



JOHN MOORE HERITAGE SERVICES

AN ARCHAEOLOGICAL EVALUATION

AT

JOHN COOMBES HOUSE, 28 ST THOMAS STREET,

OXFORD OX1 1JL

NGR SP506061

*On behalf of
Montgomery Architects*

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Summary

John Moore Heritage Services carried out an archaeological evaluation at John Coombes House, 28 St Thomas Street, Oxford (NGR). This formed part of the application for the demolition of part of Combe House and Galilee rooms, erection of single storey extensions to north, south and west elevations and formation of dormer windows. The investigation involved the hand excavation of four trial pits to establish the wall depth of John Coombes House, the presence or absence of burials and/or archaeological remains within the site and the depth of soil deposits that overlie these remains. The investigation yielded a relatively deep soil sequence which comprised Post Medieval to Modern made ground deposits all containing domestic material. Disused 19th century drainage systems were also recorded and no evidence of former burial activity was present on site.

1 INTRODUCTION

1.1 Site Location (Figure 1)

The site is located at Combe House adjacent to the churchyard of St Thomas the Martyr at the west end of St Thomas Street, Oxford. The site lies on the Thames floodplain overlaid in part by alluvium

1.2 Planning Background

A planning application has been made to Oxford City Council for the demolition of part of Combe House and Galilee rooms, erection of single storey extensions to north, south and west elevations and formation of dormer windows. Due to the archaeological and historical importance of the surrounding area an archaeological evaluation was requested by the City Archaeological Officer.

1.3 Archaeological Background

By the end of the 12th century the parish church of St. Thomas had been established, and its building spelt the birth of the suburb of St. Thomas. Whether the site of the church was a slightly raised piece of land was unknown. Excavation has found that the west end of St Thomas Street was raised in the mid 13th century immediately prior to the erection of houses. A lane (later known as Church Street) run southwards between the churchyard and the residential area. This route led to Osney Lane.

A Statement of Significance and Heritage Impact Assessment for the site has been compiled by Asset Heritage Consulting (2016). This provided a history of Combe House which was built by John Coombe in 1702 as a charity school. From map evidence the site of Combe House formerly was within the original churchyard. The land of Combe House is not consecrated.

2 AIMS OF THE INVESTIGATION

The aims of the investigation as laid out in the Written Scheme of Investigation were as follows:

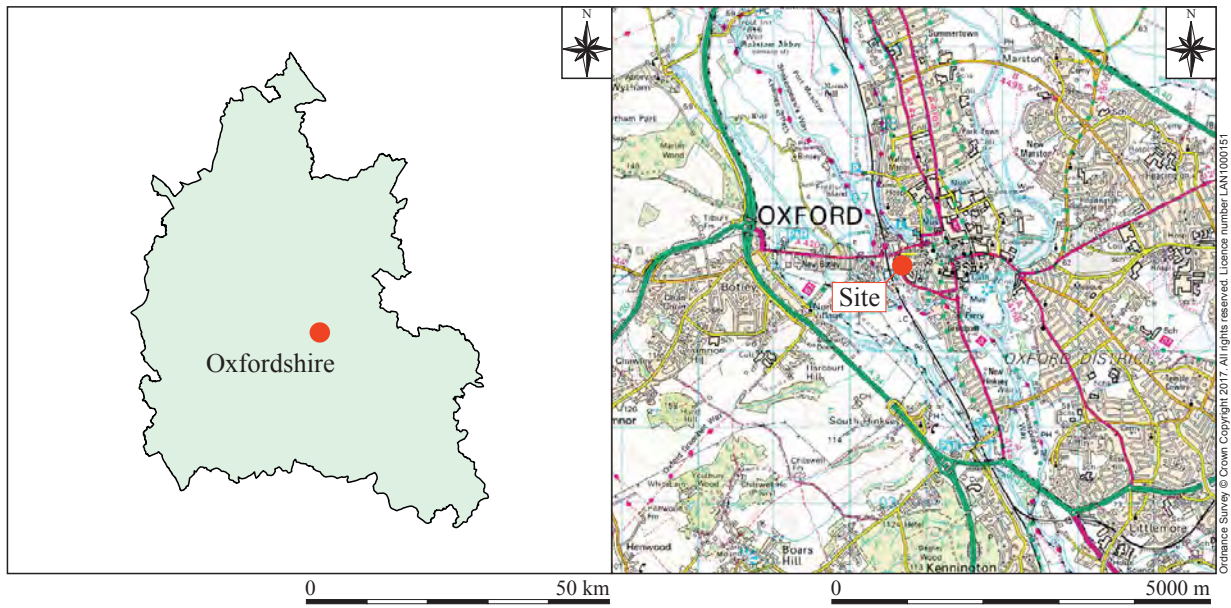


Figure 1: Site location

- To undertake an archaeological evaluation of the site to establish the presence or absence of burials and/or archaeological remains within the site and the depth of soil deposits that overlie these remains.
- To determine the extent, condition, nature, character, quality and date of any archaeological remains encountered.
- To determine the degree of complexity of any horizontal and/or vertical stratigraphy present.
- To determine the impact of the proposed development on any remains present.
- To inform the need for, and scope of, further phases of work to mitigate the impact of the development under consideration.

3 STRATEGY

3.1 Research Design

John Moore Heritage Services carried out the work to a Written Scheme of Investigation agreed with David Radford the Oxford City Council Archaeological Officer.

The recording was carried out in accordance with the standards specified by the Chartered Institute for Archaeologists (2014).

3.2 Methodology

Four evaluation pits were excavated by hand across the site of Combe House and Galilee rooms. In pits 1 and 3 all deposits were taken down to the uppermost archaeological horizon or geological horizon. Test pit 4 was excavated against the western face of the wall of John Coombes House at the northern end of the site in order to determine a wall depth and shed light on the excavation limitations and constraints for test pit 3. Similarly test pit 2 was extended against the western side of John Coombes House in order to determine its own excavation limitations.

Standard John Moore Heritage Services techniques were employed throughout, involving the completion of a written record for each deposit encountered, with scale plans and section drawings compiled where appropriate. A photographic record was also produced.

The resultant spoil from the works was visually scanned, especially for finds relating to the adjacent churchyard burial ground of St Thomas the Martyr.

4 RESULTS (Figure 2)

All deposits and features were assigned individual context numbers. Context numbers without brackets indicate features i.e. pit cuts, numbers in () show feature fills or deposits of material, while numbers in bold indicate structural features.

4.1 Trial Pit 1

Trial pit 1 was oriented north - south and measured 1.6m long, 1.5m wide and 0.82m deep. It was excavated in two stages to determine the extent of activity and recorded in plan with each stage. It contained half of 19th century brick lined soakaway shaft 01/12 in its southern edge. This measured 1.20m across its E - W axis and 0.62m was exposed from the southern edge of the pit. This was capped by a concrete slab and had three ceramic drains running into its western side. A lead water pipe and brick lined drain was also present running NW – SE dated to the 19th century. All of these were cut into made ground (01/13) of yellowish mid-brown sandy silt and overlain by a sequence of seven further made ground deposits consisting of loose silt (1/06, 1/05) concrete (1/04), charcoal (1/02) and brick rubble (1/023). These



Plate 1: Plan view of trial pit 1.



Plate 2: Internal view of soakaway shaft.

contained animal bone, 19th century pottery, a small brush similar in size to a suede brush and were sealed by a concrete surface (1/01).



Plate 3: North view of trial pit 1 representative section in second stage of excavation.

4.2 Trial Pit 2

Trial pit 2 was oriented east - west and measured 2 metres long, 1.5m wide and 0.65m deep. It contained 0.42m made ground deposits consisting generally of a mid-brown sandy silt (2/02, 2/03). These contained post-medieval pottery and clay pipe and were overlain by a dark brown silty garden soil (2/01). Two linear brick foundations and a water pipe were cut into the made ground surface which were of a 19th century date. The extension of this pit against Coombes House indicated a wall depth of >1.0m. It could therefore not be excavated beyond the 19th century level due to structural constraints respecting the '45° rule'.



Fig 4: East facing view of wall of John Coombes House.

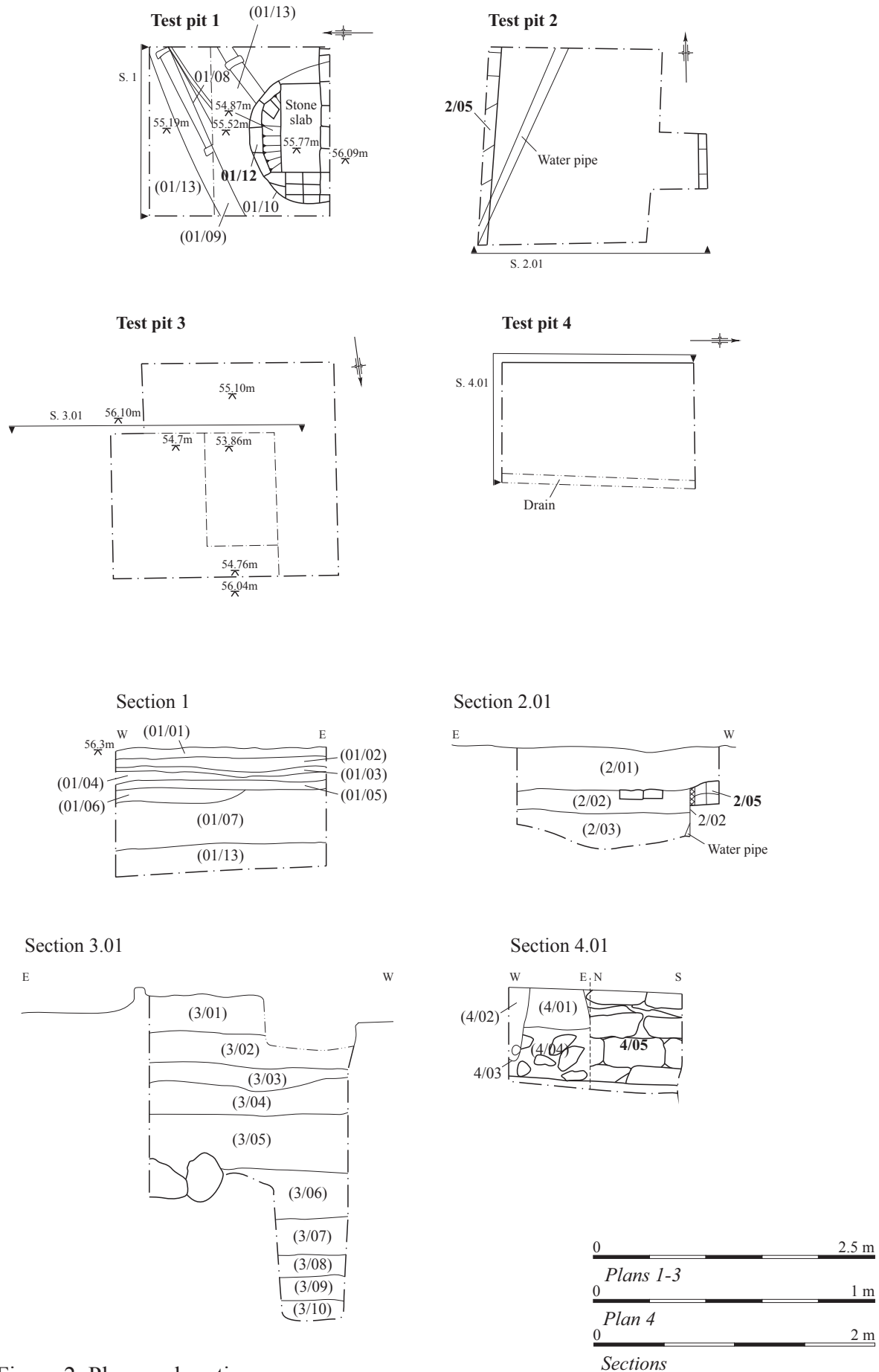


Figure 2: Plans and sections

4.3 Trial Pit 4

Test pit 4 was oriented north - south and measured 700mm long, 400mm wide and 0.70m deep. It confirmed a wall depth of John Coombes House (4/05) of 0.65m in this location. The cut of this wall was also filled with a silty limestone rubble as packing material for cavity filling (4/04). This was in turn cut by a water pipe (4/02) and overlain by a garden soil (4/01). The depth of the wall in this area indicated that Trial Pit 3 proposed the least risk in evaluating the area for the proposed aims of this project.



Fig 5: North facing view of trial pit 4.

4.4 Trial Pit 3

Trial Pit 3 was oriented east – west, 2m long, 1.9m wide and 2.30m deep. It contained 0.15m of a natural clay alluvium (3/10) overlain by 0.34m of two post-medieval made ground deposits (3/09, 3/08) containing occasional pottery 13 sherds of Brill/Boarsall Ware in the upper deposit along with a sherd of Lead Glazed Border Ware. The date of Brill/Boarstall Ware is 1200 to 1600AD while the Lead Glazed Border Ware is dated 1550-1700AD. If the latter is intrusive, which is a probability, a mediaval date can be attributed to these two deposits. These was overlaid by a 17th century deposit of clay rich sand with frequent limestone (3/07). This in turn was overlain by 1.6m of modern silty made ground deposits (3/06-3/02). These deposits were prevalent in clay tobacco pipe, tile, post-medieval pottery sherds and significant butchered bone indicative of domestic activity. (3/06) is likely to be of 18th century date and relate to the early use of Combe House. The complete clay tobacco bowl again points to early 18th century activity associated with deposit (3/05). The upper most portion of these made ground deposits (3/02) contained bone china fragments. Deposit (3/02) was in turn overlain by a silty garden soil (3/01). The trial pit was devoid of any archaeological features.

4.5 Reliability of Results

The reliability of the results is considered to be very good. The archaeological investigations took place in generally clement conditions with good light and

visibility. On the whole, there was good cooperation from the vicar of St Thomas Church, Jonathan Beswick and architect, Simon Jones. The archaeological investigation was monitored by David Radford on behalf of Oxford City Council.



Plate 6: South facing view of trial pit 3 and representative section 3.01.

5 FINDS

5.1 Pottery by Stephanie Duensing and Simona Denis

An assemblage of medieval and post-medieval pottery, of a total weight of 2719g, was found during the excavation of four Test Pits at John Coombes House, Oxford.

A single, intrusive prehistoric pottery sherd was recovered from deposit (1/07); a moderate quantity (22 sherds, of a combined weight of 399g.) of flower pot fragments was also collected from six` different contexts. The sherds were in good condition and appear to have been the subject of very little disturbance or transportation.

The collection, comprising 164 fragments, was recorded using the conventions of the Oxfordshire County type-series (Mellor 1984; 1994), as follows:

OXAM:	Brill/Boarstall Ware , AD1200-1600. 18 sherds, 464g.
OXFH:	Lead Glazed Border Ware , AD1550-1700. 22 sherds, 618g.
OXDR:	Red Earthenwares , AD1550+. 2 sherd, 114g.
EST:	English Stoneware , AD1600-1930. 12 sherds, 376g.
OXCE:	Tin-glazed Earthenware , AD1613-1800. 3 sherds, 10g.
STAFFS:	Staffordshire Slipware , AD1700-1870. 5 sherds, 76g.
BONE:	Bone China , AD1800-1850. 3 sherds, 24g.
WHEW:	Mass-produced White Earthenwares , 19 th -20 th century. 76 sherds, 622g.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1. Each date should be regarded as a *terminus post quem*.

Context	IA		OXAM		OXFH		OXDR		EST		OXCE	
	No. of sherds	Weight (g)	No. of sherds	Weight (g)	No. of sherds	Weight (g)	No. of sherds	Weight (g)	No. of sherds	Weight (g)	No. of sherds	Weight (g)
1/07	1	16	2	15	4	29			5	170		
1/13					10	166			2	76		
2/01											1	4
2/02			1	11	2	15						
3/01												
3/04												
3/06					2	382			2	104		
3/07			1	171	2	5	2	114				
3/08			13	252	1	21			1	24		
4/01									1	2		
4/02											1	1
4/04			1	15							1	5

Context	STAFFS		BONE		WHEW		Flower Pot		Date
	No. of sherds	Weight (g)	No. of sherds	Weight (g)	No. of sherds	Weight (g)	No. of sherds	Weight (g)	
1/07					21	207			Post-medieval
2/01	1	7	3	24	26	245	1	52	MOD
2/02					1	2	12	133	MOD
3/01	1	5							MOD
3/04					23	149	3	37	19 th C
3/06	2	50					4	108	18 th C
3/07									17 th C.
3/08									13 th C.
4/01							1	14	MOD
4/02	1	14			3	9	1	55	MOD
4/04					2	10			MOD

Table 1: Pottery occurrence by number and weight of sherds per context by fabric type

5.2 Clay Tobacco Pipe by Simona Denis

A collection of 78 clay tobacco pipe fragments, of a combined weight of 277.9g, was recovered from nine individual contexts. The material, although extremely fragmentary, is in a good state of preservation.

A single, near complete bowl was found in layer (3/05), while deposit (1/07) preserved one mouthpiece; a partial, decorated bowl and three stem fragments including base and part of the bowl were also present. However, the vast majority (68 examples, or 87%) of the group was composed of plain, undiagnostic and unmarked stem fragments, a regular occurrence in clay tobacco pipe assemblages.

Test Pit 1 was the richest in clay tobacco pipe fragments, with 44 items, or 56.4% of the assemblage; 19 fragments, constituting 24.3% of the material, were recovered from Test Pit 3. Test Pit 2 yielded 11 (14.1%) of the items, while Test Pit 4 contained only 4 examples (5.1% of the collection).

Context	Type	No. of Items	Weight (g)	Comments	Date Range
1/07	Stem	13	44.2		Undetermined
	Stem with base	1	8	Flat heel	1680-1710
	Bowl with base and stem	1	8.9	Flat heel	?1700-1740
	Mouthpiece	1	2.9		Undetermined
1/13	Stem	26	75.5		
	Bowl with base and stem	2	9.1	Forward spur	?1731-1748
2/01	Stem	10	22.9		Undetermined
2/02	Stem	1	1		
3/02	Stem	6	13.3		
3/03	Stem	9	44.3		
	Stem with spur	1	4.5	Maker's mark, initials	?1850
	Stem with partial spur	1	4	Spur, incomplete	Undetermined
	Stem with partial base	1	5.9	Flat heel, incomplete	
3/05	Bowl with base and stem	1	16.6	Maker's mark, symbol	?17 th – E18 th C
4/02	Stem	1	2.9		Undetermined
	Bowl	1	2.8	Decoration, botanical	1800+
4/04	Stem	2	11.1		Undetermined

Table 2: Clay Tobacco pipe occurrence by context and type

- Bowls

The near complete bowl, including base and partial stem, recovered from deposit (3/05) showed an unusual combination of a flat, hart-shaped heel usually associated with earlier types (similar to Grooves 1984 type 11/12), with a highly polished, thin-walled bowl with relatively straight bowl sides and rim parallel to the stem (similar to Grooves 1984 type 23). The object preserved the Maker's mark on the base of the heel representing the profile of a raptor type bird, possibly based on a coat of arms, virtually identical to an example found at Haddenham, Buckinghamshire (Yeates 2015; 15), tentatively dated to the 18th century.

A botanical decoration pattern was observed on the partial bowl found in deposit (4/02). The mould seam was decorated with oak leaves, while the side of the bowl showed a combination of grapes and vine leaves. The example from St Thomas Street is identical to Oswald's St Ebbe's type 26 (Oswald 1984; 258), dated to AD1800+.

- Stems with base

The two stem fragments including spur and partial bowl collected from layer (1/13) had a complete, forward spur similar to Oswald's St Ebbe type 21, dated between 1731 and 1748, although the lack of more substantial remains of the bowl prevented from a positive identification.

Similarly, the item found in deposit (1/07), preserving a flat heel and part of the bowl, resembled Oswald's St Ebbe's type 10 (1700-1740), although a positive identification was prevented by the fragmentary nature of the object. A second stem fragment, including the flat heel base from the same context, was identified as Oswald's 1975 no.9, dated between 1680 and 1710 (Thompson 1981; fig 4, fig. 6).

Deposit (3/03) yielded two stem fragments partially preserving the base; a fragmentary spur and a fragmentary flat heel were observed. The single stem fragment with spur from the same layer preserved the maker's initials T(/)F on the sides of the spur. The overall type was comparable to Oswald's St Ebbe's type 34e, dated to *c.* 1850, although no exact correspondence for the initials was found.

5.3 Faunal Remains

Animal Bone by *Roxanne Blanks*

See Appendix 1

Oyster Shell by *Simona Denis*

Five oyster shell fragments, weighing 49.9g in total, were recovered from three different deposits. Test Pit 1 contained the vast majority (80%) of the recovered oyster shell.

The two examples from layer (1/07) were positively identified as left valves, while the two items from context (1/13) were found to be right valves (Winder 2011). The fragment found in deposit (4/02) remains unidentified, as too small to retain any diagnostic feature.

Context	Type	No. of Items	Weight (g)	Context Date Range
1/07	Left valve	2	25.1	Modern
1/13	Right valve	2	23	Modern
4/02	Unidentified valve	1	1.8	Modern

Table 3: Oyster shell occurrence by context and type

It is not recommended to retain the oyster shell fragments due to their very limited potential for further analysis.

5.4 Building Material

Ceramic Building material by Stephanie Duensing and Simona Denis

A small group of 22 ceramic building material fragments, weighing 1548.4 in total, were found in. The material, dating to the post-medieval period, was found in a fair state of preservation although extremely fragmentary.

Context	Type	No. of Items	Weight (g)	Comments	Date Range
1/07	Floor tile	1	25	Brown glaze	Modern
	Drain pipe	1	8		
	Border edging	1	105.7	Brown glaze	
1/13	?Floor tile	1	42.9	Red glaze	14 th – 16 th C.
	Roof tile	2	37.9		13 th – 18 th C
	CBM	2	24.6		Undetermined
2/01	CBM	6	45.6		Undetermined
2/02	CBM	2	14.1		Undetermined
3/04	Brick	1	126.5	Arris preserved. Complete height 41mm	?Post-Med
4/01	?Brick	1	51.1	Black core	?Post-Med
4/02	Brick	1	691	Complete height 60mm	?16 th C.
4/04	Roof tile	2	69.9		Modern
	?Brick	1	306.1		

Table 4: Ceramic building material occurrence by context and type

The six items (27.7% of the collection) recovered from layers (1/07) and (4/04), comprising floor and roof tile, as well as drain pipe and a fragment of border edging, were found to be modern and not considered for retention.

Of the remaining fragments, 10 were of very limited dimension and did not preserve any diagnostic feature or complete dimension; therefore these items remain unidentified and undated, and are not recommended for retention.

- Brick

Four of the items were identified as post-medieval brick fragments. The example found in layer (3/04), weighing 126.5g, preserved one complete arris, and the original height of 41mm. traces of mortar were present on one of the faces of the fragment.

The item collected from layer (4/02), of a weight of 691g, was tentatively dated to the 16th century on the basis of its general aspect, and the complete preserved height of 60mm, similar to known examples produced in that period (Sharpe 2011).

- Roof Tile

A single fragment of possible post-medieval roof tile was collected from layer (1/13). The item, weighing 37.9g, did not preserve any diagnostic feature.

- Floor Tile

One fragment of possible plain glazed floor tile was found in deposit (1/13). The item, measuring 50x38x15mm, preserved a layer of red glaze on the face. The floor tile was tentatively dated to the 14th – 16th century.

Stone by *Simona Denis*

One flat fragment of stone, weighing 11.2g, was found in deposit (01/07). The item was extremely fragmentary and tentatively identified as a stone tile. The object remains undated.

The fragment of stone tile is not recommended for retention due to its incompleteness and very limited potential for further analysis.

Slate by *Simona Denis*

A single fragment of slate, weighing 13g and measuring 75mm in length, was recovered from layer (4/02). The item, although extremely fragmentary, was positively identified as slate roof tile, and dated to the 19th century.

It is not recommended to retain the slate roof tile fragment due to its extremely limited potential for further analysis.

5.5 Metalwork by *Simona Denis*

A total of 17 metal objects were collected during the excavations at John Coombes House. The most represented material was iron, constituting over 88% of the assemblage, the remaining being constituted by two fragments tentatively identified as slag.

The state of preservation of the collection is extremely poor; severe oxidation prevented the observation of the manufacturing details in most cases, with the exception of the modern nail and screw recovered from context (1/07).

Context	Type	No. of Items	Weight (g)	Comments	Date Range
1/07	Fastener/Rod	1	212		Undetermined
	Nail shaft	1	18.1		
	Nail	1	2.5	Flat head, round cross-section	Modern
	Screw	1	9.3	Slotted head	
1/13	Nail shaft	4	40.9+33.9		Undetermined
	Undetermined	2	47	?Residue	
	?Slag	2	5		
2/01	?Fitting	1	118.6	Curved sheet with nail/fastener slot	?Post-Medieval
	Nail shaft	1	12.6		Undetermined
3/04	Nail	1	23.8	Flat round head, rectangular cross-section	1800-1880
3/05	Hinge/Fitting	1	98.8	Tapered flat strip with nail	?Post-Medieval
4/04	Undetermined	1	112		Undetermined

Table 6: Metal objects occurrence by context and type

It is not recommended to retain the iron nails due to their extremely unstable state of preservation and their very limited potential for further analysis.

5.6 Miscellaneous

Glass by *Simona Denis*

A small collection of 25 glass fragment, of a combined weight of 810g, was recovered during the excavation. The state of preservation of the objects is mediocre, and extremely fragmentary; only limited observation on manufacturing details and dating were possible. Extensive iridescence was observed on 2 of the fragments.

The vast majority (22 items, or 88% of the collection) of the fragments were positively identified as belonging to bottles; the remaining three items were identified as flat glass, probably from windows. The assemblage was dated to the post-medieval and modern periods on the basis of the general aspect of the material.

Context	Type	Colour	No. of Items	Weight (g)	Date Range
1/07	Wine bottle body	Olive green	1	36	1850-1899
	Case bottle body	Clear	1	15	
	Flat glass	Clear	1	11	Modern
		Aqua	1	28	
1/13	Wine bottle body	Olive green	8	90	1700-1850
	Wine bottle base	Olive green	3	117	
	Wine bottle neck	Olive green	1	15	
	Wine bottle finish	Olive green	1	37	
2/01	Window glass	Clear	1	1	Post-Medieval
2/02	Wine bottle neck	Olive green	1	15	1700-1830
3/04	Wine bottle body	Olive green	1	9	
	Wine bottle base	Olive green	1	216	
3/06	Wine bottle body	Olive green	3	164	
3/08	Wine bottle finish	Olive green	1	56	

Table 7: Glass fragments occurrence by context and type

The glass fragments are not recommended for retention due to their extremely poor and unstable state of preservation, and limited potential for further analysis.

6 DISCUSSION

The presence of 1800s drainage systems throughout the full extent of test pit 1 indicates a disturbed ground likely devoid of any lower in situ archaeological remains within the impact level. Brickwork and a water pipe in test pit 2 also shed light on the extent of disturbance throughout the area. Based on the evidence from trial pit 3, it is unlikely that the investigation area did form part of the burial ground within the churchyard. The sequence of made ground deposits in trial pit 3 indicates several phases of development including medieval deposits, which may relate to reclamation of this relatively low lying area, and then activity from the early 18th century to the modern period. Furthermore, it can be confirmed that the entire site shows a very low risk to contain any significant archaeological remains within the impact zone of the development.

The large amount of butchered bones may be associated with the use of the building as a school when animals or whole carcasses were brought in.

7 ARCHIVE

Archive Contents

The archive consists of the following:

Paper record

The project brief
Written scheme of investigation
The project report
The primary site record

Physical record

Finds

The archive currently is maintained by John Moore Heritage Services and will be transferred to the Oxfordshire County Museum Services.

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Appendix 1

Report on the animal remains from John Coombes House, St. Thomas, Oxford, Oxfordshire by Roxanne Blanks BSc (hons), MSc.

An assemblage of animal remains were recovered during an evaluation conducted at the Galilee Rooms, John Coombes House, St. Thomas, Oxford, Oxfordshire. The total assemblage consists of 76 fragments from *Bos*, *Sus*, and unidentified mammal species, recovered from a total of 12 contexts (table A1). The assemblage is well preserved and has been subject to little taphonomic damage, however mineral adhesion, soil and metal staining are evident on a small proportion of the assemblage. The assemblage also displays a relatively high amount of pathology (25% of the total assemblage by fragment count) with many displaying periosteal new bone. All of the remains were identified in accordance with Hillson (1992) and Schmid's (1972) identification manuals.

Table A1: The assemblage by context and fragment count

Context	Number of fragments
01/07	7
01/13	10
02/01	1
02/02	4
03/04	6
03/05	16
03/06	14
03/07	5
03/08	10
04/01	1
04/02	1
04/04	2

The species represented include *Bos*, *Sus* and unidentified mammal remains. By order of commonality the most common species identified was *Bos* (14.47% of the total assemblage by fragment count), followed by *Sus* (13.16% of the total assemblage by fragment count). Possible identifications were made of *Sus* (4/12 contexts), *Bos* (1/12 contexts), *Ovis* (1/12 contexts) and *Cervus* (1/12 contexts). Whilst species identification could not be ascertained for the majority of the assemblage (72.37% by fragment count). The

number of individual specimens (NISP) across the assemblage is 76, none of the fragments could be pair-matched or identified as belonging to a single individual.

Table A2: Species representation

Species	Number of fragments	% of total assemblage
<i>Bos</i>	11	14.47
<i>Sus</i>	10	13.16
Unidentified mammal (and possible identifications)	55	72.37

A large proportion of the assemblage 47/76 fragments (61.84% of the total assemblage) displays one or more butchery mark and it is highly likely that this assemblage constitutes butchery waste. Butchery marks have been identified in accordance with definitions laid out by Seetah (2007), and www.boneid.net (2017). Butchery marks are represented across the species present on site, suggesting no preference for the meat of a particular animal (table 2) A variety of butchery marks

have been identified on the assemblage these include fine slice marks, chop marks, scoop marks, and marrow splitting (table 6). One clear example of a 'soup bone' has been identified within the assemblage from context 03/05, soup bones are used in broths and soups as the marrow provides added flavour (figure A5). Also identified is a thoracic vertebra from context 03/06 displaying evidence of sawing in a pattern characteristic for the production of T-bone steaks (figure A3).



Figure A3: *Bos* thoracic vertebra, from context 03/06, displaying striations from sawing during the butchery process. This is appearance is characteristic of a T-bone steak.



Figure A4: *Bos* femur, from context 03/05, which is a typical 'soup' bone.



Figure A5: *Bos* femur, from context 3/05, displaying striations from sawing during the butchery process. This is a typical 'soup' bone.

Table A5: Butchery across the assemblage

	Number of fragments with butchery marks	Total % with butchery marks
Assemblage	47	61.84
<i>Sus</i>	5	50
<i>Bos</i>	11	100
Unidentified mammal	31	56.36

Table A6: Analysis of butchery across the assemblage by cut mark typology

	Number of fragments with mark	Total number of marks	% of total number of butchery marks
Fine slice	14	110	66.27
Chop	17	22	13.25
Saw marks (striations)	3	5	3.01
Scoop	7	9	5.43
Transverse breaks from marrow splitting	2	2	1.20
Axial breaks from marrow splitting	14	16	9.64
Blade insertion	1	2	1.20

A number of specimens (19 fragments, 25% of the total assemblage) within the assemblage display a pathological lesions (table A7) The most common pathological lesion identified was periosteal new bone (also known as woven bone). Periosteal new bone occurs when the periosteum experiences an inflammatory reaction and as a result the bone begins to form a new layer of bone (Waldron, 2009). This inflammatory response can be triggered by infection or trauma (Waldron, 2009). A further inflammatory response that was noted was increased porosity, this was noted on the internal aspect of the postero-lateral articular surface of the inferior articular surface of a *Sus* right hallux (figure X). Periodontal disease was also identified within the assemblage on a single *Sus* hemi- mandible fragment (context 03/08; figure X). Periodontal disease, more commonly known as gum disease, occurs when bacteria in the mouth (specifically those from dental plaque) multiply and infiltrate the gingiva (gums) via periodontal pockets (Waldon, 2009). Periodontal disease can cause extreme discomfort, gingival bleeding and ante-mortem tooth loss (Waldon, 2009). The *Sus* hemi-mandible belonged to a juvenile individual (as evident by an un-erupted canine), which displays increased porosity and periosteal new bone in the alveolar bone at the site of the gomphosis.



Table A7: Summary of pathologies

Figure A6: *Sus* right hallux (context 04/04) showing periosteal new bone and increased porosity.

Pathology	Number of affected fragments	% of assemblage affected
Periodontal disease	1	1.32
Periosteal new bone	18	23.64
Increased porosity	1	1.32



Figure A7: *Sus* hemi-mandible showing periosteal new bone (context 03/08).



Figure A8: *Sus* hemi-mandible showing periosteal new bone (context 03/08).

In general the assemblage has been subject to little taphonomic damage. The assemblage displays several different colours of bone from a pale brown to a very dark brown, this differential soil staining is not unexpected for an archaeological assemblage. Also expected within an archaeological assemblage are taphonomic fractures; evident on multiple specimens within the assemblage. A few specimens within the collection have been subject to noteworthy taphonomic alterations. These taphonomic alterations include metal staining and mineral encrustation. Two of the specimens from contexts 01/13 and 03/06, both diaphysis fragments of an unknown species display small (~1mm diameter) circular patches of green staining associated with the presence of copper (Cu; figures 9 and 10). This demonstrates the fragments must have been in contact with a Cu or copper alloy object within the burial environment for a sustained period of time. A single fragment of *Bos* metatarsal/metacarpal, from context 01/13, displays transverse line of orange-brown staining from Iron (Fe), which culminates with a small amount (less than 1mm diameter) of encrusted Fe (figure 11). Demonstrating the metatarsal/carpal had prolonged contact with an Fe object within the burial environment.

Table A8: Noteworthy taphonomy summary.

Taphonomic damage	Number of affected fragments	% of total assemblage affected
Iron (Fe) staining	1	1.32
Copper (Cu) staining	2	2.63
Mineral encrustation	2	2.63



Figure A9: Copper (Cu) staining evident on a diaphysis fragment from context 01/13.



Figure A10: Copper (Cu) staining evident on a diaphysis fragment from context 03/06.

Further taphonomic damage of note is that of a diffuse white-grey encrustation on two fragments of bone, a *Bos* metacarpal/metatarsal and a *Bos* right distal humerus from contexts 01/13 and 03/04 respectively (figures A11). This mineral encrustation may be salt (NaCl) from the soil (Symes and Pokines, 2014).



Figure A11: *Bos* metatarsal/metacarpal from context 01/13 displaying Iron (Fe) and mineral encrustation as well as Fe staining.

A single example (from context 01/13) of worked bone has been identified within the assemblage. The worked bone is a brush head for a possible suede-brush or toothbrush. Modern examples of bone toothbrushes were common during the 1920s

and were produced from *Oxen* bones (Parker, 2013). The toothbrushes were produced by using a small bow-drill to drill the holes in the head, then the backs were engraved to keep the holes and bristles in place (Parker, 2013). Finally the brush would be tumbled to give it a smooth appearance (Parker, 2013). It is likely that a similar production process was used to make the bone brush recovered from context 01/13.

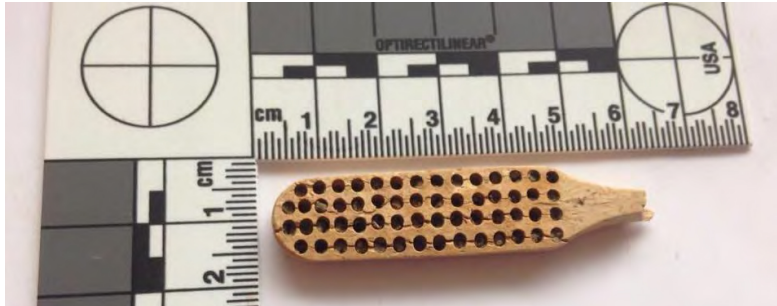


Figure A12: Bone brush (context 01/13).

In summation the assemblage from the Galilee Rooms, Coombe House, St. Thomas, Oxford, Oxfordshire most likely represents the butchery waste. In general the assemblage was well preserved and subject to little taphonomic modifications, with the exception of a few noteworthy cases of mineral encrustation alongside metal staining and encrustation. The assemblage displays relatively high levels (25% of the total assemblage) of pathology with periosteal new bone formation as the most common pathological lesion. Further to this a single example of worked bone was recovered, in the form of a bone brush demonstrating the utilisation of bone as a raw material. The assemblage from the Galilee Rooms demonstrates that animals were exploited at this site for use as raw materials and for meat.

Total assemblage summary of bone

Context	Identification	Skeletal element	Number of fragments	Weight (g)	Comments
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01/ 07	<i>Bos</i>	Right humerus	1	171	6 fine slice marks just superior to the coronoid fossa. 7 fine slice marks on the superior postero-lateral surface. 4 fine slice marks on the distal medial surface. Taphonomic damage to the posterior distal surface with cortical delamination. Taphonomic breakage of the medial malleolus. Patch of cortical delamination (taphonomic) on the superior anterior aspect of the fragment)
	Unidentified mammal	Rib	2	33	1)8 fine slice marks on the lateral surface, 17 fine slice marks on the medial surface. Taphonomic damage to both posterior and superior ends. 2)Taphonomic breaks to both anterior and posterior aspects of fragment
		Diaphysis (unidentified)	2	15	1) 4cm in length. Patch of periosteal new bone on the lateral surface. 2) 7cm. On superior surface striated cut marks from sawing during butchery. Chop mark through distal edge of fragment in the superior-inferior

					direction.
		Metatarsal	1	26	Chop mark through the lateral surface of the diaphysis (marrow splitting. Taphonomic damage to the distal end
	<i>Sus</i>	Radius	1	22	Chop mark through distal diaphysis, with radiating fracture spiralling from antero-lateral to postero-lateral aspects. Taphonomic puncture through distal anterior aspect.
01/ 13	<i>Bos</i>	Metatarsal/metacarpal	1	87	Diffuse adhering of a white/grey substance possible salt encrustation. On the posterior medial aspect of the fragment black and rusty discolouring and a small amount of adhering Fe. Two chop marks through the diaphysis one on the lateral surface, one on the medial surface
		Sacrum	1	22	Transverse cut mark across alae and body. Vertical cut through the body, displaying striations from sawing.
	<i>Sus</i>	Distal tibia (right)	1	15	Vertical cut through diaphysis from medial-lateral, from marrow splitting. Fracturing of the

				superior end of the fragment
Unidentified mammal	Unidentified diaphysis	1	3	Chop mark evident on lateral edges, this is the popped off bit from marrow splitting. On the anterior surface diffuse appearance of periosteal new bone. Middle of the fragment there is a circular patch of green staining from a copper object.
	Unidentified	1	4	Worked bone – possible suede brush
Unidentified mammal/? <i>Sus</i>	Intermediate phalanx.	2	8	1) Taphonomic puncture to the posterior medial aspect. Small patch of brown/orange discolouring to the superior anterior aspect of the phalanx from iron.
	Cervical vertebra (right half)	1	2	Juvenile (unfused vertebral body epiphyseal surfaces). Vertical chop mark through the Body and spinous process separating the left half (missing) from the right half (present).
	Metatarsal/metacarpal	1	18	Taphonomic breakage to the diaphysis. 12 fine slice marks on the medial surface. Two fine slice marks on the lateral surface.
Unidentified mammal/ <i>Bos</i> ?	Femur (diaphysis)	1	14	Striation marks through the

					superior aspect of the diaphysis fragment. Chop mark through the inferior aspect of the fragment. Diffuse cortical delamination.
02/01	Unidentified mammal	Metatarsal/metacarpal	1	8	Medial distal surface patch of periosteal new bone. Lateral superior surface patch of periosteal new bone.
02/02	Unidentified mammal	Unidentified diaphysis	4	2	Fragments all display taphonomic breakages.
03/04	Unidentified mammal	Unidentified diaphysis	3	9	1) Periosteal new bone diffuse on the outer surface. Chop marks on the lateral and medial surfaces, this is a fragment that has been popped off during marrow splitting. Possible tibial fragment. Chop mark (vertical) through the postero-lateral surface. Taphonomic breakage to the superior and inferior surfaces. Chop mark through the middle of the fragment (possible cleaver).
	Unidentified mammal: <i>?Sus/?Ovis</i>	Right mandibular corpus fragment with molar in situ	1	28	Taphonomic break to the anterior and posterior surfaces. Juvenile individual, molar has partially erupted.

	<i>Bos</i>	Distal humerus (right)	1	97	Chop mark through medial condyle and diaphysis. Chop mark through distal lateral diaphysis. Probably as a result of marrow splitting. Several creamy coloured patches on discolouration (less than 1mm diameter) on the medial and lateral malleolus (possible encrustation from salt). Some encrusted plant roots on the lateral surface just lateral to the coronoid fossa, just posterior to the lateral condyle.
		Lumbar vertebra	1	92	Juvenile (both vertebral body epiphyseal plates unfused). Chop mark (vertical) through the left transverse process. Chop mark (transverse) through the right transverse process and superior articular facet. Chop mark (transverse) through the inferior spinous process.
03/05	Juvenile unidentified avian/small mammal	Right Humerus	1	2	Unfused epiphyseal surface (juvenile)
	<i>Bos</i>	Un-sided femoral mid-diaphysis	1	116	Diffuse patches of periosteal new bone (2 on lateral surface, one on medial surface, one on anterior

				surface). Both superior and inferior edges have striation marks from sawing during the preparation of the 'soup bone'. 4 fine slice marks on the medial edge
	Vertebra	1	23	Unfused distal epiphysis. Chop mark through diaphysis from superior to inferior aspect – marrow splitting. Periosteal new bone on anterior tibial crest, on lateral and medial aspects and on the anterior & posterior distal ends.
	Thoracic Vertebra	1	32	Sectioned vertebra, cut from superior to inferior direction through the vertebral body and a cut through the vertebra in the anterior-posterior direction through the left transverse process, spinous process and body.
	?Radius/Unidentified diaphysis	1	23	One shop mark superior-inferior direction through diaphysis. One cut mark through superior edge (striation marks). Inferior edge taphonomic breakages.
<i>Sus</i>	Juvenile right femur	1	55	Unfused femoral head (exposed epiphyseal surface on femoral neck),

					partially fused greater trochanter). 4 fine slice marks on superior lateral aspect. One chop mark through mid-diaphysis cut mark is on the anterior aspect with force dispersed in an antero-posterior direction.
		Femur (left, distal)	1	24	
Unidentified mammal		Un-sided ribs	3	15	5cm in length, 7cm in length, 8.5cm in length. 5 cm taphonomic breakages on posterior and anterior aspects. 7cm taphonomic break to the posterior end of fragment, chop mark through the anterior aspect with a fine slice mark just posterior to that on the lateral surface, 1 small puncture mark in the middle of the fragment, one fine slice mark in the middle of the medial aspect. 8.5cm fragment – on posterior lateral aspect one puncture mark, on mid lateral aspect green staining from Cu, one posterior lateral surface one large patch of periosteal new bone, taphonomic breakages to the anterior end of fragment, chop

					mark through posterior end of fragment
		Un-sided tibial diaphysis	1	5	Anterior surface diffuse appearance of periosteal new bone.
		Unidentified	1	Less than 1	Chop marks separating the vertebral body from the spinous process and transverse process.
		Radius (superior, left)	1	4	
	Unidentified small mammal	Femur	1	1	Left distal end of pig femur. Chop marks separating the distal end from diaphysis. Chop mark from superior to inferior direction through lateral aspect of diaphysis.
	Unidentified mammal/? <i>Sus</i>	Tibia	1	18	Juvenile, unfused superior epiphyseal surface. Taphonomic break through mid-diaphysis.
03/06	<i>Bos</i>	Thoracic vertebra	1	65	Striation marks on the superior and inferior surface from sawing. Fragment is the spinous process. Also a chop mark on the anterior medial aspect. Periosteal new bone on the medial surface, diffuse presentation but more concentrated on anterior aspect. Periosteal new bone on the lateral surface

	Unidentified mammal/? <i>Sus</i> /? <i>Cervus</i>	Distal humerus (left)	1	30	Two scoop marks on the medial distal diaphyseal surface. Cut mark (oblique) through the diaphysis (marrow splitting).
	Unidentified mammal	Unidentified diaphysis fragments	4	30	1) 5cm, periosteal new bone on surface, this is a bit that has been popped off due to marrow splitting. 2) 5cm, this is a bit that has been popped off due to marrow splitting. 3) 4.5 cm. Chop mark (transverse) through the superior diaphysis. 3 fine slice marks on the posterior surface. Blue/green staining from copper on the lateral surface. Anterior surface has 4 small puncture marks. (Possible indication of scavenging though unlikely). 4) 7cm, periosteal new bone formation on the outer surface of the fragment. This is a bit that has been popped off during the process of marrow splitting. One fine slice mark and two nicks on the out surface. Small patch of slight grey discolouration on the outer surface.

	Unidentified alveolar bone	1	14	Cut mark (transverse) through the inferior surface. Taphonomic breaks on the superior, anterior and posterior aspects.
	Cervical vertebra (probable juvenile)	1	5	Cervical vertebra fragment. Right half of vertebra. Vertical cut through body and pedicle separating the two halves. Taphonomic breakage to the right transverse process. Probably juvenile – Small in size, body epiphyseal surfaces are absent/too degraded to ascertain from state of fusion.
	Cranial: temporal fragment	1	3	Sagittal sinus is present.
	Innominate	1	5	Small fragment of innominate 5cm in length, 3cm wide, has partial auricular surface. Chop mark (vertical) through the innominate at the level of the auricular surface
	Proximal phalanges	2	16	1) ½ a phalanx has a chop mark through the diaphysis. 5 fine slice marks on the superior aspect of the body. Scoop mark on the anterior medial aspect of body. 2) Scoop cut

	Unidentified mammal/? <i>Sus</i>				mark out the posterior lateral aspect and anterior lateral aspect. On the distal most inferior aspect there is a small circular spot of black discoloration. One fine slice mark across the medial aspect of the body.
		Distal epiphysis (femur)	1	4	
		Distal tibia (left)	1	18	Juvenile tibia (distal epiphysis is unfused). Patches of periosteal new bone on the medial distal surface. Scoop mark from the mid-shaft just inferior to the cut mark. Chop mark (oblique) superior-inferior through the mid-diaphysis perhaps for marrow extraction.
03/07	<i>Bos</i>	Rib	1	66	Anterior portion has taphonomic breakage, superior posterior aspect displays a scoop mark, as does the posterior lateral aspect. Medial lateral aspect displays 6 fine slice marks. Anterior lateral aspect of fragment displays 4 small puncture marks (possible scavenging)
	Unidentified mammal	Unidentified trabecular fragment	2	Less than 1g	Taphonomic damage to the distal end. Cut

					Mark through the proximal end of fragment (mid-diaphysis) from supero-lateral to disto-medial direction with radiating fracture through to the medio-lateral edge.
	Unidentified mammal/ ? <i>Sus</i>	Fused radius and ulna (left)	1	21	Juvenile (unfused distal epiphysis). Patch of periosteal new bone on the posterior distal surface. Patch of periosteal new bone on the antero-medial surface. Diffuse appearance of periosteal new bone. Chop mark through the diaphysis from superior-inferior aspects of the lateral surface. Evidence of marrow splitting.
	<i>Sus</i>	Distal femur (right)	1	20	
03/08	<i>Sus</i>	Mandible [right half] (with premolar 3, premolar 4, molar 1, and root of molar 2, and canine in situ)	1	58	Extensive periosteal new bone formation on the buccal surface. Periosteal new bone formation at the gomphosis, (periodontal disease) increased porosity in the alveolar bone between teeth. Slight calculus on the lingual surfaces of the teeth. Tusk is fully formed but has not yet erupted. Can also see premolar 4 inside

				the jaw waiting to erupt.
	Ulna (left)	1	16	Two fine slice marks on medial surface of mid-diaphysis.
	Talus (calcaneal articular surface)	1	3	
Unidentified mammal/ ? <i>Sus</i>	Rib	2	18	1) Flatter rib. Cut marks (vertical) through anterior and posterior aspects. Taphonomic damage breakage to the superior aspect and two transverse cut marks through the inferior aspect. 2) Taphonomic breakage to the posterior articular surface. Vertical cut through the anterior edge. Periosteal new bone on the inferior surface at the attachments for <i>M. intercostalis</i> . Right rib.
Unidentified mammal	Unidentified diaphysis	1	1	Black discolouration on the outer surface of this fragment. This fragment is a bit that has been popped off during the process of marrow extraction.
	Thoracic vertebrae	2	24	1) Lighter in colour. Has a vertical cut through the left superior articular facet and a vertical cut separating the right

					(not present) half of the vertebra from the left half. 2) Darker – 2 vertical cuts through the vertebra separating the superior transverse process from the body and from the pedicle.
		Unidentified diaphysis	1	3	
		Tibia	1	64	Posterior surface displays 4 fine cut marks on the diaphysis. Scoop mark out of the posterior diaphysis (inferior part of fragment). Two chop marks through fragment (vertical) to split open the bone for marrow extraction.
04/01	Unidentified small mammal	Rib	1	1	Taphonomic breaks to posterior and anterior aspects.
04/02	Unidentified mammal	Unidentified diaphysis	1	2	Small patch of periosteal new bone on the anterior surface
04/04	<i>Sus</i>	Hallux	1	15	Periosteal new bone on the lateral and medial posterior surfaces. Increased porosity on the interior lateral inferior articular surface.
		Proximal femur (left)	1	31	Taphonomic damage to the proximal surface (no trochanters left). Juvenile individual (used femoral head). 13 fine slice marks on

					<p>the medial proximal surface. One fine slice mark on the lateral surface (mid-diaphysis). Periosteal new bone in the intertrochanteric space. Transverse chop mark through the mid-diaphysis. With small scoop mark just superior to the chop mark on the mid-diaphysis and radiating fracture.</p>
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