

**Channel Tunnel Rail Link  
London and Continental Railways  
Oxford Wessex Archaeology Joint Venture**

**The radiocarbon dates from Sandway Road, Lenham,  
Kent**

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## 1 INTRODUCTION

The aim of the radiocarbon programme, which was undertaken in the Assessment stage, was to date the Mesolithic flint assemblage in hollow 558 and a possible grain associated with the flints.

Three radiocarbon results were obtained (Table 1) and have been calibrated with the atmospheric data presented by Stuiver *et al.* (1998) and performed on OxCal ver 3.9 (Bronk Ramsey 1995; 2001). The results are expressed at the 95% confidence level with the end points rounded outwards to 10 years following the form recommended by Mook (1986).

## 2 HOLLOW 558

The flints from Hollow 558 (feature context 72) were of later Mesolithic type (i.e. *c.* 6500-4000 cal BC). Bulk samples from the hollow contained charred hazelnuts, charcoal, and also cereal grain. The presence of charred cereal remains in the later Mesolithic would be highly significant. Therefore the identifications, the relationships of those remains, their stratigraphic position, and the taphonomic processes involved need to be examined carefully (cf. Allen and Bayliss 1995; Allen *et al.* 2004).

The hollow was sub-circular and approximately 3m in diameter and *c.* 0.3m deep, filled with a uniform sandy deposit which became paler with depth. It was cut by a Middle Bronze Age ditch, 555, which was clearly identified and removed before the excavation of the hollow (Fig. 1).

The fill of the hollow was allocated a single context (72) in the field, although the subsequent detailed investigation of a soil monolith noted pedological differentiation, with the upper 70mm being a dark humic sand, and the lower 300mm being a loose fine and medium sand. The north-eastern half of the hollow was excavated in two quadrants, and its south-western half was excavated in a grid of 0.25m x 0.25m squares in spits of 50mm thickness (hereafter referred to as collection units), in order to provide detailed spatial distribution of the flints (Figure 2).



*Figure 1: Hollow 558 viewed from the south-west showing the sampling strategy. Ditch 555, which has already been excavated, can be seen cutting across the hollow.*

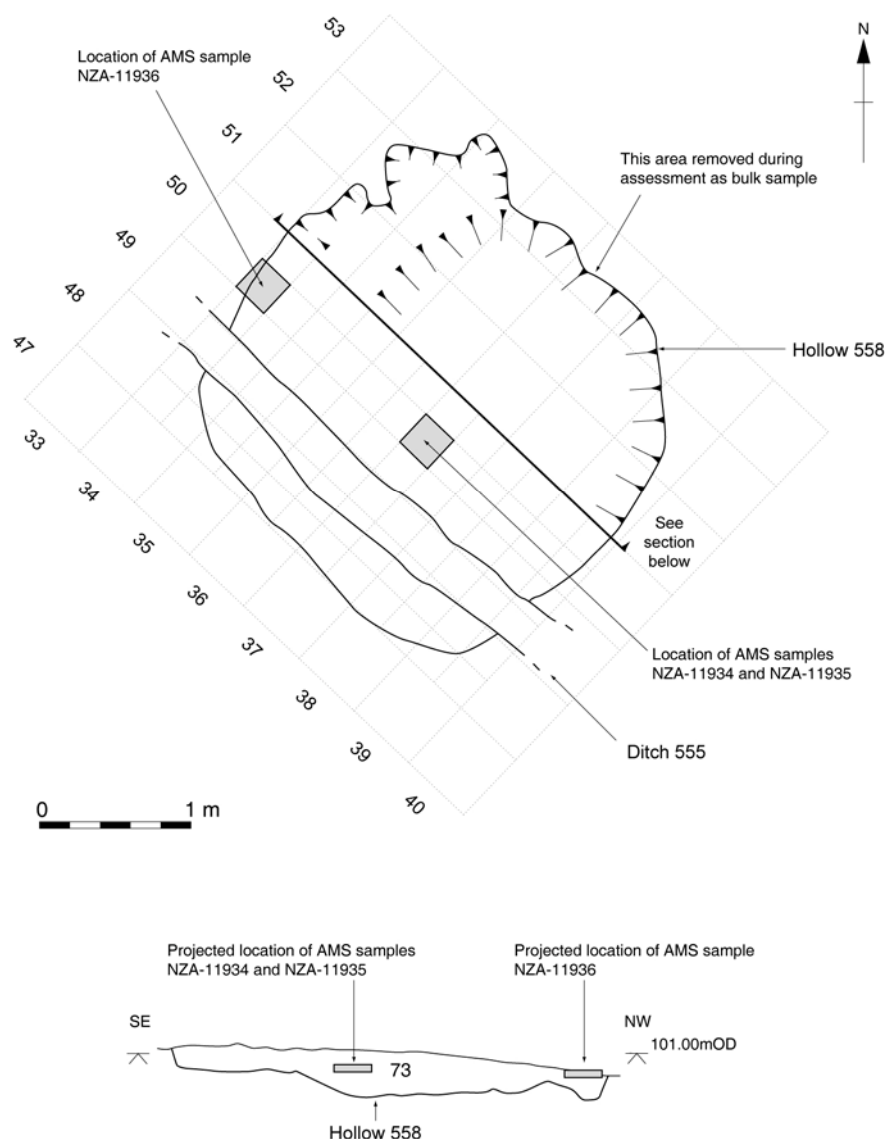


Figure 2: Plan and section of Hollow 558 showing the location of AMS samples (NZA-11934-6)

## 2.1 The Finds

The large assemblage was predominantly of microliths, microburins, Krukowski microburins bladelets, flakes, and other debitage. As well as these Mesolithic flints, some possible Neolithic types were present, as were four small sherds of Neolithic and Neolithic/Bronze Age pottery.

One sherd (4g) of flint tempered Early/ Middle Neolithic pottery was recovered in hollow 558 from a collection unit immediately beneath Middle Bronze Age ditch 555 (374951). Three very small fragments of Neolithic or Bronze Age pottery, with a total weight of less than 1g, came from a collection unit (384943) by the side of the ditch.

This suggests that either a very clean primary fill of the ditch was not seen or that the pottery had worked its way into the sand below and to the side of the ditch. These small sherds might be thought to be too large to have been incorporated through macropores which are root or worm/insect burrows. Macropores can allow for the intrusion of charred remains and items generally smaller than c. 5mm. In the sandy soils at Sandway Road, biotic and pedogenic activity may have blurred the edges of features, especially where they were cut into other features.

## 2.2 Charred Plant Remains

Three dates were obtained from Hollow 558 (Table 1). The first was on one of a number of charred hazelnut fragments from collection unit (375051) in the centre of the hollow. The unit was at least 0.25m from the edge of Bronze Age ditch 555 and at a depth of 100-150mm. The hazelnut produced a result of  $9318 \pm 50$  BP (NZA-11934), placing it in the earlier Mesolithic (8740-8330 cal BC).

The second date was on a charred grain of cf. *Triticum* sp. (wheat) from collection unit 345031 on the north-western edge of the hollow. This unit was also at least 0.25m from the edge of Bronze Age ditch 555 and at a depth of 0-50mm. The grain produced an Early Bronze Age determination of  $3523 \pm 45$  BP (NZA-11936) calibrating to 1960-1690 cal BC. The size of the grain is such that it is thought likely to have arrived in the context via macropores.

The third date was on one of two charred plant remains from the same sample as the hazelnuts. One of these remains was thought to possibly be a poorly preserved cereal grain resembling *Triticum/Hordeum* sp. This yielded a determination of  $6920 \pm 45$  BP (NZA-11935) (5900-5710 cal BC), placing this in the late Mesolithic – a period for which the presence of cultivated cereal grain would be highly significant. It is also possible that it arrived in the context via macropores.

Of these three dates, the charred hazelnut gave an earlier Mesolithic date potentially three millennia earlier than the flint. Although the date of the possible cereal grain accords well with the majority of the flint, later pottery and possibly later flint are also present. Some materials may have arrived in the hollow via macropores, as shown by the third date on the Middle Bronze Age cereal.

Although NZA-11934 and NZA-11935 indicate episodes of earlier and later Mesolithic burning, prudence dictates that the results cannot be used to provide a chronological control for the flints.

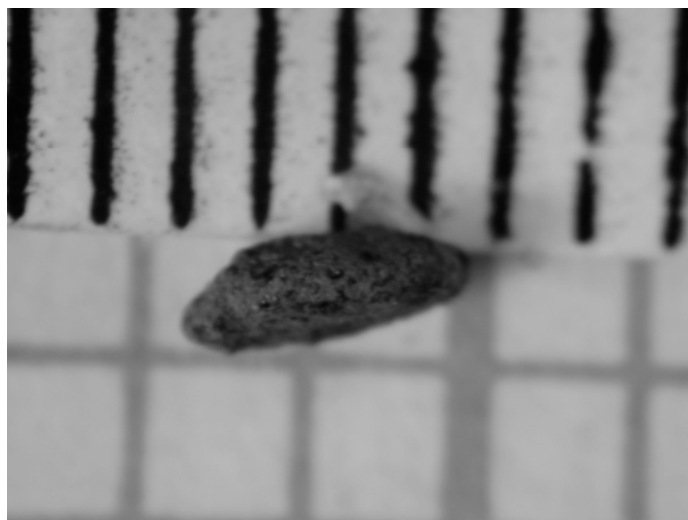
### ***2.2.1 Identification of the charred remains***

The possible cereal grain (*Triticum/Hordeum* sp.) was identified by Alan Clapham and Martin Jones before submission for dating, the process of which would destroy it. Two views of the item (and one view of the grain from collection unit 345031) were photographed (Figures 3a and 3b) prior to submission (the upper scale in Figure 3a is in mm).

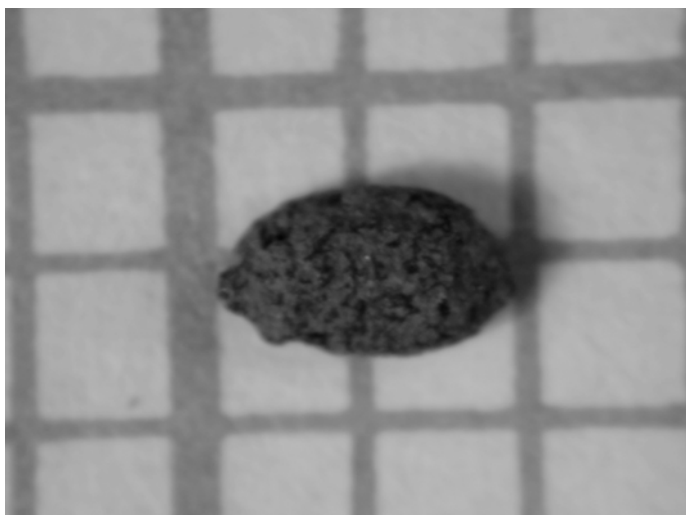
The item is sub-oval, around 4mm in length, 2mm wide and 1-2 mm in height with a flattened ventral surface and slightly convex dorsal surface. No ventral furrow could be seen on the image, while it tapered into what appeared to be an embryo scar in the lateral view.

The resultant date from the item (5900-5710 cal BC) is over one millennium earlier than the earliest evidence for cereals in England and slightly earlier than the earliest agricultural sites in some adjoining regions of continental Europe such as the Netherlands, where the earliest TRB settlements date to c. 5500 cal BC.

Given the early date obtained and the identification as a possible grain rather than certainly being one, the photographs were re-examined. On this basis it has been suggested by Gordon Hillman that the item is the inner part (mericarp) an Apiaceae fruit and probably not a cereal caryopses. Based on size and shape, the plant could be fool's parsley (*Aethusa cynapium*), wild parsley (*Pastinaca sativa*), cowbane (*Cicuta virosa*) or water droplet (*Oenanthe* sp.).



*Figure 3a: Side view of charred ?mericarp of an Apiaceae fruit (lower grid in 2mm squares)*



*Figure 3b: Plan view of charred ?mericarp of an Apiaceae fruit (grid in 2mm squares)*

### 3 CONCLUSIONS

Although earlier and later Mesolithic dates were obtained from Hollow 558, a careful review suggests that they do not necessarily date the flints. Similarly, the case for the earliest dated grain in England having been found at Sandway Road is not proven.

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*Table 1. Radiocarbon results from Sandway Road*

<i>Feature</i>	<i>context</i>	<i>sample</i>	<i>context details</i>	<i>material</i>	<i>result no.</i>	<i><math>\delta C^{13}</math></i>	<i>result BP</i>	<i>cal</i>
hollow 558 (72)	345031	44	spit 31 0-50mm	grain cf. Triticum sp.	NZA-11936	-24.6	3523±45	1960-1690
hollow 558 (72)	375051	49	spit 51 100-150mm	Charred plant remain	NZA-11935	-23.8	6920±45	5900-5710
hollow 558 (72)	375051	49	spit 51 100-150mm	Hazelnuts	NZA-11934	-24.6	9318±50	8740-8330