

# **Ingleborough Archaeology Group**

The Sandymire Project  
Kingsdale,  
in the Parish of Thornton in Lonsdale  
North Yorkshire.

Grid Ref: SD696 763

A report on timber remains found in Kingsdale Beck

Written by Arthur Batty,

Edited by Anita Batty

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## Acknowledgements

On behalf of the committee of the Ingleborough Archaeology Group I would like to thank various individuals and organisations for their co-operation and help during the three year period of this project.

First of all none of the work would be possible without the permission and co-operation of the Landowner - Mr . R Bell. Not only has he given his permission but has also shown great interest in the research.

Next I would like to thank Mr. Glenn Jenkinson, an IAG member and also a member of Ingleton Angling Association, who first brought the timbers to my attention.

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And last, but not least, my wife Anita Batty for editing, desk top publishing and support.

Arthur Batty

## Report

The Ingleborough Archaeology Group (IAG) is currently carrying out historical and archaeological research in the Valley of Kingsdale, having completed three archaeological excavations between 2005 and 2007 near Kingsdale Head at the NE end of the valley. A full report of these was published in 2007 (Batty & Batty 2007). At the SW end of the Valley is an area known as Sandymire Grid Ref: SD696 763 which, as its name suggests, is an area of marsh land with remnant abraided river channels and large areas of rushes (*juncus*) growing (Plate1). There is no record of any previous archaeological research having been carried out in this area. In the last 30 years drainage has taken place, resulting in the land becoming much drier and more accessible.

In the summer of 2005 timbers were seen protruding from the bank in Kingsdale Beck. (Plate 2) Several large timbers and some smaller branches, context (100), were removed by members of IAG. These were examined by Ian Panter of York Archaeological Trust and ourselves for any evidence of them being the result of human activity. One piece of timber, Small Finds No SFN 7, appeared to be an axe-cut chip, but overall evidence for human activity was inconclusive. Monitoring of riverbank erosion around the site continued and in June 2006 a small 'Y' shaped branch piece, SFN 1, was removed from (100). Two of the ends of this piece of hazel (*corylus avellana*) had clearly been worked with some type of metal axe This suggested that it could have been cut anytime between the Bronze Age (BA)and the present day. A small section was sent for radio carbon dating to Scottish Universities Environmental Research Centre (SUERC1) and was dated to the mid BA 1640BC to 1450BC.

The interpretation of SFN 1 was problematic, as one small piece could have been washed in from another site upstream and lodged in (100), we had already identified a BA structure in Trench 2 on the riverbank during the 2005 excavation at Kingsdale Head (*ibid*). Another possible BA feature, also upstream from Sandymire, is the Apron Full of Stones, excavated by Alan King in 1972 (King, 1978). The remains excavated and the

typology of this feature lead to the conclusion that this was an early BA cairn dating to around 2000BC - 1900BC. However, no radio carbon dating evidence exists from this excavation and therefore this date cannot be substantiated. There are a considerable number of cairn remains and possible round-house type structures in the valley that may also be Bronze Age.

As monitoring of the site continued, a period of dry weather, and therefore low water levels, in April 2007 gave us an opportunity to see the riverbed more clearly. Approximately 3m downstream from the already discovered timbers (100), was a small area of twigs and leaves (101) measuring approximately 600mm in diameter. After consulting with Mr. Robert White (Senior Conservation Archaeologist of Yorkshire Dales National Park Authority), it was agreed to contact a local cave diver Mr. John Cordingley to examine and survey the riverbed. (Plates 3 and 4)

The site was photographed (Plate 5) and leveled (fig 2). The area of twigs and leaves (101) was embedded in the riverbed clay (Plate 6) and appeared to be in situ. Some of the material was removed for analysis, Environmental Sample (ES 1601), and two significant pieces of timber were removed for sampling – one of which showed signs of working at one end SFN4, the other SFN 5 showing significant signs and transverse ridges on its sides. Later examination of ES 1601 revealed another piece of timber, SFN 16, with transverse ridges on the exterior surface and broken at both ends (Plate 7). Four other pieces of worked wood were removed from (100) SFN 2; SFN 3; SFN 7 and SFN 8. These finds from (100) and the discovery of axe cut facets on two of the larger timbers means that SFN 1 is also most likely to be part of (100). All small finds were examined by Mr. Steven Allen, Archaeological Wood Technologist at the Yorkshire Archaeological Trust.

Approximately 2m upstream of (100) part of what appeared to be a vertical post, SFN 6, that was embedded in clay, was also removed. The small finds from (101) and SFN 2 from (100) and SFN 6 from (102) were initially identified as having been chewed by

beaver, although the latter two were more difficult to interpret, and the decision was taken to send a small piece of SFN 4, that was more obviously beaver chewed, for radio carbon dating. This gave a date of 5730BC-5670BC (Beta Analytic RC Lab).

In June 2007 a 2m x 0.5m trench was excavated parallel to the riverbank, down through the area of collapsed bank on top of (100). Excavation went below the level of (100) and cores were taken in the base of the trench extending down another 1m. No evidence for large timbers was found, with only a few branch remains in the trench at the level of (100). This showed no evidence for larger timber remains extending into the riverbank.

## CONCLUSIONS

From the archaeological research already carried out in Kingsdale by the IAG it is becoming obvious that there was considerable human presence in the Bronze Age period, and this report adds to that evidence. Several years ago a BA axe head was found by a metal detectorist within 400m on the limestone terrace overlooking the site. It is an intriguing speculation that this could have been the axe that cut the timber samples in (100). However, even though that axe could probably be located, the samples are too degraded to be able to match it to the cut marks.

The beaver chewed wood and its date prove the presence of beaver, and also suggest the habitat was suitable for its survival, although it cannot be ascertained what time span this covered. The chewed samples of wood were willow and, as willow bark is one of the beaver's staple foods, there must have been a reasonable supply nearby. The diameter of the deposit (101) at (0.60m) is very similar to the size of the tunnels dug by beaver (Coles, 2007) We do not know how deep it is, or in what direction this feature goes, as it is underwater. Examination of a small quantity of ES 1601 showed the presence of leaves and twigs of hazel (*corylus avellana* L) and willow (*salix* spp). Hazel does not grow on marshy ground but was obviously within the beaver's range on

drier slopes. The presence of leaves indicates that the deposition was before winter set in and may represent food stored underwater for winter-feeding when the marsh or lake was frozen over. There is no evidence of a beaver lodge, but further erosion may reveal evidence to confirm or reject this proposition.

The considerable difference in the age of (100) and (101) at approximately 4,200 years leads to a reassessment of the two ambiguous finds SFN 2 and SFN 6. As all other small finds from (100) were axe-cut, it was decided that SFN 2 from (100) was also axe-cut and unlikely to be beaver-chewed. This left SFN 6 that appeared to be the base of a broken post driven down into the clay which by definition has to be axe-cut.

There is always an interpretational problem when wood worked by man and animals is in close proximity, as pieces cut by man may subsequently be used by animals and vice versa. However, in this case there is a clear difference in time between the two events, and also a considerable difference in the depth of deposition - approximately 0.57m. We do not know when the beaver became extinct in Kingsdale. This could have been soon after the date we have or much later as there is extensive evidence for human activity in the Bronze Age, and consequently there would have been changes to the flora and fauna of the valley, brought about by timber felling, hunting and increasing agricultural activity that would have destroyed the beaver and its habitat. The area suitable for habitation by beaver is small and it is unlikely that, once extinct at whatever period this was, they would ever return to Kingsdale. This scenario would rule out a dual use interpretation for any timbers in (100).

The small finds from (101) were all identified as beaver-chewed and any probability of a dual- use interpretation is unlikely. Even so we have evidence for Mesolithic occupation at Kingsdale Head (dating to 6850 BC - 6640 BC) raising the possibility that Mesolithic people may have been around at the same time as the beaver, and could have been cutting timbers with stone tools, increasing the potential of finding dual-use timber remains.

Context (100) consists of considerable amounts of branch material and large timbers up to 0.20m in diameter and 3m long. How much of this feature had been washed away by the river before it was found is unknown, and any interpretation has to be based on the features recorded. The largest timbers (two of which have axe-cut facets) were packed together lying at a slight angle to the flow of water. At right angles, on top of these timbers (Plate 8) were several smaller pieces indicative of a constructed platform or trackway. There is a clay bank underlying the timbers and extending across the river. Up and down stream of the bank the riverbed is lower, creating a deeper pool on either side. It is difficult to determine whether this bank is natural, or a deliberate construction for supporting a trackway or even a remnant of a beaver dam relating to (101). There do not appear to be any timbers embedded in it at present. If (100) is a trackway it may have been displaced downstream by water flow - this could be the reason for not finding evidence of a continuation of the timbers into the riverbank at this point. Any continuation of a trackway may be upstream and this leads us to SFN 6 (thought to be a post) that may have been securing the timbers in a position 2m further upstream and some small branch pieces are protruding from the riverbank at this point. Continuing erosion may reveal whether there are more substantial timbers that could relate to (100). There is no conclusive answer as to whether (100) is a trackway, platform or structure of unknown use. From the evidence above a trackway is probably the best interpretation at this stage of the investigation. Nearly all of the timber has now been washed away by the river. We were fortunate to have been able to record the above as knowledge of this type of archaeological remains is scarce.

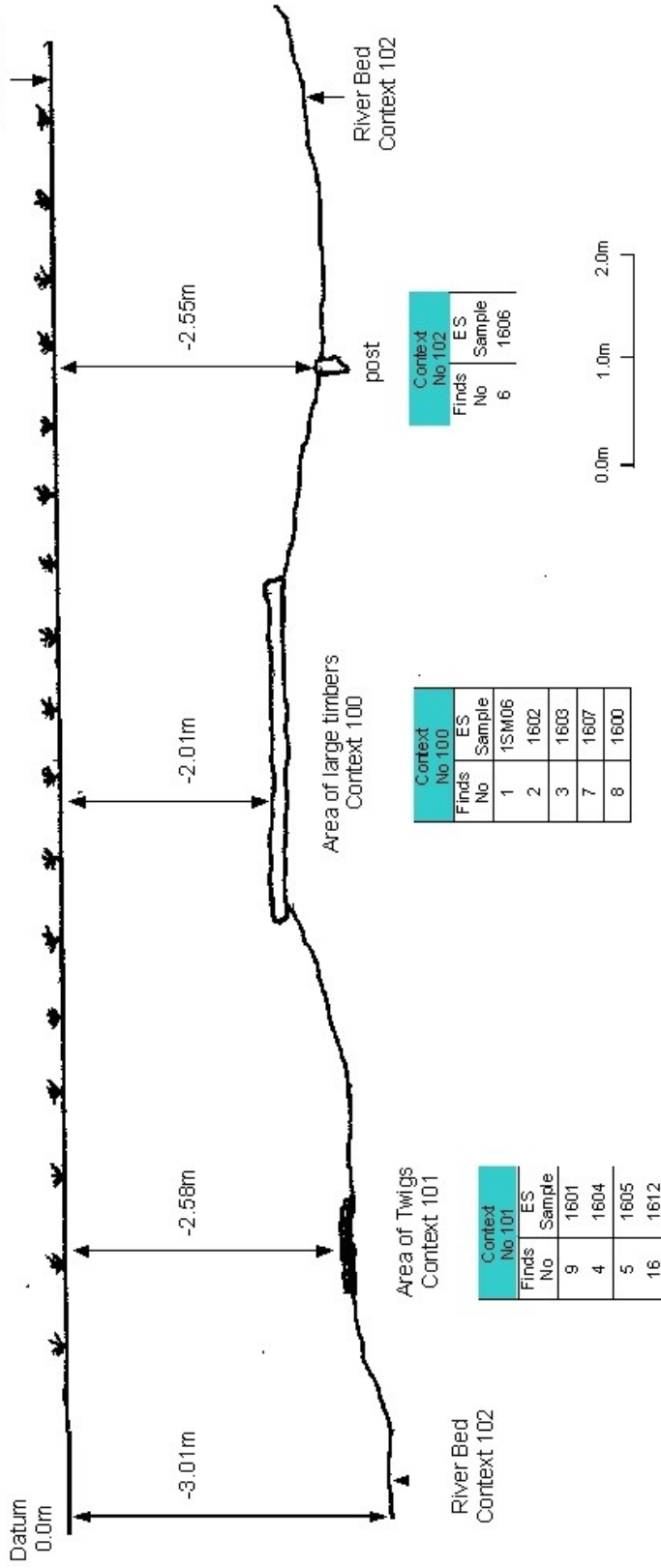
# SECTION DIAGRAM SHOWING SURVEY LEVELS OF FEATURES IN KINGSDALE BECK

Project Code: SM06  
Site Code: 1SM07

SANDYMIRE in the Valley of Kingsdale, North Yorkshire

Grid Ref SD 696 763

Ground level  
Context 000



Flowdirection

Fig 2





Plate 1: Aerial photograph of Sandymire with yellow cross marking location of the site  
*Photo: Get Mapping*



Plate 2: Timbers as first observed in Kingsdale Beck  
*Photo: Arthur Batty*





Plates 3 and 4: Diver John Cordingley searching the riverbed and taking levels at the site

*Photos; Arthur Batty*



Plate 5: Sandymire – showing area of collapsed bank

*Photo: Arthur Batty*





Plate 6: Sandymire – area of twigs Context (101)

*Photo: Arthur Batty*



Plate 7: An example of beaver-chewed wood from Sandymire (SFN 16) *Photo: Arthur Batty*



Plate 8: Showing small timbers set at right-angles to larger timbers (100)

*Photo: Arthur Batty*

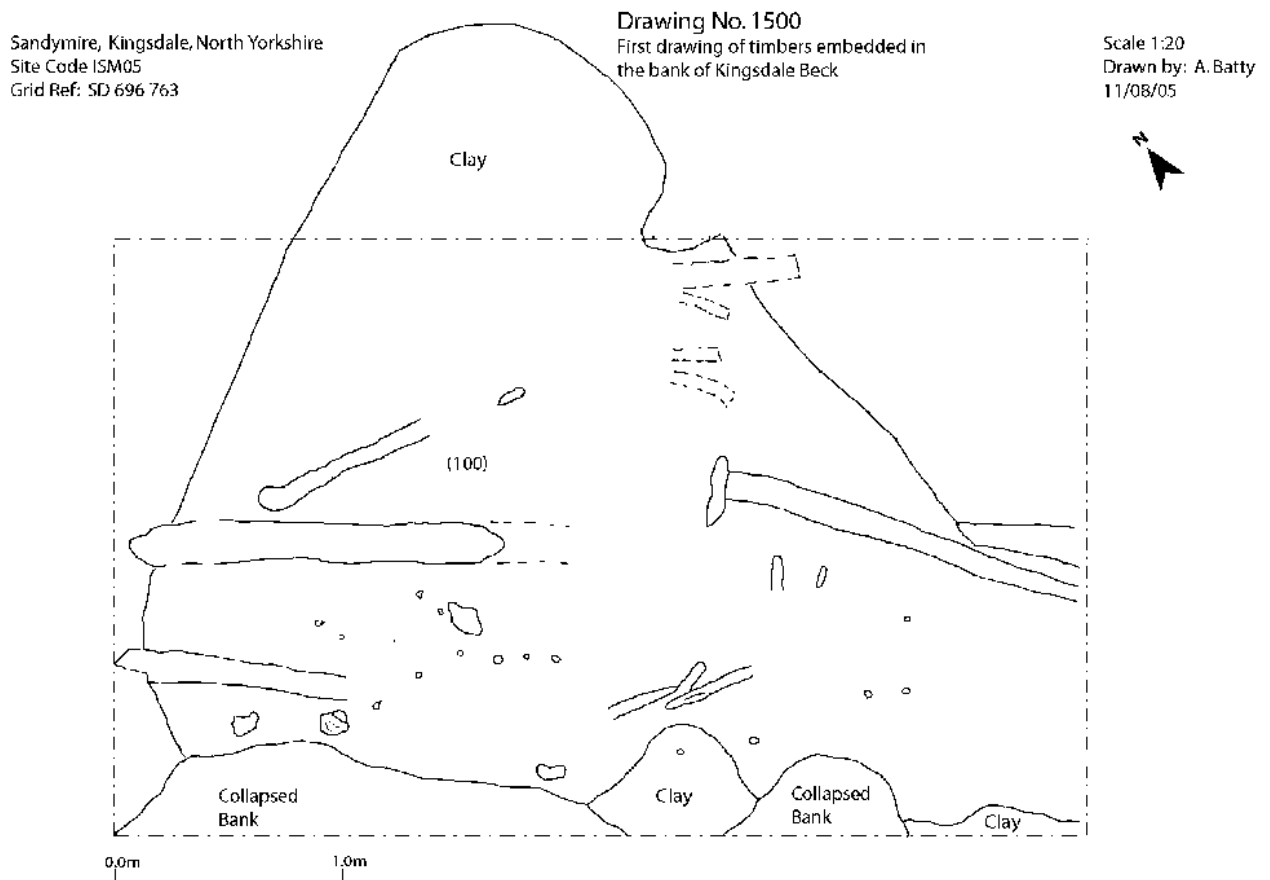


Fig.3: Drawing No. 1500 First drawing of timbers embedded in the bank of Kingsdale Beck

*Drawn by Arthur Batty*

Sandymire, Kingsdale, North Yorkshire  
Site Code ISM05  
Grid Ref: SD 696 763

Fig 4:  
**Drawing No. 1501**  
First drawing of timbers embedded in  
the bank of Kingsdale Beck

Scale 1:20  
Drawn by: A. Batty  
09/08/07

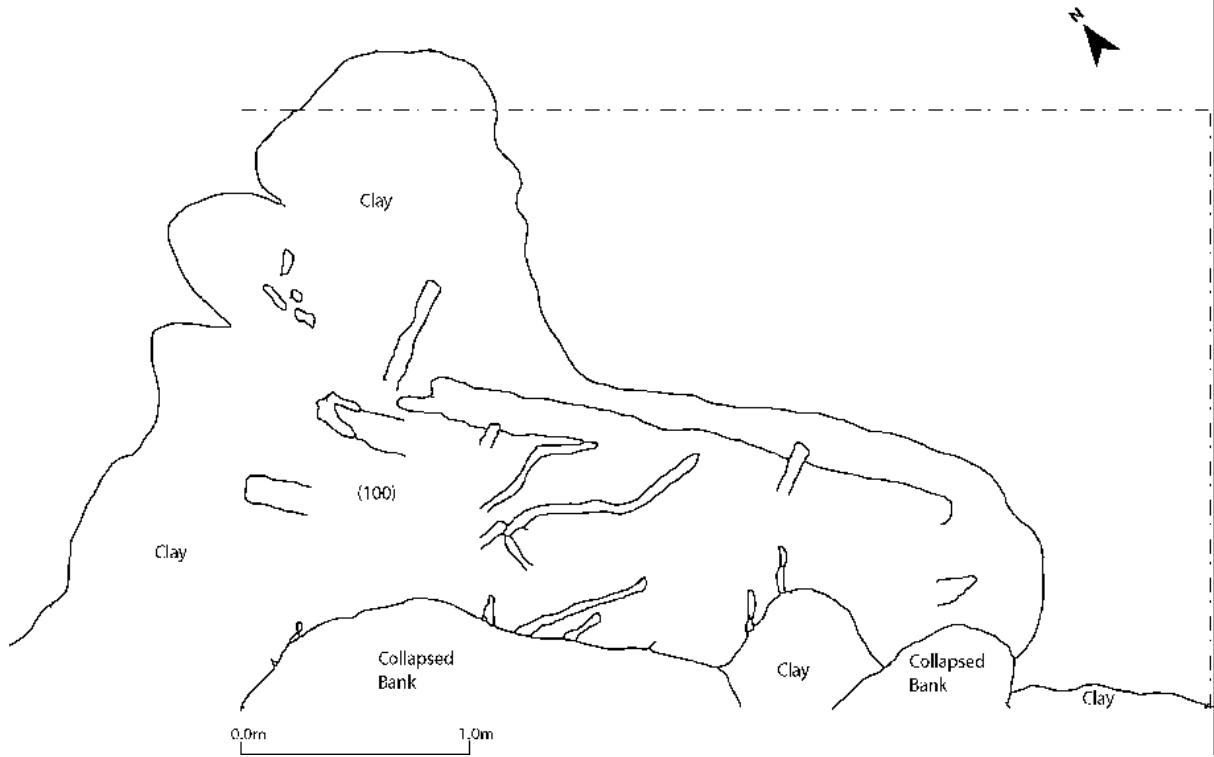
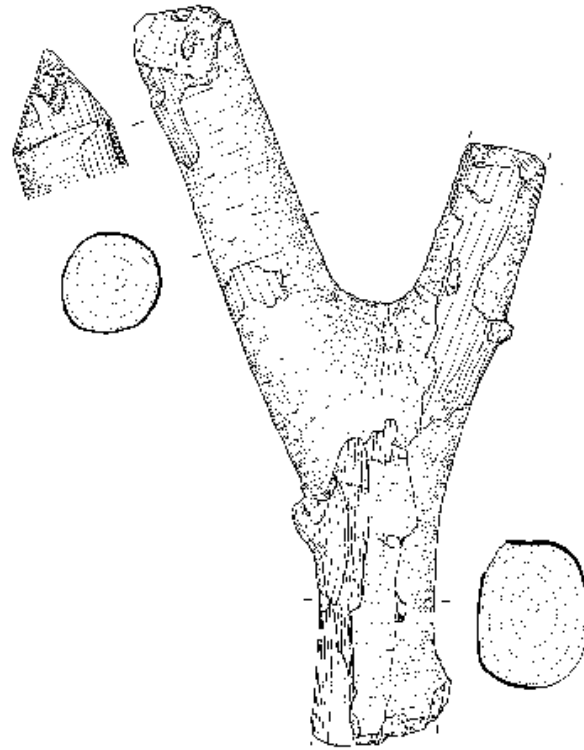


Fig4: Drawing No. 1501 First drawing of timbers embedded in the bank of Kingsdale Beck

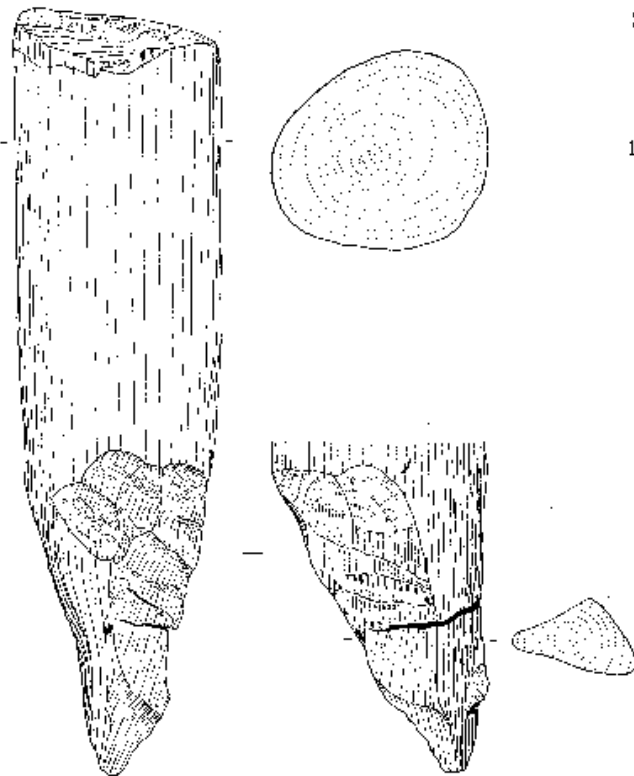
*Drawn by Arthur Batty*

TIMBER DRAWINGS



SFN 1  
(100)  
1:2

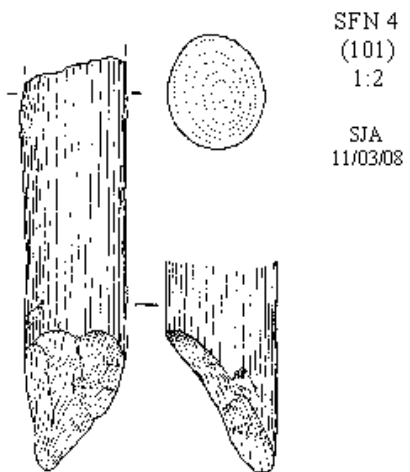
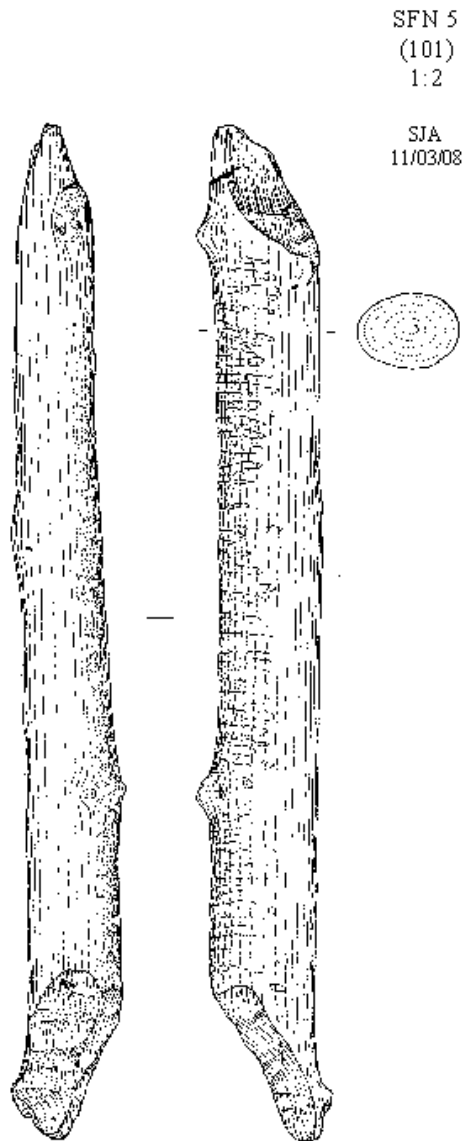
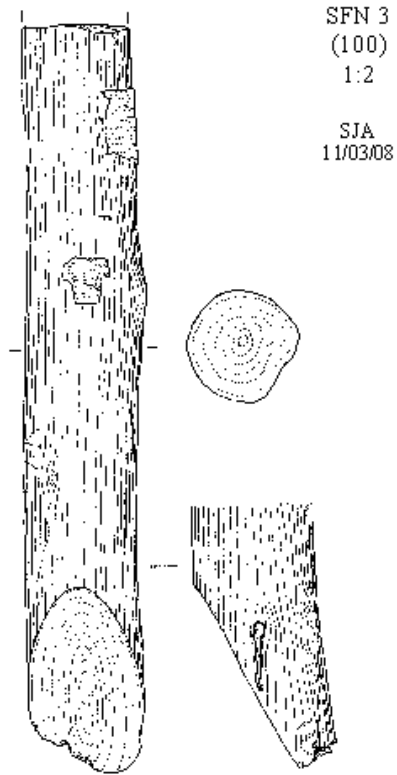
SJA  
10/03/08



SFN 2  
(100)  
1:2

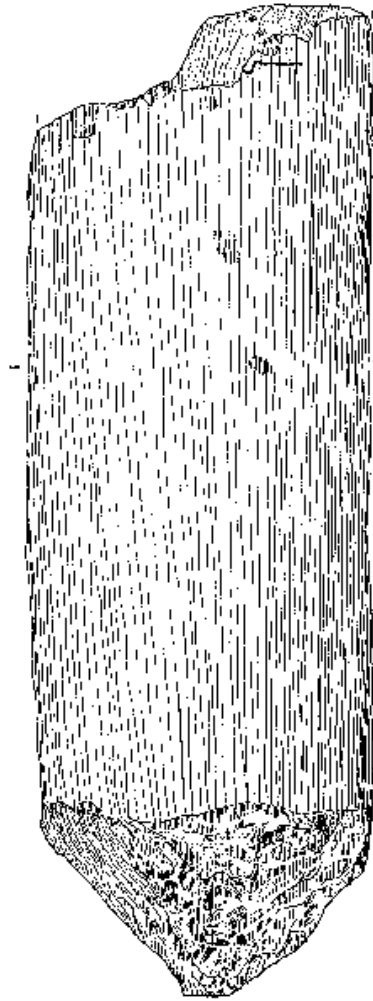
SJA  
10/03/08

# TIMBER DRAWINGS



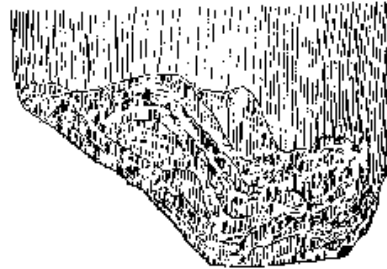
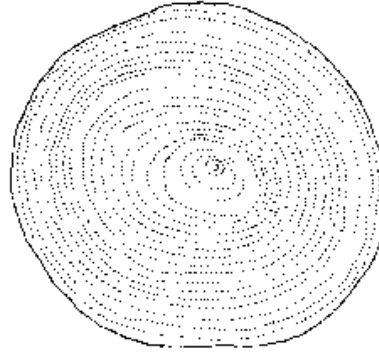


TIMBER DRAWINGS



SFN 6  
(102)  
1:2

SJA  
11/03/08



SFN 7  
(100)  
1:2

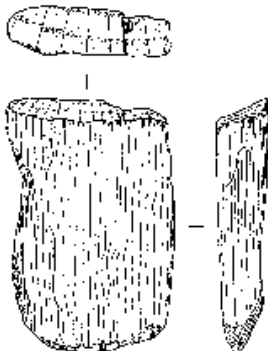
SJA  
11/03/08

SFN 8  
(100)  
1:2

SJA  
11/03/08

SFN 16  
(101)  
1:2

SJA  
12/03/08





## Bibliography

Batty, A and Batty A., (2007) The Kingsdale Head Project. Ingleborough Archaeology Group

Coles, B., (2007) Beavers in Britain. Oxbow Books - The Wetlands Archaeological Research Project.

King, A., (1978) Apron Full of Stones, a Prehistoric Cairn, Thornton in Lonsdale, North Yorkshire. The Yorkshire Archaeological Journal, Vol. 50 (1978) pp 25 -30

## Timber Drawings

Allen, S.J; (2008) Drawings of wood finds from Sandymire, Kingsdale

## Radio Carbon Dating References

Scottish Universities Environmental Research Centre (SUERC1 ) Ref: 11495 (GU-14448).

Beta Analytic Radiocarbon Dating Laboratory 2, Miami, Florida . Lab Ref: Beta-233907.



YORK ARCHAEOLOGICAL TRUST

CONSERVATION LABORATORIES

**Kingsdale Beck, Sandymire,  
Kingsdale,  
North Yorkshire  
(ISM 06)**

Assessment of waterlogged wood for

Ingleborough Archaeology Group

by

Steven J Allen

23<sup>rd</sup> May 2007

*Amended 17/08/2007 following arrival of additional sample 1612*

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Registered Charity No: 509060

## 5. LISTING

Species identification follows Schweingruber (1982). Objects are listed in numerical sample order.

Context	SF No.	Sample No.	Description	Species identification	Recommendation
100	08	1600	Section of roundwood, no bark present. Main shoot turns a 45 degree angle with a small side shoot at the junction truncated and partly absorbed by regrowth. One end broken and missing, other end eroded. 167 l, 32 dia.	<i>Corylus avellana</i> L.	Retain and Conserve
101	09	1601	Bag containing loose twig material and organic matter. One fragment extracted for sampling- section of roundwood, bark present, both ends broken, some compression damage. 65 l, 21 dia.	<i>Corylus avellana</i> L.	Retain and Conserve
100	02	1602	Section of roundwood, no bark present. One end broken away and missing, other end with dished ridged facets characteristic of beaver chewed wood. 231 l, 66 dia.	<i>Salix</i> spp.	Retain and Conserve
100	03	1603	Section of roundwood, partial bark present. One end broken and missing, other end has single hewn facet cut to create chisel tip. 204 l, 30 dia.	<i>Corylus avellana</i> L.	Retain and Conserve
101	04	1604	Section of roundwood, no bark present. One end broken away and missing, other end has tip with dished ridged facets characteristic of beaver gnawed wood. 170 l, 32 dia.	<i>Salix</i> spp.	Retain and Conserve
101	05	1605	Section of roundwood, no bark present. Both ends have crude tips with dished ridged facets characteristic of beaver gnawed wood. Exterior surface of roundwood has transverse ridges indication bark removal by beavers. 282 l, 30 dia.	Probably <i>Salix</i> spp.	Retain and Conserve
102	06	1606	Section of roundwood, no bark present. One end broken away and missing, other end with crude tip possibly created by beaver gnawing. All surfaces abraded. 299 l, 114 dia.	<i>Salix</i> spp.	Retain and Conserve
100	07	1607	Tangentially faced heartwood chipping. Both ends bevelled in same direction by hewn facet. All surfaces abraded.	<i>Alnus</i> spp.	Retain and Conserve
100	01	No sample no.	Section of forked roundwood, partial bark present. Shaft and end of one tine broken away* and missing. Remaining tine has two opposed hewn facets cut to create bifaced tip. 228 l, 44 dia.	<i>Corylus avellana</i> L.	Retain and Conserve
101	16	1612	Section of roundwood, no bark present. Both ends broken away and missing. Exterior surface of roundwood has transverse ridges	<i>Salix</i> spp.	Retain and Conserve

			indication bark removal by beavers. 147 l, 22 dia.		
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\* Subsequently known to have been caused by removal of sample for <sup>14</sup>C dating



Botanical name	Common Name
<i>Alnus spp.</i>	Alders, exact species not distinguishable
<i>Corylus avellana L.</i>	Hazel.
<i>Salix spp.</i>	Willow, exact species not distinguishable

## 6. DISCUSSION

This small assemblage of wood has significance out of all proportion to its size.

Some of the wood is unquestionably worked by humans. SF1, SF3 and SF7 have ends which have been cut with metal tools which would, given the <sup>14</sup>C date from SF1, (3280±35 BP- SUERC 11495 GU 14448) have been cast from bronze. However the facets are slightly abraded and the tool signatures are lost. Though probably cut with axes, the evidence cannot absolutely confirm this. The surface abrasion suffered by SF8 has eliminated any evidence for working which may or may not have been present. The nature of SF9 also means its origin is not certainly known. Of the wood species present (*Corylus avellana L.* roundwood and *Alnus spp.* chipping) it is possible the Alder was taken from a tree growing near to the findspot, but hazel tends to grow in much drier conditions. The pieces of hazel are likely therefore to have been brought to the site from elsewhere.

SFs 2, 4, 5, 6 and 12 are cut from *Salix spp.* wood. Willows are associated with damp or wet ground and might well have been taken from trees growing near to, if not actually part of, the findspot. All five are quite definitely worked, but this working is not the result of human agency. The dished marks with parallel ridges across them are the result of gnawing by Beaver (*Castor fiber*). The marks are directly comparable with those on beaver chewed wood held in the reference collection of the conservation Laboratory in York- from Dorney Rowing Lake, Oxfordshire (archaeological) and Ontario, Canada (modern).

The European beaver was native to the British Isles following the end of the last Ice Age but had been hunted to extinction here by the thirteenth century. Archaeologically, beaver chewed wood has been identified from Mesolithic to Bronze Age sites at Starr Carr (Yorkshire), the Somerset Levels, Dorney Rowing Lake (Oxfordshire), Caldicot (South Wales) and possibly Skipsea (Yorkshire) (Spriggs 1998, 93). At these sites it tends to be associated with man made structures.

A few precedents exist for beaver chewed wood and associated human activity. It is uncertain whether the beaver wood has always arrived through natural agency or whether the beaver wood has been collected by humans for their own use. It is not beyond the bounds of possibility that small pieces of wood worked by humans may have been appropriated by beavers, but at the time of writing, this author is not aware of any research which may have been done into this.

Further research will be needed above and beyond what can be put into an assessment report. Provisionally though this may be the first such wood identified from a Bronze Age context in the Yorkshire Dales. Despite the impression given by the list of findspots above, finds of beaver chewed wood are very rare in this country. These finds from Sandymire are extremely important. They add another findspot to the slowly growing picture of human/beaver activity. They have the potential to tell us much about the Bronze Age environment of this part of the dale, about land use and woodland exploitation by human and animal occupants. It is hoped that further excavation at the

site will take place to clarify the nature and extent of the find and that the relationship between the human and the beaver wood may be defined and understood.

#### 8. REFERENCE

English Heritage (1991) Management of Archaeological Projects 2 London

Schweingruber, FW (1982) Microscopic Wood Anatomy Zurich

Spriggs, JA (1998) 'The British Beaver- Fur, Fact and Fantasy' in Cameron, E (ed) Leather and Fur. Aspects of Early Medieval Trade and Technology London 91-101

York Archaeological Trust Conservation Laboratory Report Number 2007/27