

FISHMONGER'S SWALLET, ALVESTON, GLOUCESTERSHIRE, RADIOCARBON DATING

by

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ABSTRACT

Details are given of the eleven radiocarbon dates which have been obtained on specimens from Fishmonger's Swallet, Alveston. Although the first dates to be obtained are generally rather younger than the latest ones, all appear to come from material deposited in the late pre-Roman Iron Age.

INTRODUCTION

There have been three phases of investigation of the finds from Fishmonger's Swallet when ^{14}C dates have been obtained. In 2000, during the production of the Time Team television programme about the work at the site, three dates were commissioned from the laboratory of the University of Waikato, in New Zealand. These were on specimens of human, bovid and canine bone. Later, a single date was obtained on a human femur believed to have been deliberately broken (Cox and Loe, 2022, this volume). All of the above dates were standard radiometric dates obtained using beta counting methods.

In 2021, seven further dates were obtained on bone specimens from the site, including a further date on the broken human femur. These were carried out using AMS techniques. In total, eleven dates have now been obtained on specimens from this site. Details are given in Table 1 and in Figure 1.

DISCUSSION

The data obtained from the University of Waikato came from material submitted during the production of the Time Team television programme. All three of the submitted samples were of bone, but apart from their broad identification as human, bovid and canid, no further information exists about the specimens, either in terms of skeletal element or stratigraphic context, although as is discussed elsewhere (Hardwick, 2022, this volume) the latter omission may not be of importance as the deposit has been substantially reworked by the stream. The standard errors associated with these three dates are larger than would be expected for samples of that age and the techniques then in use as the sample sizes were relatively small and thus the CO_2 produced had to be 'diluted'. The laboratory at that time would normally have expected precision of around ± 40 years (F. Petchey, *pers. comm.*).

The sample submitted to Beta-analytics came from a singular specimen of a human femur believed to have been deliberately broken, as this was identified during the course of the post-excavation study as being of particular interest (Cox and Loe, 2022, this volume). This same specimen was reanalysed during the most recent work on the collection. The new date

Sample cat. no.	Element	Lab code	^{14}C yr	±	cal BC (95%)		Mean	SD	$\delta^{13}\text{C}\text{‰}$
G10-1.1	Femur (human)	Beta-150613	1,940	40	6	208AD	90AD	58	-20.6
	Human	WK-82222	1,990	80	175	231AD	22AD	109	-26.6
	Bovid	WK-82223	2,030	80	204	206AD	35BC	115	-24.4
	Canid	WK-82224	2,030	100	232	220	40BC	138	-23.8
G10-1.2	Femur (human)	BRAMS-5057	2,036	28	107	62AD	28BC	43	-20.1
G10-1.3	Mandible (human)	BRAMS-5058	2,052	28	156	23AD	54BC	47	-20.5
G10-1.4	Mandible (human)	BRAMS-5059	2,063	28	162	10AD	71BC	47	-20.3
G10-1.1	Femur (human)	BRAMS-5060	2,048	28	154	26AD	47BC	47	-20.3
G10-21.24	Mandible (canid)	BRAMS-5061	2,070	28	168	26	81BC	47	-21
G10-21.202	Mandible (canid)	BRAMS-5062	2,109	29	199	46	126BC	59	-21.4
G10-21.208	Mandible (canid)	BRAMS-5063	2,055	29	157	21AD	59BC	49	-21.4

Table 1. Radiocarbon determinations from Fishmonger's Swallet, Calibrated in OxCal v4.4 (Bronk Ramsey 2021). Atmospheric data from Reimer et al (2020).

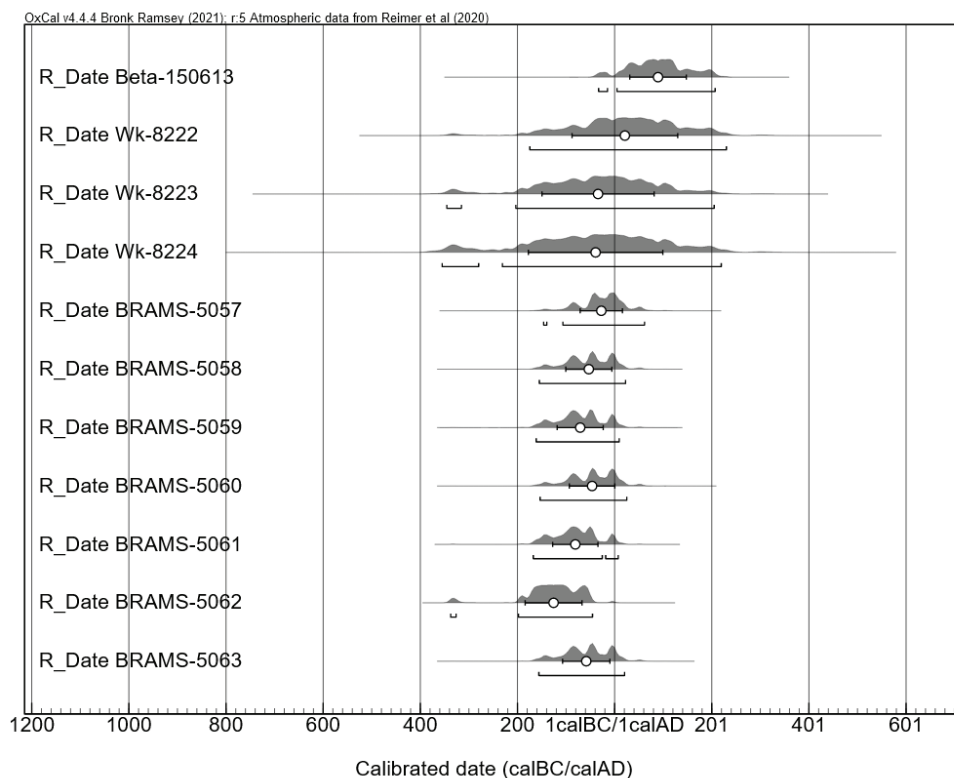


Figure 1. Plot of calibration curves, calibrated in OxCal v4.4 (Bronk Ramsey 2009). Atmospheric data from Reimer et al (2020). The plot shows spans for 94.5% probability, for the mean date of each calibrated plot and the σ range (calibrated error bar) for each sample.

(BRAMS-5060, see Table 1.) has given the specimen an age some 150 years older than the previous estimation. This difference can probably be attributed to the refinements in sample preparation techniques, for example methods such as ultrafiltration, that have taken place in the two decades since the original work. The significance of this clarification of the age is that it removes the sample from any possibility of its damage and deposition being associated either culturally or politically with the Roman invasion of Britain.

The remainder of the newly obtained dates were commissioned to ask two specific research questions. The first was to attempt to constrain as far as possible the period over which the human material had been deposited and the second to similarly constrain the deposition period of the remarkable canid assemblage (Peto, *et al* 2022, this volume) and to ascertain whether it was in any part contemporaneous with that of the human.

All the dates so far obtained point to deposition during the late pre-Roman Iron Age, but it is important to note that this by no means guarantees that the whole assemblage was deposited at that time. More dates could quite easily show that this is not the case. In this regard see Schulting *et al.* (2019). The presence of Samian ware (terra sigillata) recovered in the 1990s (Hardwick, 2001) and black burnished ware recovered more recently generally supports these dates.

ACKNOWLEDGEMENTS

The authors are grateful to Dr Fiona Petchey of the University of Waikato for discussion of their work on the original dating carried out in 2000 and to the Oliver Lloyd Memorial Fund for underwriting the costs of obtaining the most recent dates.

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