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LETTERS TO THE EDITOR

Dear Editor,

Thank-you Owen Wilkes for the review of Phillips' "Nga Tohu a Tainui", Volume 2. (See *Archaeology in New Zealand*, Vol. 39, No 2. pp. 149-153). Looking at the small part of the book which deals with Taranaki sites I was soon aware of problems, but not knowing the Waikato it was not clear how general this was.

On page 17 (top photograph) the pa above the north end of Waiti Beach is Whakarewa, not "Wharerewa". The lower picture does not show "Onukukaitara" and "Puketakauere" but two sites close to the Pukearuhe Road at Waiti. (N99/31 and 32, which are listed and pictured in Buist's "Archaeology in North Taranaki", pages 56 and 57). Onukukaitara and Puketakauere are 20 km away, south of the Waitara River. Puketakauere is depicted on page 272, where it is labelled "Pukekohe". Nothing remains of the latter which was a pa at the centre of today's town of Waitara, and in the 1860s site of the main British Army base in the district. The pictures on page 273 said to show "Ngapuketurua" show two different sites, neither of them Ngapuketurua.

The view on page 270 shows the hill Tuhingakakapo south of Mokau River. The name "Pukekahu" given by Phillips refers to another, lower, hill above State Highway 3, not shown in the photograph. Phillips' map reference is incorrect for both places. The pa pictured on page 281, situated above the main road north of the Urenui River bridge, is not "Pohokura". Best's "Pa Maori" gives the name Orongowhiro. Phillips' map reference is correct for the real Pohokura, which is downriver by the camping ground.

The above problems relate to wrongly identified photographs. I have not worked carefully through the text, nor have I checked all map references as Owen has done for the Waikato. One item which did catch my attention was the page 262 mention of a British redoubt north of White Cliffs - which did not exist.

Nigel Prickett
Auckland Institute and Museum

Dear Editor,

In defence of radiocarbon... sort of.

In the March 1996 issue of *Archaeology in New Zealand* is an article describing plans to implement obsidian hydration dating (OHD) as a dating tool in New Zealand (Sheppard *et al.* 1996). This is an extremely interesting

development that has the potential to make a major contribution to our understanding of pre-European New Zealand settlement. The OHD technique has been around for some time now and has had a controversial history, partly alluded to in the article. It would appear that the early difficulties have been overcome and it is now ready to take its place as an archaeological research tool. I am especially interested to see the inclusion of nuclear resonance profiling in the proposal. This will avoid the problems that can occur with optical techniques and should be applicable even on obsidian samples that are not suitable for conventional methods.

However, in the section entitled General Overview there occurs a statement that is quite breath-taking: "Archaeology in New Zealand has been substantially compromised by the cost and imprecision of radiocarbon dating". There then follows a reference to the \$800 cost of an AMS date, and a list of the corrections and caveats that apply to ^{14}C dates in spite of that high cost. To deal with the quoted sentence first, words have meanings and one must assume that the users of those words intend the meaning conveyed. But do the authors really believe that archaeology in New Zealand, and for that matter anywhere else, would have been better served if radiocarbon dating had never been invented? That surely is the inference to be drawn. The logic of the statement seems a little insecure, since the reference to the cost presumably means "too expensive", so that a lower cost would mean more radiocarbon dates could be obtained, but then the "imprecisions" would compromise archaeology even more... Damned if you do, and damned if you don't, as they say.

As manager of the Rafter Radiocarbon Laboratory, I am well aware that the transition from fully Government funded science to a tighter user-pays policy has caused stresses to research budgets everywhere (ourselves included), and from time to time I have made ad hoc decisions about charging in particular cases where real problems have occurred. But, unfortunately, the system *has* changed. I once had it put to me that we should provide dates free, "for the good of New Zealand science". This is a view that I can perhaps sympathise with, but to implement such a policy I must first convince my employer that the moral benefits outweigh the financial costs, then persuade the people working in the radiocarbon laboratory to donate their time and labour without salary, and similarly persuade the manufacturers of the increasingly sophisticated and expensive instruments required to equip the laboratory to donate their products free of charge. Until these things can be accomplished, I am afraid that we are stuck with FRST.

But I am more concerned with the tone of the early part of the article, which seeks to advance a particular technology by focusing attention on perceived problems with a completely different technology. Once fully developed, OHD will have an important part to play in archaeological research, and I have no

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difficulty at all with that. But to suggest that it is the "magic bullet" that will bypass all the problems of radiocarbon dating strikes me as just a bit simplistic. I have to agree with their list of factors that need to be considered when interpreting a radiocarbon age (inbuilt age, marine correction, calibration curve non-linearity), indeed the list is not complete. I could add a couple of items, including some which I suspect have a direct bearing on an issue of pre-European New Zealand and radiocarbon dating that is currently under discussion. In the fashionable management-speak of the day, these things are challenges, not barriers. They simply mean that we have to work harder and be more careful about drawing conclusions about our measurements, and acknowledge that there are limits to what we can do. They also remind us that what we are doing is asking questions of nature (eg. how much radiocarbon is in this object?) that have only a very indirect bearing on what we may really be interested in (eg. when was this site occupied / vacated / destroyed?). Nature does not give two hoots about the interests and preoccupations of the human race; it would be nice if the radiocarbon calibration curve was a dead straight line of unit slope, but cosmic rays, solar activity, the geomagnetic field and ocean ventilation all have their own agendas to follow, so there is little use in complaining about them. Is OHD so very different in this regard?

The point, surely, is that since we have had presented to us on a platter a (nearly) steady cosmic ray flux, a nitrogen-rich atmosphere, a surprisingly high neutron reaction cross-section for forming ^{14}C from ^{14}N , and a near anthropologically-ideal ^{14}C half-life, we would be crazy not to try to extract every bit of information we can from the situation. There are, and will be, other dating techniques that will compete with and complement each other, and each will be able to do things the others cannot. Radiocarbon dating is not much use for obsidian, but then OHD will not get you very far with wood, charcoal, bone, shell, groundwater, forams, seawater or atmospheric gases. OHD does not need to run down radiocarbon dating in order to claim its rightful place in the sun, and in a spirit of true conciliation I shall not pass on some of the stories I have heard about OHD. I can't say fairer than that.

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Reference

- Sheppard, P.J., Barker, P., Irwin, G.J., Jones, M., Stevenson, C. and Sutton, D.G. 1996. The development and application of New Zealand obsidian hydration dating, 1996-1998. *Archaeology in New Zealand* 39(1): 16-29.