

SILBURY HILL, WILTSHIRE
A REANALYSIS OF THE ANTLER ASSEMBLAGE
EXCAVATED FROM SILBURY HILL IN 1968-70

ENVIRONMENTAL STUDIES REPORT

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**Silbury Hill
Wiltshire**

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SUMMARY

This report presents a reanalysis of the antler assemblage recovered from Silbury Hill during excavations between 1968 and 1970. No antler survives from the 1968 season. The assemblage, originally analysed by Neville Gardner (Gardner 1987 ; Gardner 1997), includes at least three shed antlers, which probably represent tools used in the construction of the monument.

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CONTENTS

List of tables	3
List of figures.....	3
Introduction	1
Methods	1
Results	1
Antler from excavations in 1969	2
Antler from ditch contexts excavated in 1969.....	2
Antler from summit contexts excavated in 1969	2
Antler from excavations in 1970	4
Discussion and Conclusion	5
References	10

LIST OF TABLES

Table 1 Antler fragments excavated in 1969	7
Table 2 Antler fragments excavated in 1970.....	8
Table 3 Osteometric data from antler fragments	9

LIST OF FIGURES

Figure 1 Refitting antler fragments 650 & 654.	3
Figure 2 Antler from Summit Layer 2.	4
Figure 3 Refitting antler fragments 651 & 660. Possible stump of bez seen above letter A, possible origin of brow seen above letter B.....	4
Figure 4 Antler 778.	5

INTRODUCTION

Antler fragments recovered during the 1969 and 1970 summit excavations at Silbury Hill are reported here, alongside a very small assemblage of fragments excavated from the ditch in 1969. The assemblage has previously been reported by Gardner (Gardner 1987; 1997). Although Gardner reported that "*sporadic animal bone and pieces of red deer antler were found in the tunnelling of 1968*" (1997, 47), these fragments were not available for reanalysis and inclusion in this report.

The majority of fragments reported here are indeterminate pieces of beam and tine, but the assemblage includes four larger pieces, which may represent antler picks. Three of the larger pieces include the region of the burr and in all cases they are shed. Three of the large pieces are from left side antlers and one is a right; all are development stage E or above (following Schmid 1972).

METHODS

Each contextual group of antler fragments was examined and the following details recorded in Table 1 and 2. The more distinctive or complete antler fragments and those with a unique catalogue number (ID number) were recorded individually:

- ID number, when present
- year of excavation and context details
- number of fragments (including refitted fragment count, when applicable)
- weight of fragments
- description of anatomical regions present
- stage of development (following Schmid 1972)
- whether shed or unshed
- osteometric data (following Haltenorth and Trense 1956 ; Ahlén 1965 ; Von den Driesch 1976 ; Clutton-Brock 1984 ; Legge 2008)
- description of any wear evident
- description of any gnawing evident

The anatomical nomenclature used in this report follows Clutton-Brock (1984, 11) for names of individual tines and definition of anterior/posterior orientation, and von den Driesch (1976, 36-7) for definitions of proximal/distal orientation.

RESULTS

A total of sixteen fragments have been marked with a unique catalogue number, cited here as the antler *ID number*. As no textual archive was retrieved, the only contextual information cited here is that recorded on paper labels found in the bags with the fragments, or that written on the bags themselves. The antler fragments excavated in 1969 have associated stratigraphic or contextual data: Summit 2 excavation, layers (3) and

(4); Summit, layer (2); and Summit 3, steps 'B'; Ditch. Locational data for the fragments excavated in 1970 is given in the form of triangulation from grid pegs, and sometimes depths from ground level, and descriptions of the deposit type. These fragments also seem to be from excavations on the summit.

Details of individual fragments are presented in Tables 1 and 2. Osteometric data is presented in Table 3. The following paragraphs summarise the assemblage, divided by year of excavation, and describe the most complete fragments. The assemblage is in moderate condition with frequent ancient and sometimes recent breaks, and erosion of the fragment's cortical surfaces. There is one gnawed fragment and no evidence of burning, although the erosion of the cortical surfaces may have removed traces of scorch marks. Where possible to determine, all the antler is from red deer (*Cervus elaphus*), identified through tine and beam formation and the presence of pearly and guttering.

Antler from excavations in 1969

A total of 53 antler fragments (refitted count), weighing 1.2kg, were recorded from the 1969 excavations. The majority of fragments are from excavations on the summit, however four fragments (IDs 487-8, 490-1) were recovered from contexts in the ditch.

Antler from ditch contexts excavated in 1969

Fragments ID 487, 488, 490 and 490 are labelled 'ditch'. They comprise at least two tines (Table 1). Gardner (1997, 49) reported two antler fragments from ditch layers 906-921, with no further information given. Using an alternative numbering system these fragments are attributed to layer 6 in his earlier analysis (Gardner 1987, 58), which he describes as one of "*a complex series of silts, chalk rubble and flint, simplified into layers 7 to 3, 2C and 2L* [layer 7 being the earliest of this series, above layers 8 and 9, which comprised Neolithic chalk revetting of the mound]. *Being below the Roman layer they were earlier, but could have represented a gradual filling of the ditch from the Neolithic to the Roman periods.*" (Gardner 1987, 43). Whittle (1997, 12, 23) also reports that two antler fragments from near the base of the ditch cutting were submitted for radiocarbon sampling. The fragments recorded here cannot be equated to any of the fragments reported by Whittle (1997) or Gardner (1987 ; 1997).

Antler from summit contexts excavated in 1969

The majority of the 48 fragments from the 1969 summit excavation comprise indeterminate pieces of beam and tine (Table 1), however three large pieces of antler were recovered. The first large piece comprised two refitting fragments, which are from contexts recorded as "starting" (ID 650) and summit 2, layers 3 and 4 (ID 654). The antler is shed, from the right side and at development stage E-F. The burr, brow and bez tines are all present (Figure 1). The beam has been broken immediately below the trez

tine (on its proximal side), probably in antiquity, to form a short handled pick. The brow tine is worn to a rounded end and the bez tine shows slight wear. The brow and bez tines are approximately the same length. The base of the antler is battered on the posterior side and some of the coronet is missing, possibly through use to excavate chalk. If this is indeed a pick, both the brow and bez tines have been retained for use as blades. During the original analysis of this material, fragment 654 was not recognised as refitting with 650. Describing 650, Gardner wrote "*this shed antler had the brow and bez tines removed, as well as the beam above the bez, leaving the small bez as a working point. The back of the burr was much damaged*" (1987, 71-2).



Figure 1 Refitting antler fragments 650 & 654.

The second large piece does not have an ID number, but is recorded as from summit Layer 2. It comprises a similar anatomical region to ID6550/654, extending from the shed burr to just before the bez tine (on the proximal side), and including the base of the brow and bez tines (Figure 2). The coronet is missing, but the antler's eroded cortical surface suggests that the coronet may have been lost either through post-depositional taphonomic damage or modification into a tool and subsequent use. The antler is from the left side and although small, is at development stage E-F. The breaks on the tines are of indeterminate age, although all but one obvious recent break to the brow tine appear ancient. If they are ancient, the specimen may represent a small short handled pick, with the brow tine retained as its blade.



Figure 2 Antler from Summit Layer 2.

The third large piece of antler comprises refitting fragments ID651 and ID660 (Figure 3), which together form a section of beam extending from a tine base (probably the bez; seen on the right in Figure 3) to just before a second tine (probably the distal side of the brow tine, seen on the left in Figure 3). The probable bez appears to have been removed in antiquity, a form of modification consistent with the manufacture of antler picks. Although the side and development stage cannot be confirmed from these fragments, they are possibly from the left hand side and stage E or above.



Figure 3 Refitting antler fragments 651 & 660. Possible stump of bez seen above letter A, possible origin of brow seen above letter B.

Antler from excavations in 1970

A total of six fragments of antler (weighing 0.2kg) are present in the 1970 archive (Table 2); all are marked with an ID number. The assemblage comprised two undamaged tine tips (IDs 786 and 850); a fragment of tine body (ID 780); two beam fragments (IDs 777 and 831), the latter with rodent gnaw marks; and a large fragment (weighing 161g) from a

shed, left hand antler at development stage E-F (ID 778). Antler 778 comprises the burr and parts of the brow and bez tines (Figure 4). The tips of both tines were broken in antiquity and the brow tine may have been worn through use, surviving to a length of 99mm. The posterior portion of the coronet is missing, probably battered through use of the antler. The combination of wear on the brow tine and posterior coronet suggests that this antler was used as a pick.



Figure 4 Antler 778.

DISCUSSION AND CONCLUSION

Without further contextual information, the antler assemblage cannot be firmly attributed to any phase of Silbury Hill's construction or use. However, many of the fragments may represent tools used in the construction of the mound. While the wear on tine tips may represent use-wear or damage caused while still on the head of the deer (Jin and Shipman 2010), evidence of the removal of tines, division of the beam and battering on the posterior coronet are all features one might expect in an assemblage of antler picks. There is evidence for one or more of these features on three shed antlers- ID650/654 (Figure 1), ID778 (Figure 4), and an uncatalogued fragment from Summit Layer 2 (Figure 2).

Gardner's (1987 ; 1997) reports recorded the following red deer remains from excavations on the mound:

“16 bone and teeth fragments showed a minimum of 3 individuals (1 juvenile, 1 adult, 1 old). The bones included teeth, vertebrae and hind limbs, suggestive of whole carcasses. 51 antler fragments were also found. 11 worn tine tips and 2 fragmentary shed burr pieces could be identified. Another piece of shed antler had had the brow and bez tines

removed, as well as the beam above the trez, leaving the small bez as a working point; the back of the burr was much damaged.”(Gardner 1997, 49);

and the following red deer remains from Ditch layers 906-921 (recorded as below the late Roman layer):

“8 bone fragments and 2 antler fragments were recovered.”(Gardner 1997, 49).

Gardner's (1987 ; 1997) reports and this reanalysis differ slightly in the quantification of antler fragments, although this may be due to refitting during this reanalysis and any increased fragmentation of the assemblage during the intervening years of storage. Gardner describes only one tool: fragment 650 without refitting brow tine 654. The presence of red deer postcranial elements in the assemblage might suggest that some antler reached the site on the head of deer carcasses; however, the shed condition of at least three pieces argues against this conclusion. It is likely that the antler reanalysed here represents tools used in the construction or remodelling of Silbury Hill.

Table 1 Antler fragments excavated in 1969

Context	ID number	Number of fragments	Weight (g)	Description
Ditch	487	1	22	Tine, breaks of indeterminate date at both ends
Ditch	488, 490	3	22	Three fragments of beam or tine, ancient and modern breaks
Ditch	491	1 (2)*	19	Tine, breaks of indeterminate date at both ends, two refitting fragments
Steps "B"	612	1	29	Tine body fragment. Ancient breaks at either end
"Starting"	650	1	371	Refits with 654 (brow tine). Shed burr. Battered posteriorly with most of coronet missing, Bez tine survives to near complete length, possible use damage at tip. Bez is very straight. Beam broken immediately proximal to trez, probably in antiquity as rounded although interrupted by recent breaks. Stage E-F. Right side. Probable pick
Summit 2 Layers (3) and (4)	651, 660	2	80	651 (71g) refits with 660 (9g). Fragment of beam, extending from a tine base, probably bez, towards the base of another tine, probably brow. Moderately heavy guttering and some pearling. Base of probable bez tine may have been removed in antiquity or possibly (but less likely) may have been undeveloped and damaged. Beam broken in antiquity distal to probable bez, so if a pick it would either have been very short handled or broken in use. Possibly left hand side. Stage E or above (if bez is correctly identified and was removed).
Summit 2 Layers (3) & (4)	654	1	60	Brow tine, which refits with 650. Tip end broken in antiquity and battered to a blunt and rounded end, possibly through use. When refitted with 650, brow and bez are approximately the same length.
Summit Layer (2)	None	32	121	Indeterminate beam and tine cortex fragments.
Summit Layer (2)	None	1	145	Substantial portion of antler from a small specimen. Includes shed burr, base of brow and bez tines. Beam divided proximal to trez tine. Surface eroded and coronet mostly missing (may be taphonomic damage rather than modification and use). Left side. Stage E-F (but small). All breaks of indeterminate age, but likely to be ancient.
Summit Layer (2)	None	2 (4)*	52	Two sets of two refitting fragments of beam. Ancient and recent breaks.
Summit Layer (2)	None	1 (4)*	57	Large (relatively broad and short) tine with worn end. May be from a crown. Refitted from four fragments, ancient breaks.
Summit Layer (2)	None	5	146	Three complete tines, at least one of which is probably a crown tine. One tine tip and one tine base fragment. All breaks appear ancient. Slight wear on two tine tips.
Summit Layer (2)	None	1	61	Tine, tip broken off, probably in antiquity. Includes some beam with ancient breaks. Two fragments of tine glued back together prior to this analysis.
Summit 3	672	1	31	Tine, may be complete. Two refitted fragments glued together prior to this analysis. Tine tip slightly bevelled. Very slight guttering. Ancient break at base. Shape suggests that it may be a crown tine.

*pre-refitting count in brackets

Table 2 Antler fragments excavated in 1970

Context (as written on bag)	ID number	Number of fragments*	Weight (g)	Description
Top cutting/ Peg 2.0m. 3.5/ Peg 10.0m. 7.50/ Depth 0.7m/ Bone in white chalk rubble HLV	777	1	10	Fragment of cortex of beam with guttering.
6.0m peg. 7.6/ 14.0m peg. 4.7/ Depth from G.L. 0.50m/ Antler in brown chalk rubble	778	1	161	Shed burr. Battered on posterior side (coronet missing in this region); brow tine surviving to approx. 99mm, tip broken off in antiquity; possibly worn from use. Bez origin close to brow tine and surviving to approx 30mm, also broken in antiquity. Beam broken off at indeterminate time in two locations: adjacent to burr and just distal to bez. Some recent damage to brow tine. Stage E-F. Left side.
4m. peg./ N.1.5m/ Offset E. 0.60m/ Depth c.1m./ Bone	780	1	3	Fragment including cortex from tine. Smooth.
Mound top. Animal bone from NW corner of cutting	786	1	10	Complete tine tip with little/no evidence of use on tip.
Top Site/ P[o]g 10/ North 1.0m/ East 4.30m	831	1	15	Fragment of cortex of beam with guttering and area of rodent gnawing.
Peg 2.0m. 5.50/ Peg 10.0m. 4.40/ Depth 1.0m/ Tip of antler tine in brown chalk B...ts	850	1	2	Small smooth antler tine tip, very little/no damage to tip.

Table 3 Osteometric data from antler fragments

Antler ID	Measurement definition	Data (mm)
650	6. Length burr to beam min SD between brow and bez (Clutton-Brock 1984)	67.4
	7. Circumference of bez 2cm from base (Clutton-Brock 1984)	65
	8. Diameter of bez at measurement 7 (Clutton-Brock 1984)	20.8
	5. [Min] Circumference of lower beam (Haltenorth and Trense 1956)	126
	Circumference of beam above brow/bez (Legge 2008)	127
	41. Distal circumference of burr (Von den Driesch 1976)	168
None (from Summit layer 2)	15. Length from ventral brow to posterior bez (Clutton-Brock 1984) (also Ahlén (1965) no. 34)	77
	5. [Min] Circumference of lower beam (Haltenorth and Trense 1956)	87
	Circumference of beam above brow/bez (Legge 2008)	90
	41. Distal circumference of burr (Von den Driesch 1976)	124
778	33. Min ventro-oral burr to upper side of brow tine base (27-29) (Ahlén 1965)	47.2
	3. Length from burr to base of brow tine (Clutton-Brock 1984)	8.9
	4. Circumference of brow tine 3cm from burr (Clutton-Brock 1984)	97
	5. Anterio-posterior diameter of brow tine at same point as measurement 4 (Clutton-Brock 1984)	34.6
	15. Length from ventral brow to posterior bez (Clutton-Brock 1984) (also Ahlén (1965) no. 34)	70.2
	41. Distal circumference of burr (Von den Driesch 1976)	>191*

* posterior region of burr broken so measurement is larger than 191mm

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