

Old rats –

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Dear George, and Eric:

(sigh)

Eric: you said

"Quote Abstract A consensus has not been reached on the validity of "old"

(pre-Polynesian settlement) 14C ages for Pacific rat bones from New Zealand.

Dead right"

No, its inconsequential and a polite way to start an abstract.

Consensus is seldom reached on issues where a paradigm shift is suggested.

However, the weight of data will support the probability of a certain observation being valid. And quite frankly, Holdaway and I and other co-authors have done a significant amount of well organised, documented and peer reviewed research which stands up rather better than responses which say "Its wrong." State actual reasons, show proof with data as to why previous data is wrong. Don't just suggest possibilities– show me why it is wrong.

Prof Robert Hedges (Oxford Radiocarbon lab) did a review of all the data, and processing and analysis. Did you miss that one? Hmmm... it was right there, in the next issue.

<http://www.rsnz.org/publish/jrsnz/2000/24.php>

His review of these procedures could find no reason that the ages could be wrong with respect to processing and analysis.

Then, its followed by another article once again saying "no, it isn't".

Again BIG SIGH. That's what we do as scientists: we construct a view, we modify that view vis data, we argue in press and at mtgs with each

other and we get points for how robust our arguments are (these points not actually being redeemable for anything other than beers from people who agree with you, however.)

And you said:

"Claim: That *Rattus exulans* has been present in New Zealand 800 years prior to the Maori settlement of New Zealand..

Refutation 1

In 800 years of occupation of the two main landmasses of New Zealand we have '5' measurable samples of *Rattus exulans*"

Uh, no -- I suggest you read on.

"Refutation 2

Is/are there any 700 or 600 or 500 or 400 or 300 or 200 or 100 year before Maori settlement *Rattus exulans* samples tested and written up?

And instead of 5 samples of *Rattus exulans* I'd expect a database of samples for North and South Islands populations as North Island and South Island populations are claimed."

Uh, no, again -- read on

ALL I CAN SAY IS:

Do you boys really have no idea of the size of the database?

EIGHTEEN North and South Island kiore dates were published in the original Nature article (Holdaway 1996, Nature 384 225–226.

FIFTEEN dates are significantly older than the generally accepted dates for human settlement.

And yes, there certainly were a RANGE OF OTHER DATES PRODUCED.

The article that you cited

"Differential reliability of C14 ages of rat bone gelatine in South Pacific history Journal of the Royal Society of New Zealand : 30: 243–261" could only access and collate published ages. There were a considerable number of ages that had been run during those years that were not then published – and not included in that article.

In our work 1995 to 1996, there certainly are ages of less than c. 950 yrs BP, and were so interspersed within older dates that analytical bias or variability in laboratory preparation would have had to be notably selective.

As a fact, some 32% (n = 14) of subfossil rat bone ages produced during 1995 to 1996 were determinations of less than 950 yrs BP.

A further test of the system with two modern rats analysed in 1995 (which were run in the series where ancient rat bone were run) returned bomb carbon-affected ages that accurately reflect known date of death to within 5 years.

PS: For the uninitiated – it would be difficult to get spot on bomb carbon affected ages if a "processing effect" was producing *too old* dates on rats with unknown ages (that is, the ancient samples we were doing at the same time.)

Analytical bias early in the series as cited by Anderson (2000) also does not account for the accurate dating of a paired sample (bird bone and moa eggshell) from Hukanui Slab (2995-/+72 and 2905-/+88 yrs BP respectively) in the series which included three "old" rat dates from the Ernescleu site.

Of the remaining ages greater than c. 950 yr BP produced in that period, none of the results produced for those samples were thought to be at odds with the stratigraphic situation in a given excavation at a natural site (Holdaway et al 2002).

YOU ALSO SAID:

"Holdaway (1996) asserted that sample NZA – 6636 as recovered from Hukanui #76 by J C Yaldwyn in 1959 is the one in the labelled matchbox !

Subsequent excavations at this site (Hukanui) do not support the claim ! The only rat bone taken from the site was a rat jaw bone (lower mandible)"

ERIC, I know that you couldn't have known this, but to make a bald statement instead of asking.... see below...

and GEORGE offers a snark:

"Provenance. Lovely word that. It would appear that it has not had much usage in this. A labelled matchbox containing 40 year old samples and a site that yields no more of this bone....."

George, I get samples submitted wrapped in rolling papers that have been stuck into film caps. At least John Y had a clean matchbox, labelled it clearly, and got it archived.

John Yaldwin was very up front about the discovery of the bone when he did excavate it. There is a sweet article from the time in which he states how he thought it was special, coming from under the Taupo ash, and is quoted as saying, if only 14C technology could date such a small sample.

There ***were*** ounces and ounces, dozens and dozens of rat bones taken from that area/site around that time, by those early fossickers.

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Unfortunately, they were all thrown into tea tins and tobacco pouches (sez something about the provisioning of these field trips, ya think?) and NOT labelled with any excavation information. That's what I saw in a museum, and it was sad –They were pretty worthless as far as what age they might be –

A dip into the New Zealand kiore controversy can be amusing. For those of us who have worked very diligently to gain new insight, its less fun than it once was – especially after seven years of work that has been done six ways to Sunday, and published. The "rats aren't old" group pose perfectly reasonable questions. They have been met by long hours in the lab.

The bottom line is: there are v. old rat dates. This isn't about early settlement. They are not from archaeological sites; they are from sites such as where ancient owls spat up remains from meals. We know how diet makes bone look too old. We tested this. We tested for paired sample agreement, we tested by OSL.

Funny thing happened at the last NZ Archaeological Society annual mtg. A paper poll was taken for the question "Old rats: yes or no."

Old rats won.

And if you want to consider what an early introduction of a new predator to a pristine environ would do to exterpatation and extinction, please do look up the many articles Richard Holdaway has published, based on his world–class analysis of same for bird species here in NZ.

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