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LETTERS TO THE EDITOR

Dear Editor,

I was saddened when, in May, I learned of the death of Les Lockerbie. I would like to add my personal tribute to the obituary by Nigel Prickett.

Les was a fine archaeologist, a fine man, and a very good friend. The loss of his wife Ina some years ago was a great blow to him and his daughter. I was often a guest at his home at 311 Stuart Street, Dunedin. Les was a considerable raconteur, once one had got him started - he had a considerable sense of humour, but found it hard to suffer fools gladly.

He and I had a few collecting trips together, but we were not able to find a time for out planned excavations at Old Neck, Stewart Island - these he carried out with others, but Canterbury Museum benefitted from them.

Les was doing fine archaeological work years before the arrival of Jack Golson. He taught me a good deal of practical archaeology, as distinct from excavating, moa and other bird bones, and I think may be regarded as one of New Zealand's first true archaeologists as distinct from fossickers, looters and 'curio hunters'.

Many of us will miss Les for his outstanding personal qualities, as well as his splendid contributions to New Zealand archaeology.

Ron Scarlett

Dear Editor,

I support Rodger Sparks' comments (*AINZ* 39(3) pages 238-9) regarding the recent paper by Sheppard *et al.* (1996) (*AINZ* 39(1): 16-29) concerned with measuring obsidian hydration rims in New Zealand archaeology.

Similar statements to those made by Sheppard *et al.* (1996) have been made previously in this journal. In *AINZ* 37(4) page 272, for instance, Sutton and Sheppard (1994) stated that:

> "Archaeology in New Zealand is substantially compromised by the cost and imprecision of radiocarbon dating - its principal means of age determination used at present. High quality Accelerator Mass

Spectrometry (AMS) dates cost c.$800 (NZ) each...*etc*".

In *AINZ* 39(1) page 16, Sheppard *et al.* (1996) restated almost verbatim that:

> "Archaeology in New Zealand has been substantially compromised by the cost and imprecision of radiocarbon dating. High quality Accelerator Mass Spectrometry (AMS) dates cost NZ$800 each and they routinely suffer from problems of inbuilt age...*etc*".

The claim that ^{14}C has "substantially compromised" New Zealand archaeology runs counter to the contribution of radiocarbon dating to establishing a proper chronological framework for the prehistoric period in New Zealand.

There are other issues in these statements as well which I think require some qualification. First, there is the issue of cost. In arguing that radiocarbon dating is expensive, Sheppard *et al.* (1996) do not mention the range in available prices. In fact radiocarbon dating costs vary between $475 (for LSC dates at Waikato) and $800 (for AMS dates at IGNS). It would be intriguing in this context to know the actual cost of Obsidian dating under the regime of full cost recovery applicable to both New Zealand radiocarbon laboratories.

Second, there is the issue of precision. Sheppard *et al.* (1996) do not mention the High Precision (HP) radiocarbon method available at the University of Waikato Laboratory for over 3 years anywhere in this discussion. It has been advertised in brochures sent to Auckland University's Anthropology Department and on our World Wide Web site. At 0-1000 years BP, the standard error obtainable for a HP date is $\leq \pm 25$ yr. Calibration of radiocarbon results is well known to involve an age spread, even for highly precise determinations. Our current FRST funded research wil] yield a 1000 year New Zealand calibration curve which may help improve this situation and determine the applicability of the -40 yr offset in the Southern hemisphere to further increase accuracy and precision.

Third, the statement "High quality Accelerator Mass Spectrometry (AMS) dates" implies that other ^{14}C measurement methods such as Liquid Scintillation Counting (LSC) and Gas Proportional Counting (GPC) are of less quality. By "quality" I assume the authors mean analytical accuracy and reproducibility. The recent IAEA Intercomparison reports show that for results obtained from measurement of reference standards by 69 radiocarbon laboratories, there was no relationship between accuracy and laboratory method. Rozanski *et al.* (1992:518) state in their paper on the 1990 IAEA ^{14}C Intercomparison exercise that:

> "Our conclusions are: 1) no appreciable differences in the relative performances of different laboratory types on the individual reference samples; 2) no significant differences in performance due to counter technology...*etc.*"

The overall impression in the two papers published in *AINZ* is that the authors are trying to denigrate radiocarbon dating to promote the OHD method. Of course there are certain well known drawbacks in radiocarbon dating. As Sparks suggested, impediments within radiocarbon dating such as inbuilt age and calibration, constitute challenges rather than barriers. Both laboratories are active in research to improve the radiocarbon method for archaeology and other disciplines and in the past few years several important developments have resulted to improve dating in New Zealand. It is counterproductive to denigrate ^{14}C to present alternative (and complementary) dating methods.

We should also not forget that the evaluation of OHD requires comparison with results from other, better established dating methods. One of the only ways to achieve this is by comparison with radiocarbon dates from identical sites and contexts (see Stevenson *et al.* 1996 for instance). Clearly, to argue that radiocarbon dating is imprecise and then use its results to check one's own is nicely circular.

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References

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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.

Sparks, R.J. 1996. "In defence of radiocarbon...sort of". Letter to the Editor, *AINZ* 39(3):238-9.

Stevenson, C.M., Sheppard, P.J., Sutton, D.G and Ambrose, W. 1996. Advances in the hydration dating of New Zealand obsidian. *Journal of Archaeological Science* 23(2):233-42.

Sutton, D.G and Sheppard, P. 1994. Dating New Zealand prehistory using Obsidian Hydration. *Archaeaology in New Zealand* 37(4):272-81.

Dear Editor,

The Pacific rat *Rattus exulans* in New Zealand

There are now two published references to the radiocarbon chronology for the Pacific rat in New Zealand. These are:

Holdaway, R.N. 1996. Arrival of rats in New Zealand. *Nature* 384 (no.6606): 225-226.

Anderson, A.J. 1996. Was Rattus exulans in New Zealand 2000 years ago? AMS Radiocarbon ages from Shag River Mouth. *Archaeology in Oceania* 31:178-184.

Readers should note that Anderson (1996) is in part a reply to the unpublished draft notes for my seminar given at Landcare in Christchurch in April. Several details of the content of that seminar, including the main conclusions, many of the data, the additional tests, and the origin and authorship of at least two of the dates are incorrectly or incompletely reported in Anderson (1996).

I am preparing a paper giving details of the sites, stratigraphy, and origin of specimens for the rat radiocarbon study for natural sites, and multidisciplinary studies (other than isotope studies) begun in late 1995 to test the gelatin chronology.

Yours etc.,

Dr Richard N. Holdaway