*, 1977:711) mid-way in the section; and Tarawera Ash (1886 A.D.) just beneath the surface peat. A third ash was located above the marine dune sand; this deposit may be the Taupo Pumice Air-fall Ash (1830 \pm 50 B.P.; *ibid.*) This stratigraphic sequence of samples encompasses swamp chronology up to and including the time of known habitation at the Kohika site.

The radiocarbon age estimates showed agreement with the relative ages inferred from stratigraphic position and previously dated tephra

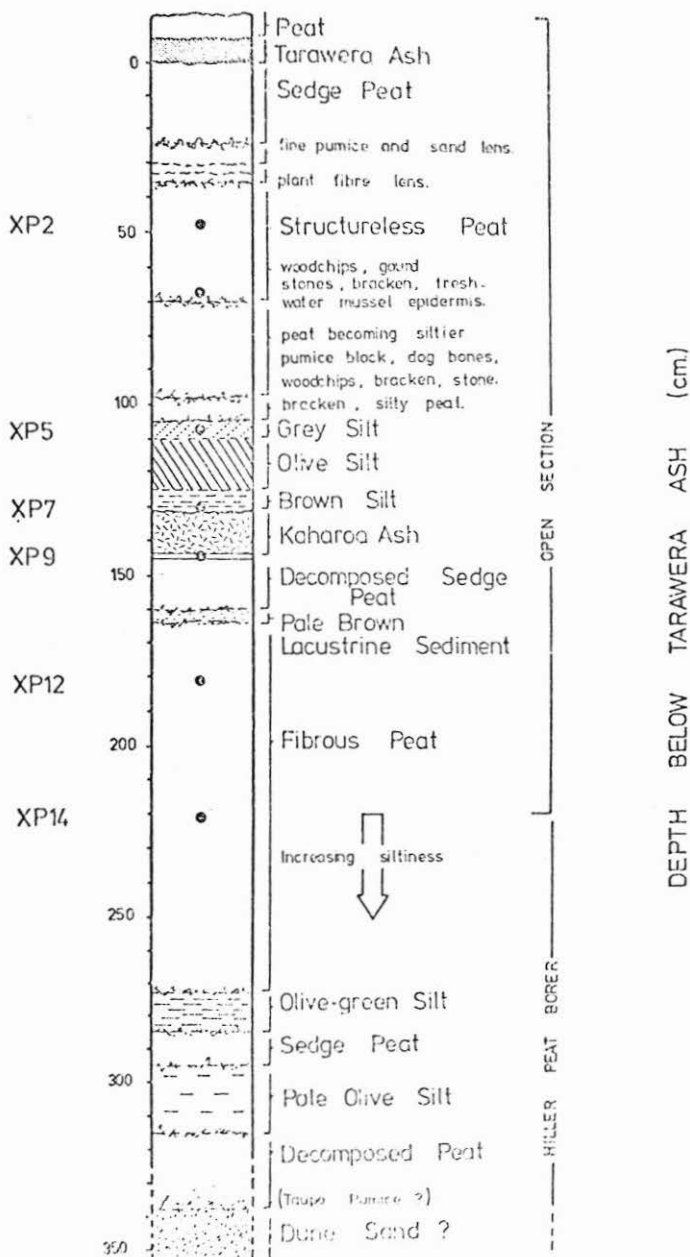


FIGURE 1. Kohika swamp peat (N68/104), Square D17 section.

layers. XP7 and XP9, located directly above and below the Kaharoa Ash, provide a concise age estimate of this eruption. The dates were statistically tested to see if they were significantly different. The two dates were considered acceptable expressions of a single date 665 ± 58 B.P. This result is compatible with another age estimate of Kaharoa Air-fall Ash NZ1765 656 ± 56 B.P. (ibid). The XP5 age estimate is within the 1 standard deviation error range of samples XP7 and XP9 age estimates. The date indicates that the silts probably accumulated very rapidly after the eruption.

The increased vagueness of the sequence associated with sample XP5 effects the dating of human occupation at the site. Samples from structures in the occupation floor nearby are yet to be submitted for dating.

References

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and J.E. Cox 1977 Air-fall Kaharoa Ash and Taupo Pumice, and sea-rafterd Loisel's Pumice, Taupo Pumice and Leigh Pumice in northern and eastern parts of the North Island, New Zealand. New Zealand Journal of Geology and Geophysics, 20:697-717.