

**A Medieval Industrial Complex  
and its Landscape: the  
Metalworking Watermills and  
Workshops of Bordesley Abbey**

*Bordesley Abbey III*

**By G G Astill**

With contributions by

**S J Allen, L Biek, C Bloomfield, D Brown,  
W J Carruthers, P Cannon, I Eaves, R Entwistle,  
J Evans, I Freestone, C Gaffney, I Goodall, F Grew,  
C Heron, M Hughes, J Lovett, V Nailor, M Noel,  
J D Miller, N J Mayhew, I Ridge, D Sim, D Walsh,  
S Wess, V Wass, S M Wright, and B Xu**

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**Table M1 M&B (BAB) stratigraphic sequence**

NUMBER	PERIOD 1 LAYERS		PERIOD 1 FEATURES	
	DESCRIPTION	INTERRELATION	NUMBER	DESCRIPTION
<b>PHASE 1</b>				
E992(S12)	Dark red to greenish grey Mercian mudstone.	Below E967, E966.		
E967(S4,S12,S24); C1080(S15)/B1144(S21,S22); A1174(S3,S2)/A1161(S1,S2)	Pebbles and gravel in dark grey to greyish brown clay matrix.	Above E992. Below C1081; B1148; E849; E966; A1164; A1172, A1171, A1189, A1181.	E991(S12)	Cut of stream bed.
E996(S12,S18); E849(S24)	Medium pebbles and gravel in reddish brown to reddish grey clay matrix. Redeposited pebbles.	Above E967; E993, E971. Below E435, E891, E865, E864; E966.		Cut into E967, filled with E971 very dark greyish brown organic debris and E993 gravel in dark brown silt.
A1171(S2,S3)	Brownish grey silt.	Above A1174. Below A1172, A1167.	A1192(S2)	Eroded cut of stream bed.
			A1180(S2)	North side of stream bed.
			A1194(S2)	North side of stream bed.
			A1195(S2)	North side of stream bed.
				Cut into A1171, filled with A1172 gravel in brown sandy silt matrix. Cut into A1172, A1174, filled with A1189 organic black silt. Cut into A1189, filled with A1181 pebbles and gravel in greyish brown silt and A1179 reddish grey clay silt with organic debris. Cut into A1181, filled with A1188; A1164 grey to reddish black organic silt and A1187 brownish grey silt and organic material.

**Table M1 M1 (BAB) stratigraphic sequence ... Period 1, continued**

NUMBER	DESCRIPTION	PERIOD 1 LAYERS, continued		NUMBER	DESCRIPTION	PERIOD 1 FEATURES, continued	
		INTERRELATION	INTERRELATION			INTERRELATION	INTERRELATION
<b>PHASE 2</b>							
A1173(S2)	Dark olive grey clay silt deposit.	Above A1181, A1187, A1172. Below A1163.		B1138 (S21,S22); A1190(S4)	Stream bed.		Cut into B1144; A1163, filled with A1177 reddish grey silty clay with organic debris, B1042; A1186 mixed pebbles and gravel in grey clay matrix and B1041(S21, S22) and A1184 yellowish grey clay silt and B1141(S21, S22); A1183(S1) grey silty clay.
E1044(S10)/E966 (S4,S12,S16,S18, S24)/E997(S16)/ A1163(S1,S2); D596(S14)/C1081 (S5,S15)/B1148 (S21)	Dark greenish grey through greyish yellow brown to dark reddish brown silty clay. First blanket silt.	Above E1037/E996, E967/ C1080/B1041, B1140; E967/ A1172, A1167, A1162. Below E1036/E816/D595/C1084, C1082/B1135, B165, B1132; E272, E960, E990/A1162, A1167.		E1047(S4); B1147 (S21,S22)	Stream bed.		Cut into E966; B1141, B1140, B1148, filled with B1145 organic material, B1139 wood fragments, and B1142 grey mixed silts; E1046; B1143 pebbles in blue grey clay and charcoal.
B1140(S22)	Pebble lens in brownish black sandy silt matrix. Bank.	Above B1041, B1144. Below B1141, B1132.		A1191(S1)	Stream bed.		Cut into A1163, filled with A1178 brownish grey silt.
<b>PHASE 3</b>							
E1036(S10)/D595 (S14)/C1082(S10, S15)/B165(S5)/ B1135(S5,S21, S22); D500(S11, S10)/D501; A1182 (S1); A1162(S2, S3), E997(S16); E816(S12,S18)	Dull reddish brown to brown clay silt, few pebbles. Second blanket silt, includes continuing development of E997 from previous blanket silt and E816, ?also part of period 2 platform.	Above E1037, E1046/D596/ C1081/B1148; D596; A1163, A1183, A1178; A1167, E967. Below E1043/D591/C1084, C1085/B1131, B645; D335/ D334; A1165, A1168; A118; E960.		A1193(S2)	North side of stream bed.		Cut into A1163, filled with A1169 greyish yellow brown clay.
				A1176(S2)	South side of stream bed.		Cut into A1163, filled with A1167 greyish brown sandy silt.
				E1151 (S4,S16)/ B1149 (S4,S21)/ A1166(S3)	Stream bed.		Cut into E997/B1135, B165, B1142/A1182, A1183, A1184, A1177, filled with E1152/ B1146; B1137, A1168, brownish grey to greyish black silts with organic content.
				B1150 (S21)	Re-establishment of stream bed.		Cut into B1137, filled with B1136 brownish grey sand silt and B1146 greyish brown clay silt.

**Table M1 M8 (BAB) stratigraphic sequence ... Period 1, continued**

NUMBER	PERIOD 1 LAYERS, continued		PERIOD 1 FEATURES, continued	
	DESCRIPTION	INTERRELATION	DESCRIPTION	INTERRELATION
E1092(S4)/ B1094/ A1093(S1)	Stream bed.		Stream bed.	Cut into E1036, E1152/B1137/ A1168, filled with E998/ B1128/A1165 dull yellowish brown to reddish brown clay silt with A1170 organic material within A1165, and E999/B1125 brown to reddish brown sand clay final silting.
B1200(S21)	Re-establishment of stream bed.		Re-establishment of stream bed.	Cut into B1137, B1146, B1136, filled with B1132 brownish grey silt with high organic content.
C1083(S15)	Stream bed.		Stream bed.	Cut into C1082, C1081, filled with C1084 dark grey silt with high organic content.
C1085(S15)	Mixed clay with some organic material. Waterlain silt.	Above C1084, C1082. Below C1086, C189.	Stream bed.	Cut into C1085, filled with C1086 grey silt with organic content.

Table M1 M18 (BAB) stratigraphic sequence, continued

NUMBERS	PERIOD 2 LAYERS		INTERRELATION
	DESCRIPTION	DESCRIPTION	
<b>GROUND PREPARATION</b>			
E1201	Trimmed tree roots.		In E997.
D1159(S11)	Trimmed tree roots.		In D500.
E994(S16)	Pit.		Cut into E997, filled with E995 dull reddish brown clay and E990 charcoal.
C1077(S15)	Large pit.		Cut into C189, filled with C1075; C1071 olive black silt, C1072 reddish black silt with high organic content, C1070; C1078 organic dump with dark reddish grey silt, C1074; C1079 dull reddish brown silt, C1073; C1076 decayed wood and organic debris.
<b>BUILDING CONSTRUCTION AND USE</b>			
E1043(S10)/E1024(S4)/D591(S10)/C196(SS)/B1117/B1131; E960(S16); E816(S12,S18,S24); C189(S15); A82(S3)	Brown to reddish brown clay. Material of first platform.	Above E1036/D595/C1082/B1132/B1135, B165; E997, C1085, C1086; A1165, A1182. Below E919/D571/C185/B1125/B631, B645; E962; C177, C179, C180, A53, A81, A98.	Cut into E1024; B1117, filled with grey silty clay around wooden posts. All cut into B1117/C196, filled with (B1101) B1102 dark reddish brown clay and (C1060) C1061 dull yellowish brown clay.
			Cut into C196; D591, filled with C1013 dark reddish brown clay; D588 greyish yellow brown clay.
E1027	7Slot - discarded timber.		Cut into and sealed by E960, filled with E1025 dull reddish brown clay.

**Table M1 M8 (BAB) stratigraphic sequence ... Period 2, continued**

NUMBERS	DESCRIPTION	PERIOD 2 LAYERS, continued INTERRELATION
B1121(S4)	?Posthole.	Cut into B1117/B1121, filled with B1122 dark reddish brown clay.
C1008 (C1011)	Postpit with post C1011, replacement of post C1012/C1058.	Cut into C189, filled with C1010 greyish to reddish brown clay and C1009 greyish to reddish brown clay fill of post pipe.

**Table M1 Mill (BAB) stratigraphic sequence, continued**

PERIOD 3 LAYERS		PERIOD 3 FEATURES	
NUMBER	DESCRIPTION	DESCRIPTION	INTERRELATION
<b>MILL RACE AND SOUTH BANK: CONSTRUCTION</b>			
D221(S14,S3); C181	Dull reddish brown to dull brown clay. End of north mill pond bank.		
D340(S13,S11)	Dull brown clay with occasional charcoal flecks. End of south mill pond bank.	D1158(D319); D328(D329, D330, D331, D332, D339)	Foundation trenches for baseplate revetment of south side of head race (D319, D329, D330, D339 and a 7step D331, D332).
		D502, D506	Wooden stakes, uprights of wattle revetment.
		D1088(D227/ D228)	Trench for baseplate (D227/ D228). With tenon (D333).
		D312/D313	Timber baseplate for debris grill (repositioned in period 4).
		D1089(D225)	Post hole for timber (D225) support for D312.
		E952(S10,S24)	Cut for wheel pit.
		E1048/E953(S16, S18)(E863, E896, E815); E1050 (E894);E1049 (E969), (E380; E897, E888; E889)	Cuts for north and south side tail race timbers (E863, E896, E815); west (E894); and east (E969) baseplates of tail race; posts (E380; E897) set in baseplate mortices, planks (E888; E889) laid on baseplates.
		E874(S16)	Wattle revetment on south side of tail race.
E893(S12); E899(S18)	Dull reddish brown clay backfill.	E983(S12)(E957, E987; E988; E989) E981(S10,S11)	Cut for post E957 on timber pad (E987; E988; E989). Posthole.
<b>MILL RACE AND SOUTH BANK: USE</b>			
E892(S12,S16)	Reddish brown clay and pebble surface.		Cut into E816, filled with E984 grey clay.
E740(S18)	Loamy clay with sandstone fragments. Repair of bank.		Cut into E816, filled with E982 (period 4).



Table M1 MIB (BAB) stratigraphic sequence ... Period 3, continued

PERIOD 3 LAYERS, continued		PERIOD 3 FEATURES, continued	
NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
MILL RACE AND SOUTH BANK: DISUSE			
E968(S18)	Olive clay with organic content. Silt.		
E970(S18)	Olive clay with organic content. Silt.		
E864(S18,S24, S16)	Grey green clay silt. Primary silting.	E862	Joe of trip wheel. Lay in E864.
E886(S16)	Reddish brown clay dump.		
MILL BUILDING: CONSTRUCTION			
E960(S16), E919(S4,S5,S9)/ E272(S16)/D571 (S9)/C664(S5); B631	Dark reddish brown. to brown mixed clay with occasional pebbles and charcoal fragments. Material for building platform.	B150	Cut for robbing of post B148/1 (period 2).
		B1124(B538, B1095)	Postpit for post (B538) and timber pad (B1095) of building.
		B1129(S4) (B537) B540	Postpit for timber pad (B537) of building. Cut for robbing of post.
		B543	Cut for robbing of post.
		D580	Cut for robbing of post.
		C692; C687; C688; C698; C696; C697; C699; C1000 C694; C690; C1003; C1016 (S9); C1018; C1014(S9) B531	Postholes of west wall of west lean-to. Postholes of west wall of west lean-to. Posthole. Posthole for (B1096), north-east post of north lean-to.
			Cut into B1117, filled with B151 dark reddish brown sand with charcoal fragments. Cut into B1131/B1117, filled with B1123 reddish grey clay. Cut into B1117, filled with B1130 olive grey clay. Cut into ?B631, filled with B541 greyish yellow brown clay. Cut into ?B631, filled with B544 greyish brown clay. Cut into ?D571, D588, filled with D581 dull brown clay. All cut into C664, filled with C686 reddish brown clay and pebbles and C685 grey clay. All cut into C664, filled with C695; C689; C1004; C1017; C1019; C1015 dark brown to grey clay. Cut into B631, filled with B532. Cut into B631, filled with B1114 brown clay.

**Table M1 Mill (BAB) stratigraphic sequence ... Period 3, continued**

PERIOD 3 LAYERS, continued		PERIOD 3 FEATURES, continued	
NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
			INTERRELATION
		B1133(S5) (C1007) B1109	Posthole for (C1007), north-west post of north lean-to. Posthole. Cut into B631, filled with B1134 grey clay. Cut into B631, filled with B1105.
		D570(D583) D574	Postpit for (D583) post of west wall of west lean-to. Posthole. Cut into D571, filled with D567 large pebbles. Cut into D571, filled with D573 pebbles in grey clay.
		E949; E944; E929; E1091	All cut into E919, filled with E950; E945; E928; E941, robbing fills of period 4.
		E1029(E1030)	Cut into E919, filled with E1028. Driven into E919.
		E1038 E832; E979; E985	Stake. Cut into E272, filled with E980; E986 robbing fills of period 4.
		E1040	Cut into E1037, filled with E1039 reddish brown to grey clay.
		E977; E964	Both cut into E960, filled with E978; E959 robbing fills of period 4.
		E973	Cut into E960, filled with E976, E975, E974 mixed brown clays.
		E961/B1098	Cut into E960, ?filled with E962; B1099 robbing fill of period 4.
<b>MILL BUILDING: USE</b>			
E925	Mixed ash and charcoal spread.	B1106; B549; B1119	All cut into B631, filled with B1107; B1112, B1120 dull reddish brown clays with some charcoal and wood (B526). Cut into E919, filled with E934 black ash debris.
E972	Pebble spread - ?threshold.	E936 E908(S19)	Cut into E919, filled with E911 interleafed silt and ash.

**Table M1 MII (BAB) stratigraphic sequence ... Period 3, continued**

<b>NUMBER</b>	<b>DESCRIPTION</b>	<b>PERIOD 3 LAYERS, continued INTERRELATION</b>	<b>NUMBER</b>	<b>DESCRIPTION</b>	<b>PERIOD 3 FEATURES, continued INTERRELATION</b>
<b>ENVIRONS</b>					
<b>C1067</b>	Grey clay and pebble dump.	Above C664. Below C1066.			
<b>C1066</b>	Brown clay dump.	Above C1067. Below C1090, C1055.			
<b>A125; A118(S2, S3); A97; A96; A54</b>	Brown to dark brown loam with charcoal fragments, dump from cleaning out of bypass channel.	Above A1162, A1165. Below A50, A53, A88, A89, A130.	<b>B1100(S6)/ A135(S2,S17)</b>	Cut for bypass channel.	Cut into A82, filled with B1160, A156, A157 period 4.
<b>A107; A108, A158(S1), A159</b>	Charcoal patches.	Above A82. Below A53, A98.			

**Table M1 Mill (BAB) stratigraphic sequence ... Period 4, continued**

NUMBER	DESCRIPTION	PERIOD 4 LAYERS, continued INTERRELATION	NUMBER	DESCRIPTION	PERIOD 4 FEATURES, continued INTERRELATION
<b>E435(S24)</b>	Brownish grey gravel and silt at bottom of tail race.	Above E849, E891. Below E368, E433, E814, E809.	<b>E890(E876); E877, E881 (E882); E969, E870(E859); E883(E860) (S24); E875 (E852)(S18); E882(E857, E853) (E887; E895) (E327)</b>	Cut for baseplate (E876) and timber supports below baseplates (E882; E859; E860; E861; E852; E857) (and peg E853) of mill race.	Cut into E871, laid on E881, E865, E848, sealed by E840.
<b>E848; E891 (S24)</b>	Dark reddish grey clay dumps.	Above E849, E364, E435. Below E845.			
<b>E845(S18)</b>	Blue grey clay and silt dump between south side of period 3 and south side of period 4 tail race.	Above E886, E865, E848. Below E817, E840.		Timber supports for post (E327).	Laid in E849.
<b>MILL RACE AND SOUTH BANK: USE</b>					
<b>E866(S18); E867; E872; E884; E885</b>	Very dark grey to dark reddish grey sand, silt and gravel.	Above E865, E852. Below E840, E845.			
<b>MILL RACE AND SOUTH BANK: DISUSE</b>					
<b>E840(S16,S18, S24)</b>	Pale green clay silt in tail race.	Above E866, E865. Below E800, E452, E846, E368.	<b>(E880)</b>	Wooden stake.	
<b>DEMOLITION OF PERIOD 3 BUILDING</b>					
			<b>E950</b>	Grey clay robbing fill of posthole with charcoal.	Filled E949 period 3.
			<b>E945</b>	Black clay robbing fill of slot, with burnt debris.	Filled E944 period 3.
			<b>E941; E928; E986; E980; E833; E978; E959; B1099/ E962(S16); B532; B1105</b>	Dark brown to reddish brown to brownish grey clay robbing fills of period 3 features.	Filled E1091; E929; E985; E979; E832; E977; E964; E961/B1098; B531; B1109.

**Table M1 Mill (BAB) stratigraphic sequence ... Period 4, continued**

NUMBER	PERIOD 4 LAYERS, continued		PERIOD 4 FEATURES, continued
	DESCRIPTION	INTERRELATION	
B546	Robbing hole of period 3 postpit B1113.		Cut into B631, filled with B547 reddish grey to brown mixed clay fills.
C1005	Robbing hole of period 3 post (C1007/B1133).		Cut into B1134, filled with C1006 brownish grey clay and charcoal.
B528(S4)/3535	Robbing hole of period 3 post (B537).		Cut into B631, B1130, filled with B536/B529 brownish to dark reddish grey clay with charcoal. Associated with B522, B534 mixed clay upcast debris.
B525(S4)	Rubbish pit.		Cut into B631, B529, B536, filled with B521 dark reddish brown clay and charcoal. Associated with B523, B524 mixed clay upcast debris.
B660	Robbing pit for period 3 post (B538).		Cut into B631, B1123, filled with postpit dark brown clay as in B527, B655 dark brown clay. Cut into D570.
D569, D568, D575, E724/D592	Pebbles and clay. Robbing fills of postpit D570. Robbing pit for postpit D574.		Cut into E916, E935/D565, filled with E948/D576, E1045, D572 grey-brown clays.
C674	Robbing trench.		Cut into C693, filled with C675 weak reddish clay.

**MILL BUILDING: CONSTRUCTION**

B1127	Dark reddish brown loam.	Above B165.
B644	Decayed plant material. Dark clays with charcoal, charred wood, pebbles and lead runnels.	Below B644. Above B631. Below B646, B608, B643.
C1001	Greyish brown clay and cobble spread.	Above C685? Below C693.
C693	Dark brown to brown clay and pebble dump.	Above C685, C686, C1001. Below C675, C678.

**Table M1 M8B (BAB) stratigraphic sequence ... Period 4, continued**

NUMBER	DESCRIPTION	PERIOD 4 LAYERS, continued INTERRELATION	NUMBER	DESCRIPTION	PERIOD 4 FEATURES, continued INTERRELATION
C675; C680; C681; C691	Weak red to greyish brown clay and pebble dump.	Above C674, C693, C664, C196. Below C677, C673, C678, C679.	C682/B141	Block of red sandstone (ss). Padstone of north wall of building.	Laid on C672/B645. Packed with C663/B629 reddish brown sand and pebbles, sealed by B111, B94, B101, B619, B604, B605.
C678; C679	Dull reddish brown to greyish brown clay dump.	Above C691; C681; C675. Below C677.	B648	Blocks of ss. Padstone.	Laid on B650, sealed by B626, B632, B633, B649, B647. Associated with B651 tile scatterer.
C677	Greyish brown clay dump.	Above C675, C678, C679. Below C670, C673.	B653	Depression caused by subsidence.	Subsided into B631, filled by B652 cobble standing.
C688	Mixed clays and pebble dump.	Above C664. Below E935/D565/C683.	B144	Block of red ss. North-east corner padstone of east lean-to of building.	Laid on B652, sealed by R66, B607, B630, B626, B647.
C672(SS)/ B645; C676	Dull reddish brown to dark brown clay and pebble surface.	Above C196/B1131. Below C663, B629, C192.	B139	Block of red ss. Padstone of north wall.	Laid on B643, sealed by B66.
B650	Red clay and cobble surface.	Above B524, B523, B534, B631. Below B649, B647.	B654	Block of red ss. Displaced padstone of building.	Laid on B643, B608, B644, sealed by B607.
B643	Clay dump.	Above B644, B608. Below B646.	B142	Block of red ss. Padstone.	Laid on B655, B527, sealed by B52.
B646	Clay dump.	Above B643, B644. Below B607.	D558(S9)/ D560/C667	Foundation trench for west wall of lean-to of building.	Cut into D555/D552/C669, filled with D556/C666 greyish yellow brown clay and pebbles and D557/D554/C665 dark reddish brown clay and pebbles. Also packed with D559/C671 dark reddish brown to brownish grey clay with some pebbles.
B530	Pebble and clay area.	Above B631, B527, B659, B655. Below B635, B634.			
E916(SS)/ D552/D555/ C669	Dark reddish to greyish brown mixed clays and pebble dump.	Above E935/D565, C677, C693, C664. Below E918, E753/D350, D347, D551, C673.			

Table M1 Mill (BAB) stratigraphic sequence ... Period 4, continued

NUMBER	PERIOD 4 LAYERS, continued		PERIOD 4 FEATURES, continued
	DESCRIPTION	INTERRELATION	
D553	Greyish brown clay dump.	Above D565. Below D531.	Cut into D552, filled with D562 dark brown clay and charcoal. Cut into E962, E960, A82, filled with E429/B124 large pebbles in brown foam, sealed by E428, B113, B122.
<b>MILL BUILDING: INTERIOR FEATURES</b>			
E933	Clay dump.	Above E938, E941. Below E759.	Lay on E759, sealed by E247.
E759	Dull orange to light brown clay make-up with some charcoal.	Above E907/E919/ E925, E928, E938, E941. Below E484, E771.	
E484	Clay dump.	Above E759. Below E472, E750.	
E490	Mixed clay dump.	Above E919/B631. Below E902, B655.	
E930/B647(S4)	Reddish brown clay and pebble dump.	Above E759, B650. Below E771/B626, E931, B649/B632/ B633.	Cut into E960, filled with E958 greyish brown clay matrix with very large pebbles. ?Postpad.
E931/E938 (S4)/B649	Greyish brown clay dump.	Above B521, B634, B647, B650. Below E922, E917, E902/ B633.	
E920	Greenish clay dump.	Above E938. Below E771.	
E771; B626(S4); E756; E758; B134	Dark brown to greyish brown mixed clays with some pebbles and much charcoal.	Above E930, E490, E938, E920, E913, B647, B633, B632. Below E774, E755, E491, E259/B112, B630, B628.	Laid on B626, sealed by B623. Cut into E771, filled by E1022 grey clay. Laid on E771, with E773 pebbles in red sandy clay, sealed by E269.
D561	Posthole.		
E965/B136	Foundation trench of pebble wall of east lean-to.		
E263; E485	Blocks of red ss and oolite padstone and foundation of partition wall of building.		
E963	Foundation hole for pad.		
B640; B641; B642 B630	Mixed, dirty yellow red clay patches to B626. Greyish brown clay and pebble surface.		
E1021	Cut for posthole.		
E774	Grey clay dump for doorway.		

**Table M1 Mill (BAB) stratigraphic sequence ... Period 4, continued**

NUMBER	DESCRIPTION	PERIOD 4 LAYERS, continued	
		INTERRELATION	INTERRELATION
E935(S10)/ D565/C683	Dark reddish brown clay with some pebbles, charcoal and ss fragments. Dump.	Above E948, D576, E1045, C664, B631. Below E918, E916, D552, D559, C671.	
E902(S5,S4)/ C670/B635; C673; B609; B633	Brownish grey to dull reddish brown mixed clays. Make-up.	Above E919, B631, C670, C664/B631, C675. Below E921, E917, C662/B612, B628, B607, C187.	
E913	Dark red clay make-up.	Above E926. Below E905, E756.	
E906	Light brown to dull orange mixed clay make-up.	Above E905. Below E907.	
B628	Very dark greyish brown clay make-up.	Above B627. Below B602.	
B637	Very dark greyish brown make-up.	Above B638. Below B636.	
B638	Black clay floor/make-up level.	Above B635. Below B607, B637, B636, B639.	
B639	Olive clay dump.	Above B638, B635. Below B628, B636.	
E905	Red sand make-up.	Above E913. Below E907, E756.	
E932			Cut into E916, E926, filled with E937 dark brown clay bedding.
E909 E915(S19)			Cut for hearth E909. Pebble hearth foundation. Cut for hearth E775.
E775 E779-E799, E900-E901			Tile hearth. Stakeholes.
E921(S4)/E917/ B632	Black ash layer.	Above E902, B633, E919, B634. Below E903, E922, E772/B627, E760, E904, B628.	Cut into E902. Some, E789, E792, E788, E785, E784, filled with E910 dark greyish brown silty clay, all sealed by E750.
E927	* Black ash and charcoal lens.	Above E926. Below E903.	



**Table M1 M8 (BAB) stratigraphic sequence ... Period 4, continued**

NUMBER	DESCRIPTION	PERIOD 4 LAYERS, continued INTERRELATION	NUMBER	DESCRIPTION	PERIOD 4 FEATURES, continued INTERRELATION
E907	Black ash debris.	Above E906, E924. Below E903.			
E918; B634; B608	Black ash debris.	Above E926, E919; B638; B631. Below E903, E922, B643, B650.			
E926	Reddish brown mixed clay of hearth destruction.	Above E925, E934. Below E927, E913.			
E923	Dark red clay make-up/ floor level.	Above E926.			
E924	Light brown sand dump.	Above E925. Below E907.			
E772/B627(S4)	Crushed ss trample.	Above E921/E917, E902/B633. Below E760, E628.			
E760; E769	Sand with pebble surface.	Above E902, E917, E921, E904. Below E499, E751.			
E922	Orange red silt debris from hearth.	Above E921. Below E750.			
E903	Yellowish brown silt debris from hearth.	Above E902. Below E499, E750.			
E904	Dark red sandy clay with burnt ss. Dump or decayed hearth.	Above E902, E917. Below E499, E750, E769.			
E750(S19); E761; E762	Very pale brown to black debris from hearth.	Above E484, E919. Below E498, E499, E755, E491, E470.			
B533	Mixed clays and black staining on surface of B631.	Above B631. Below B604/B605.			
B636	Black silty staining on surface of B638.	Above B638, B637, B607. Below B610.			
ENV/IRONS					
B164(S3,S2,S6)/ B1150/A1160 (S1,S17) A157(S1,S3)	Dark brown to very dark brown silt of (period 3) ditch B1100/A135.	Below B1104/B1149, A157.	B160	Timber sluice.	Cut into A82, sealed by A116.
B1149(S3,S2,S6)/ B1104/A156(S1)	Dark greyish green silt fill of ditch. Brownish black silt fill of ditch with high organic content.	Above A1160. Below A156. Both above B1150, A157. Below B1111/ B163/A155.			

**Table M1 M1 (BAB) stratigraphic sequence ... Period 4, continued**

NUMBER	DESCRIPTION	PERIOD 4 LAYERS, continued		NUMBER	DESCRIPTION	PERIOD 4 FEATURES, continued	
		INTERRELATION	INTERRELATION			INTERRELATION	INTERRELATION
B111(S3,S2,S6)/ B163/A155(S1, S2,S17)	Reddish brown clay silt of ditch with some organic content.	Above B1149/B1104/ A156. Below B1103, B1110, B160, B161, B162/A117.		A128 A129	Rut. Rut.		Cut into A118, sealed by A89. Cut into A118, sealed by A89.
B1110(S6)	Brown clay fill of ditch.	Above B1111. Below B1103.					
B1103(S3,S2,S6)/ B162/A117; B161	Dark reddish brown to dark brown silt of ditch with charcoal fragments.	Above B1111/B163/ A155. Below B166, B116, A92, A89, A53.					
A92(S1): A89	Gravel in yellowish red loam matrix. Hardstanding.	Both above A117, A118. Below A53, A68.					
B166; B116; B137	Gravel in red clay matrix. Hardstanding.	Both above B1103, B161, A118. Below B109, B66, B101, B95, A93. Above A158. Below A53.		A88	Cut or wear in hardstanding.		Cut into A89, filled with A87 (period 5).
A98(S3)	Dark brown loam destruction layer.						

Table M1 (BAB) stratigraphic sequence, continued

NUMBER	PERIOD 5 LAYERS		INTERRELATION	PERIOD 5 FEATURES		INTERRELATION
	DESCRIPTION			DESCRIPTION		
<b>MILL RACE AND SOUTH BANK: CONSTRUCTION</b>						
E817(S18)	Reddish brown clay and pebbles, dump to south of tail race.		Above E845, E836. Below E730, E430.			
E838(S12,S16)	Dark reddish brown clay dump to south of tail race.		Above E817, E871, E892. Below E743, E744, E725.			
E743(S12)	Large pebbles in reddish brown silt. Hardstanding.		Above E838. Below E730, E725, E744.			
<b>MILL RACE AND SOUTH BANK: USE</b>						
E811(S18)	Dark grey silt and pebbles. Silt deposit along north edge of E436.		Above E800. Below E454.			
				E808(S24)(E369); (E736); E813 (S24)(E737) E810(S18)(E436, E443, E450); E837(S18), (E437, E442); E847(S18) (E858, E820), E851 (E821), (E443, E444, E445, E446, E447, E718)	Cuts for west, east, and longitudinal baseplates of wheel trough.  Cut for longitudinal baseplate (E436 with associated tenons E448, E450), cut for longitudinal baseplate (E437 with associated tenon E442), cut for west baseplate (E820 with supporting timber E858), supporting timber (E851) below east baseplate (E821), and (E443-E447) and (E718) boards linking (E436) and (E437), all of tail race.	Cut into E840, E891, filled with E809; E814; E453 brown to grey clay and pebbles. Cut into E997; E840; E848 and E808, filled with E800; E836; E723 grey clay with few pebbles, sealed by E454; E817.
				(E460)(S16), E841, E842; (E461)(S16) (E401); (E850) (E878, E879, E1153, E1154, E1155, E1157) (E449; E451)	North baseplate (E460) with voids E841, E842 for posts; south baseplate (E461) with support (E401) and cross baseplate (E850) with supports (E878, E879, E1153, E1154, E1155, E1157), all of tail race modification. Tenon and upright in north longitudinal baseplate (E436).	Laid on E840, voids filled with E843, E844 grey silt, all sealed by E368.  Sealed by E368.

**Table M1 Mill (BAB) stratigraphic sequence ... Period 5, continued**

PERIOD 5 LAYERS, continued		PERIOD 5 FEATURES, continued	
NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
INTERRELATION		INTERRELATION	
<b>MILL RACE AND SOUTH BANK: DISUSE</b>			
E273(S24)	Brownish grey clay. Siting in wheel pit.	E388	Collapsed timber in E273.
	Above E809, E814. Below E255, E366, E368.		Lay in E273.
<b>MILL BUILDING: CONSTRUCTION</b>			
E757; E755; E499 (S19)/D349/B603; B607; B618; B621; C661/B619	Grey to reddish brown mixed clays with ss fragments and charcoal. Floor level of building.	E765 E474 E768 E770 E752(S19) E277(S19), E278(S19) E480 E496 E497(S19) E235 E620 B622 E776	Cut into E1026, filled with E912 reddish brown clay. Lay on and packed with E912, sealed by E268. Cut into E916, filled with E767 dark brown clay, sealed by E499, E753. Lay on E750, sealed by E470. Cut into E499; E750, sealed by E493, E498. Lay on E499, sealed by E470, E472. Lay on E493, sealed by E470. Lay on E755, sealed by E473. Lay on E499, sealed by E470. Lay on E755, sealed by E234. Cut into B619, filled and sealed by B605. Lay on B619, below B112. Above E474, sealed by E766.
	Above E750/B628; E756; E750; B608, B609, B631, B635, B638; B615; B629, B631. Below E491/D220/ B602; E491; B169; B604.		Cut for hearth E474. Pitched tile hearth. Shallow scoop. Tile setting. Cut for hearth E277, E273. Pitched tile hearths. Tile setting. Tile setting. Tile setting. Large stone ?; nvl. Hollow. Tile dump. Ss in brown clay. Repair to hearth E474.
<b>MILL BUILDING: USE</b>			
E766/D551/C662 (S5)/B612	Reddish brown to greenish grey clay floor level of building.	D212/C182(S9)	Two ss blocks. Door threshold of building.
E498	Ash, sand and ss, debris from hearth E277, E278.		Lay on D551/C662, sealed by D202, D213, D215/C175.
E493	Ash, ss fragments, debris from hearths E277, E278.		
E495	Grey black clays with charcoal. Hearth debris?	E480	Tile setting.
	Above E498, E499. Below E470, E492. Above E493. Below E492.		Lay on E493, sealed by E472.

**Table M1 M1B (BAB) stratigraphic sequence ... Period 5, continued**

PERIOD 5 LAYERS, continued		PERIOD 5 FEATURES, continued	
NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
B623, B615; B617	Pebbles and mixed clays.	B614	Shallow depression.
E492	Pebbles in ash.		Cut into B615, filled and sealed by B610.
E753(S10)/D350/ B602	Grey to reddish brown clay floors.		
C359(S5)/B605	Pebbles in dark brown clay surface.		
E754	Pebbles in reddish brown clay surface.		
B604/C358(S5); B606; B610; B614	Reddish to dark brown clay floor or patching.		
E751(S4); D347/ C356	Pebbles in greyish brown clay surface.	D348 D550	Two ss blocks. Tile setting.
<b>ENVIRONS</b>			
B109; B93; B95; A87; A53(S1, S2, S3), B1E	Pebbles in dark reddish brown clay surfaces.	F19; F20 F16, F26 F17; F18(S2) F21(S2)	Lay on D347, sealed by D213. Lay on D347, sealed by D220.
F23(S2)	Mixed clay, floor.		Lay on B1E, sealed by B1B. Cut into B1E, filled and sealed by F23; B1D. Cut into B1E, filled and sealed by F23; B1D. Cut into B1E, filled and sealed by B1D.
<b>ENVIRONS: MODIFICATIONS</b>			
C1002(S15, S14)	Pebbles in brown-reddish brown silt, part of north mill pond bank modification.		
C190(S14)	Reddish brown clay with few pebbles, north mill pond bank modification.		
C1053(S14)	Grey clay, part of north mill pond bank modification.		

Table M1 Mill (BAB) stratigraphic sequence, continued

NUMBER	PERIOD 6 LAYERS		INTERRELATION
	DESCRIPTION	PERIOD 6 FEATURES	
<b>MILL RACE AND SOUTH BANK: PHASE 1</b>			
(E279)(S24) (E823-E830; E381)	Baseplate of wheel trough secured in place by stakes (E823-E830). Remains of tenon (E381) in mortice of (E279).	Laid on E273, sealed by E368, E255, E261.	
(E280)(S24) (E281; E282; E455; E407; E700; E701; E702; E382)	Baseplate of wheel trough supported by timber blocks (E281; E282; E455), wedged in place by timbers (E407; E700), and by stakes (E701; E702). Remains of tenon (E382) in mortice of (E280). Stakes and posts protecting north side of wheel pit.	Laid on E273, sealed by E368, E255, E261.	
(E283; E372; E373; E375; E377; E703; E704; E708- E710; E719) (E378; E379; E417- E419; E705; E712- E717) (E720-E722)	Stakes and posts protecting south side of wheel pit.	Driven into E273, sealed by E255, E454.	
	Planks or boards discarded from construction of wheel trough.	Driven into E814, sealed by E360.	
E433	Organic silt at west end of wheel trough.	Lay in E360; E800; E273, sealed by E433, E454.	
E735(S18)(E389; E390; E392; E393; E396; E406; E459; E462-E469; E801- E805; E745-E748; E822)	Cut for north side of tail race. Contains horizontal timbers (E389; E390; E392; E393; E406), horizontal timber (E396) retained in place by stakes (E459; E462-E469; E801-E805) and vertical stakes (E745-E749; E822).	Cut into E272, filled by E454 brown clay silt around timbers.	

**Table M1 Mill (BAB) stratigraphic sequence ... Period 6, continued**

PERIOD 6 LAYERS, continued		PERIOD 6 FEATURES, continued	
NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
	INTERRELATION		INTERRELATION
E430	Greyish yellow brown clay bank of south side of tail race.	E741(S18)(E385; E397; E402; E384; E807; E386; E387; E438; E439-E441)	Cut for south side of tail race. Contains horizontal timbers (E385; E397; E402), horizontal timber (E384) supported by timber block (E807), horizontal timber (E386) supported by post (E387), and horizontal timber (E438) retained in place by stakes (E439-E441).
E846	Very dark grey gravel silt filling void left by removal of westernmost base board of tail race.		
E452(S16)	Very dark greyish brown coarse silt of tail race.		
<b>MILL RACE AND SOUTH BANK: PHASE 2</b>			
E360(S11.S12)/ D314	Dark greyish brown silt with many pebbles.	D224; D316 E370; E374	Collapsed timbers. Collapsed timbers (from wheel trough of period 67).
E423; E426(S11) E725(S12.S16)	Roof tile dumps. Dark greyish brown clay and roof tile dump.		
E730	Brown clay and pebble make-up.		
E290/E296(S12)	Reddish brown clay matrix with laid pebble surface.	E294	Slot for timber.
E298	Brown clay floor and charcoal spread of building south of wheel pit.	E295(S12); E297 (S12); E299; E1202 (S12)	Blocks of red ss. Padstones; E299 ?displaced.
E422(S11, S12)	Greyish red silt.		Cut into E360, filled with and sealed by E261. Lay on E360, sealed by E296; E261; E233.

**Table M1 M8 (BAB) stratigraphic sequence ... Period 6, continued**

NUMBER	DESCRIPTION	PERIOD 6 LAYERS, continued	
		INTERRELATION	INTERRELATION
<b>MILL BUILDING: PHASE 1</b>			
E486/E478/ D213/C198/ B123/B111	Mixed pebbles in dull reddish brown clay matrix. Pebble surface.	Above E902, E499, E753/ E492/D347, D215/C356, C358/B602/B601, B604. Below E478, E260, E246/ E472/D202/C175/B103/ B52, B94.	E763; E483; E482; E245; E240; E241; E764
B601	Pebbles in dull reddish brown clay matrix. Pebble surface.	Above B604, B612. Below B169, B111.	Hearth slab E763 with hearth E483, hearth surround E482, E245, E240, E241 and patching E764.
D215(SS)	Dull reddish brown clay with some pebbles and tile fragments.	Above D347, C356. Below D213.	Lay on E474 (period 5), sealed by E268 destruction layer.
C357	Large pebbles and ss blocks.	Lay on C356, sealed by C198.	
E473/E470	Brownish black clay with charcoal and ss fragments. Floor surface.	Both above E492. Below E471, E494/E246, E472.	
B169(S4)	Orange brown mixed clay. Floor surface.	Above B601-B612. Below B168, B52, B102.	
E471	Dull reddish brown mixed clay, pebbles and charcoal. Debris.	Above E470, E478. Below E243, E472.	
<b>MILL BUILDING: PHASE 2</b>			
E489/E476(S10)/ D346/D214/ C355/B168; D341	Tile spread in dull reddish brown clay matrix. ? Destruction debris.	Above E478/E477, E751/ D344, D215/D213/C356/ B169/D220. Below E471/ E243/D202/D220/C175/ B52; D202.	Cut into C196, C352, filled with C354 dark brown fill Lay in C195, sealed by C175, C179, C191, C185, C180. Cut into E751/D347, D559, filled with E478.
			Construction trench for C187.
			Pebble foundation of wall revision/rebuild.
			Shallow depression.



Table M1 Mill (BAB) stratigraphic sequences ... Period 6, continued

PERIOD 6 LAYERS, continued		PERIOD 6 FEATURES, continued	
NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
INTERRELATION		INTERRELATION	
C352	Pebbles in brown clay matrix. ?Surface.	E236	Pebble wall foundation.
	Above C358, C364. Below C191, C662, C356, C359.	E475	Red ss blocks. Padstone.
E425(S4)/E269/ B112/B158	Pebbles in dull reddish brown to brown clay matrix. Pebble surface.	B138; B143; B145	Red ss blocks. Padstones of east partition wall of building (and ?machinery).
	Above E490, E930, E771/ E429, E758/B647, B626/ B167. Below E247/E424, E249, E428/B52/B66, B101.	E264; E265; E266; E267	Red ss blocks of door and partition wall, with E266 oolite ?pivot base.
E477(S10)/D220	Greyish to reddish brown clay with some charcoal fragments. Clay dump.	E487	Cut for hearth E276.
E270(S4)/B102	Dark reddish brown to yellowish grey clay with little charcoal. Floor level.	E276	Pitched tile hearth.
E472	Dark reddish brown mixed clay and charcoal. Debris from hearth E276.	E488	Pit.
E494	Reddish brown silty clay and some charcoal. ?Hearth debris.	B600; B146	Red ss blocks. Displaced padstones of building/ machinery.
B153	Black to dark grey clay matrix with quantities of charcoal. Charcoal spread.		Lay on B102, sealed by B667
			Lay on E478, E472, E477, E268, sealed by E231, E233, E243. Sitting on E478, sealed by E471. Lay on B610/B169/B622, sealed by B66/B52. Lay on E470, E472, sealed by E247.
			Cut into E470. Sealed by E247, E248. Cut into hearth E277, filled with E481 dark reddish brown clay with charcoal/ss fragments.

Table M1 M1 (BAB) stratigraphic sequence ... Period 6, continued

NUMBER	DESCRIPTION	PERIOD 6 LAYERS, continued INTERRELATION	NUMBER	DESCRIPTION	PERIOD 6 FEATURES, continued INTERRELATION
E260(S4)/B103	Very dark reddish brown clay with quantities of charcoal. Floor level.	Above E499, E478, E772, E771/B123, B627, B603. Below E243, E246/B102, B52.			
<b>ENVIRONS</b>					
C1065	Dull reddish brown sandy clay spread with charcoal and green ss fragments.	Above C190. Below C1056.			
C1055	Dark reddish brown clay matrix and tile dump.	Above C1066. Below C1056.			
C1054	Bluish grey clay dump.	Above C1055, C1056. Below C178.			
D586/C1056	Dark reddish grey mixed clay with pebbles, charcoal, and ss fragments. Destruction debris.	Above D571/C1055. Below D216/C178, C186.			
C197	Reddish brown clay and pebbles. Remains of cut back bank.	Above C664. Below C185, C193.			
C684	Dark reddish brown clay and pebble patching of bank surface.	Above C1056, C664/C181. Below C176.	C176	Close packed pebble bank repair.	Above C190, sealed by C175, C172.
			C1063	Pit.	Cut into C190, filled with C1056.
			C1064	Pit.	Cut into C190, filled with C1056.
			C1069	Rubbish pit.	Cut into C1907, filled with C1068 grey brown clay.
			C1051	Shallow pit.	Cut into C1056, filled with C1052 brown clay and pebbles.
C199	Pebbles in dark reddish brown clay matrix. Dump.	Above C189. Below C185.			
C194/C192/ B154	Pebbles in reddish grey clay matrix. Pebble dump.	Above C189, C676/B155. Below C180/B101.			
B110	Mixed pebble spread.	Above B165, B154. Below B94, B101.			

M1:C1

**Table M1 M2 (BAB) stratigraphic sequence ... Period 6, continued**

NUMBER	PERIOD 6 LAYERS, continued		PERIOD 6 FEATURES, continued	
	DESCRIPTION	INTERRELATION	NUMBER	DESCRIPTION
<b>F22/F24</b>	Compact small gravel in red clay. Gravel surface.	Above A53. Below B1B.		
<b>B1D</b>	Pebbles in clay matrix. Pebble surface.	Above A53. Below B1C.	F5 F2	Ss block. Padstone of south wall of east building. Lay on B1D. Ss block and pebbles Lay on B1D. Padstone of north wall of east building.
<b>B1C</b>	Clay and slag around F1.	Above B1D. Below B1G.	F1 F10; F11	Horseshoe-shaped structure of red ss blocks. Foundation of anvil or water bosh? Lay on B1D. Ss blocks. Padstones of chimney hood. Both lay on B1D.
<b>B1G</b>	Clay with charcoal fragments and slag. Floor level.	Above B1C. Below B1B.	F7 F8	Ss block. Padstone of ?west wall of east building. Lay on B1D. Ss block. Padstone of ?west wall of east building. Lay on B1D.

**Table M1 Mill (BAB) stratigraphic sequence, continued**

NUMBER	DESCRIPTION	PERIOD 7 FEATURES		
		INTERRELATION	NUMBER	DESCRIPTION
<b>MILL RACE AND BUILDING: PHASE 1</b>				
D335/D334(S14)	Red clay silt.	Above D500/D501. Below D307/D302, D303.		
D303(S13)	Greyish brown mottled clay. Silt. Silt. of mill race.	Above D335, D336, D309. Below D207, D302, D300.		
D307(S13)	Reddish grey clay. Silt. of mill race.	Above D334. Below D301.		
E246/E243/D302	Dark grey to brown sandy clay. Silt. of mill race.	Above E270/E472, E478/D303. Below E233, E234, E251/D207, D300.		
D337; D338	Pebble collapse.	Above D334/D335. Below D307/D303.		
D341(S14,S11)	Derived bank.	Above D340. Below D300.		
D336	Silt. bank collapse.	Above D338, D335. Below D303.		
D300(S13)	Greyish brown clay.	Above D302, D303, D341.		
D301(S13)	Eroded south bank.	Below D207, D218/D219.		
D204(S13)	Greyish brown clay.	Above D221, D307. Below D207.		
E368(S16,S18,S24)	Derived north bank material. Dull reddish brown clay. Eroded bank material. Reddish brown silt with high organic content.	Above D221. Below D201, D216, D205. Above E840, E848, E435, E452, E817, E809.	(E391; E395; E398; E399; E400; E404; E405; E408; E456; E831; E458)	Collapsed timbers in mill race. Lay in E368.
E411	Grey sand silt and pebbles within E368.	Below E368.		
E366(S16)/E291	Yellowish red silt with pebbles within E368.	Above E411. Below E368.		
E431	Organic layer within E368.			
E363(S16)	Reddish brown sand silt with pebble bands. Silt.	Above E368. Below E287, E285.		
E364(S16,S12)	Pebbles in clay.	Above E368. Below E289.	(E367)	Hollowed out timber. Lay on E364, sealed by E289.
E730(S16,S12)	Brown clay and pebbles.			
E289(S12,S16)/D309	Dark greyish brown silt. Erosion from south bank.	Above E725. Below E364. Above E368, E290, E366/D335, D341. Below E287/D300, D308.	E427(S16,S4)	Cut of robbing trench of E429. Cut into E425, filled with E428/B122/B113/B126 dull reddish brown clay with pebbles and tile.

Table M1 Mill (BAB) stratigraphic sequence ... Period 7, continued

NUMBER	DESCRIPTION	PERIOD 7 LAYERS, continued INTERRELATION	NUMBER	DESCRIPTION	PERIOD 7 FEATURES, continued INTERRELATION
<b>ENVIRONS: PHASE 1</b>					
C186(S15,S14)	Reddish brown clay and small pebbles. Derived bank.	Above C1002, C1057, C190. Below C179, C177, C173, C174, C193, C185. Above C178, C186, C185. Below C175.	C353	Shallow robbing scoop of C176.	Cut into C186, filled with C174 dull reddish brown silt.
C193	Dark brown loam and large pebbles. Pebble collapse.	Above C189/B155,B154, A157, B158, B165, B645. Below C191, C175, C179, C177/B94, B66.			
C180(S6)/B101	Greyish brown clay and charcoal. Silt deposit.	Above C180, C186, C196. Below C193.			
C185	Brown sandy clay. Silting.	Above C186, C178. Below C179.			
C188	Dark greyish brown clay and pebbles. Fill of shallow scarp.	Above C180. Below C175, C179.	C184; C183; B140	Damaged ss blocks.	Lay on C191, sealed by C175.
C191	Dark brown silt. Silting west of mill building.	Above C180; C185. Below C170, C174, C175.			
C177(S14,S15); C179	Brown to dark reddish brown clay loam. Derived bank material.	Above E472/D203, D211, D213-D215, D217, D220/C177, C180, C179/B102, B103, B111, B123, B169/B126, B113, B122, B93-B95/B101. Below E248/D201/C170, C171/B51, B91, B90, B61.			
E247/D202(S4, S9)/C175(S5,S6)/B52/B66(S6)/B77(S3)/B94	Dark reddish grey to brown clay. Silting deposit.	Above D216/D204/C175, C178. Below D201, D202/C170.			
D205/D203(S13, S9)/C172	Dark reddish brown clay with pebbles. Eroded bank material.	Above D203. Below D202.			
D211	Brown clay loam and pebbles. Collapse from D556.	Above C178, C186. Below C170, C174.			
C173(S14)	Dull brown clay loam. Eroded bank material.				
<b>PHASE 2</b>					
D219(S11,S13)	Dull reddish brown clay. Derived bank material.	Above D308, D341. Below D218.			
D218	Dull reddish brown clay. Eroded bank material.	Above D219. Below D201, D210, D206.			

**Table M1 Mill (BAB) stratigraphic sequence ... Period 7, continued**

NUMBER	DESCRIPTION	PERIOD 7 LAYERS, continued	
		INTERRELATION	INTERRELATION
D210(S11)	Dark reddish brown clay and pebble spread. Eroded bank.	Above D219. Below D201, D209.	
D209(S10,S11)	Dull reddish brown clay. Siltling from bank.	Above D210. Below D201.	
E255(S10)/ D207(S13)	Dull reddish brown clay and pebbles. Fill of mill race.	Above E243, E246/D300- D307. Below E251/D201, D206; D208.	
E254	Bright reddish brown clay. Siltling.	Above E243, E246, E247. Below E251.	
E424(S16)	Greyish brown sandy silt. Siltling.	Above E425. Below E249.	
E249(S16,S4); E287(S16,S12)	Red sandy clay. Siltling.	Above E424, E425; E289, E363. Below E250, E253; E261, E286, E288.	
E253(S16); E286(S16)/ E288	Reddish brown to brown clay loam matrix with pebbles. Pebble spread.	All above E287. All below E261.	
E251(S10)/ E244/D208(S13)	Brown clay with some pebbles. Eroded bank material.	Above E254, E255/E242, E261/D207. Below E234/ E231, D201, D209.	
E261(S10)/ E242/D308	Dull brown clay. Silt of mill race.	Above E288/E286, E253/ D314. Below E244/E255/ D209, D219.	
E239(S16)/E252	Light brown clay and pebbles. Eroded bank material.	Above E242. Below E231, E232, E233.	
E250(S16)	Brown silt layer.	Above E249, E253. Below E231.	
D206(S13)	Dark reddish brown clay. Final mill race silt.	Above D204, D207. Below D201.	
E248/C171(S5, S15)/B61(S6)	Pebbles in orange clay matrix. Path.	Above E247/C175/B52, B66. Below E232, E231/ C170/B51.	
B90; B91	Red clay, some gravel. Clay patches.	Both above B52. Both below B51.	
		E410(S10)/D311	Drainage pit.
			Cut into E255/D301, filled with E365/D304 greyish brown to yellowish red clay and some pebbles.

**Table M1 Mill (BAB) stratigraphic sequence ... Period 7, continued**

NUMBER	PERIOD 7 LAYERS, continued		NUMBER	PERIOD 7 FEATURES, continued	
	DESCRIPTION	INTERRELATION		DESCRIPTION	INTERRELATION
E234	Brownish black loam - subsoil.	Above E251. Below E233, E231, D232.	E259(S10,S4)/ D306/B105(S6)/ E284(S16)	Field drain. Contained D310/E361 ceramic drain pipes.	Cut into E247/D304/B66, backfilled with E258 dark reddish brown clay. E256 orange clay /D305 yellowish red clay /B106 dark brown clay, B104 reddish brown clay. Cut into E239, filled with E293 dark reddish brown to dark greyish brown clay loam.
B1B(S2,S3)	Brown loam with ss fragments and roof tile.	Above A53, B1D. Below B1A.	E262	Field drain. Contained ceramic drain pipes E362.	backfilled with E285 yellowish red clay loam and E257 orange clay. Cut into B66, B77, filled with B62 very dark grey clay.
E233(S12,S16)	Brown clay loam.	Above E239. Below E231, E232.	B83(SG)	Shallow ditch.	Cut into D207, filled with D222 dull reddish brown clay.
E231(S10,S12,S16, S9,S13,S16)/D201/ C170(S14,S15)/ B51(S15)	Dull reddish brown to dark brown loam. Topsoil of mill area.	D204-D211/C171-C175, C177/B52, B62, B66, B77 B90, B91.	D223	Pit.	

**Table M8 Valley transect (BAE) stratigraphic sequence**

PERIOD 1 (PRE-MONASTIC) LAYERS		PERIOD 1 (PRE-MONASTIC) FEATURES	
Number	Description	Numbers	Description
	Interrelation		Interrelation
65/118(K)	Mercian Mudstone.		
340	Water-deposited pebbles.		
122(K)/143(G)/150(F)	Water-deposited gravel in brown silt.	204 (A,B)	Organic debris in silt.
158(E)/205(B)	Water-deposited bank of small pebbles in clay.		Above 205. Below 198, 210, 215/217, 216, 224, 255.
120(K)	Small pebbles in red brown to grey silt matrix.		
208(B); 210; 215/217; 216, 255(B)		253(B)	Cut into 208. Filled with 247 gravel with organic debris and 246 gravel.
		211(B)	Cut into 246. Filled with 212 grey silt. Sealed by 193/220.
		295(K)	Cut into 65/118. Filled with 294 grey brown silt.
		293(K)	Cut into 294. Filled with 292 red brown silt, 291 churned mudstone, 290 pebbles in brown silt, 289 pebbles in red brown silt.
		288(K)	Cut into 289. Filled with 287 pebbles in red brown silt. Sealed by 33.
		310/325(K)	Cut into 65/118. Filled with 306, 307, 308, pebbles in brown silt. Sealed by 309.
		333(K)	Cut into 120. Filled with 119 pebbles and silt. Sealed by 106. Within 198.
121(K); 149(F)/158(E)	Yellow grey alluvium of early pool.	203	Græen grey clay lens.
198(B)			
94(K)/128(J)/141(G)/148(F)/157(E)/187(B)	Grey to red brown alluvium of early pool.	142(G) 197 155;156(E)	Red grey clay lens. Dark grey yellow clay lens. Brown silt: fills of rivulets in 157.
140(G)	Dark red brown silt of early pool.		Within 141. Within 187.
135(G)	Gravel lens in pool silt.		In 157. Below 154.



**Table M8 Valley transect (BAE) stratigraphic sequence ... Period 1, continued**

Number	PERIOD 1 (PRE-MONASTIC) LAYERS, continued		PERIOD 1 (PRE-MONASTIC) FEATURES, continued	
	Description	Interrelation	Numbers	Description Interrelation
106(K)/93(K)/127(J)/ 133(H)/138(G)	Red brown to grey silt of early pool.	Above 113/94/128/139. Below 105; 105/102/126/ 132/137.		
224(B)	Yellow grey silt.	Above 204; 255. Below 213/ 254; 193/220.	334(B)	Cut of stream channel.
33(K)/54/63/64/70- 73; 309(K)	Pebbles in yellow to grey red clay. Flood deposit.	Above 287; 289; 308. Below 62; 279/278; 304/98.	278/279(K)	Cut of stream channel.
193/220(B)	Dull red brown alluvium.	Above 212. 213, 254. Below 190; 218; 249.	248(B)	Cut of pit.

Cut into 224. Filled with  
213/254. Sealed by 193/220.  
Cut into 33. Filled with 29/  
34 pebbles in red brown clay  
Sealed by 13/62.  
Cut into 193/220. Filled with  
245 brown clay, 225 organic,  
226 heat coloured clay.  
Sealed by 193/220.

**Table M8 Valley transect (BAE) stratigraphic sequence, continued**

REDIRECTED SOUTH STREAM COURSE, PERIODS 3 TO 7 LAYERS		REDIRECTED SOUTH STREAM COURSE, PERIODS 3 TO 7 FEATURES	
Number	Description	Numbers	Description
62/13	Pebbles and red brown silt. Upcast from 280.	280	Cut of redirected stream channel.
		331	First recut of 280.
		332	Second recut of 280.
		281	Third recut of 280.
		282	Fourth recut of 280.
		283	Fifth recut of 280.
		329	Sixth recut of 280.

Interrelation	Interrelation
Above 33/29. Below 61, 53.	Cut into 34/29, 33. Filled with 276/28, grey to brown silt.
	Cut into 276/28. Filled with 275, yellow to red brown silt and pebbles.
	Cut into 275. Filled with 274 red brown silt and pebbles.
	Cut into 274. Filled with 284 pebbles in red brown silt.
	Cut into 284. Filled with 271 brown silts and 273 pebbles in red brown silt and 272, grey brown silt. Sealed by 22, pebbles and gravel in silt (7period 4 or later).
	Cut into 22. Filled with 277 grey silt. Sealed by 26, pebbles in red brown silt (7period 5 to 6), 18/23, pebbles in yellow red silts, 16, yellow red silt, 17, red brown silt, 7/8 red brown silt with pebbles.
	Cut into 7/8, 18/23, 26. Filled with 19/25/14, 286 pebbles in red brown silt, 285 red brown silt, 27 red grey silt, 24, 15 pebbles in yellow red silt. Sealed by 9; 41/61/86.

**Table M8 Valley transect (BAE) stratigraphic sequence, continued**

Number	PERIODS 3/4 LAYERS Description	Interrelation	Numbers	PERIODS 3/4 FEATURES Description	Interrelation
<b>CONSTRUCTION OF SOUTH MILL POND BANK</b>					
108	Brown clay surface.	Above 106. Below 107.	324(K) 107 111	Cut of overflow channel. Pebble surface. Slot. To drain 1077	Cut into 106. Filled with 312, grey yellow brown silt. Laid on 108. Sealed by 105. Cut in 107/108. Filled with 109. Incorporated 110, timber. Sealed by 105. Cut into 93/127/133/138/148/157/187. Filled with 90/126/132/137/147/154/186.
102;105;96(K)	Red brown clay dumped to make south mill pond bank.	Above 106, 312, 109. Below 90, 91, 95.	297, 300; 318 (K)	Stakes in north slope of bank.	Driven into 96. Sealed by 84, 90, 88.
<b>CONSTRUCTION OF NORTH MILL POND BANK</b>					
18 /265; 236; 201/ 238(C); 172	Red brown to brown grey clay dumped to make north mill pond bank.	Above 179; 180/207; 181/199; 209; 200. Below 168/259	269(177/227 228;229;230 232;233;268) 237(C)	Cut for timber drain below north bank (with timbers). Cut of overflow channel.	Cut through 187. Filled with 270, 221 yellow grey clay. Sealed by 189/265. Cut through 193/220. Silted with 214/264; 202; 239; 266; 263; 267; 262; 196.
168/259	Pebble capping of bank.	Above 172. Below 163/164/165/166/173/174/258; 183	181, 199, 200, 209 180, 179	Wooden internal revetment of bank. Wood stakes.	Laid/driven in 187. Sealed by 189/265; 236; 201/238. Driven into 187. Sealed by 189/265.
			218(B) 195(B)	Pebble capping of overflow channel (upcast from 237). Cut of watercourse.	Laid on 193/220. Sealed by 196 Cut into 193/220. Filled with 223, 192 grey yellow silt. 222, 191 red brown silt and sand. Cut into 193/220. Filled with 245, 244, 243, red brown clays.
			242	Cut of north precinct boundary ditch.	

**Table M8 Valley transect (BAE) stratigraphic sequence ... Periods 3/4, continued**

PERIODS 3/4 LAYERS, continued		PERIODS 3/4 FEATURES, continued	
Number	Description	Numbers	Description
USE OF SOUTH MILL POND BANK		Interrelation	
53(K) 43/44(K)	Loose gravel dump. Pebble metalling.	304/98(113/ 114; 313; 317) (K) 328 (K)  314, 315	First recut of south overflow channel with timber revetment. Second recut of overflow channel. Wood stake repair to over- flow channel revetment.  Cut into 312. Timbers packed with 311, red brown silt, and 316 rotted wood. Cut into 311. Filled with silts 117, 116. Driven into 117. sealed by 116, brown grey silt.
USE OF NORTH MILL POND BANK			
214/264, 202 (C,D) 266; 239 196(C) 263;262 (C)	Yellow grey silt with pebbles in north overflow channel. Grey silt of north overflow.  Brown to yellow grey silt of north overflow. Grey and brown silts blocking outflow of drain.	235/261 (234, 231)	Cut of pit to repair head of drain. 231 a replacement bung. 234 part of timber lining trapped in 219.  Cut into 186, 168/259. Silted up with grey silt 219. Sealed by 260.
90(K)/126(J)/132(H)/ 137(G)/147(F)/154(E)/ 186(C)	Grey to yellow grey silt of first mill pond.	188/241  177	Scoured cut in pond silts.  Posthole.  Cut in 186. Filled with 185, red brown silt and 167, grey coarse silt. Sealed by 163. Cut into 172. Filled and sealed by 173.

**Table M8 Valley transect (BAE) stratigraphic sequence, continued**

Number	PERIODS 5/6 LAYERS Description	Interrelation	Numbers	PERIODS 5/6 FEATURES Description	Interrelation
<b>CONSTRUCTION OF SOUTH MILL POND BANK</b>					
45/51(K)	Brown clay dump over south side of south overflow.	Above 116, 43/44. Below 115, 104.	112, 103	Wood plank laid during construction of bank.	Laid on 311. Sealed by 95.
95; 91; 84 (K)	Red brown clay dumped over south bank.	Above 102, 96, 112. Below 305, 101, 327.	305(K)	Recut of south overflow.	Cut in 45/51, 95. Filled with 115, gravel.
			101(K)	Red sandstone reinforcement of south bank.	Laid on 84. Sealed by 86, 88.
			327(K)	Cut of second mill pond.	Cut in 90/126/132/137/147/154. Filled with brown silts 87/125/131/136/146/153.
<b>CONSTRUCTION OF NORTH MILL POND BANK</b>					
260(D)	Red brown clay dumped over head of drain in north bank.	Above 219. Below 163.			
184(C,D)	Grey clay dumped over north overflow.	Above 196. Below 183,190.			
183; 163/164/165/ 166/173/174/258(C,D)	Brown to orange clay dumped over north bank.	Above 184, 260. Below 162/169/257.	175/176	Wood fragments.	Within 173.
162/169/257/170/171 (C, D)	Pebble capping on north bank.	Above 163/164/165/166/ 173/174/258; 183. Below 161	171	?Posthole.	Cut in 169. Filled with 170, tile fragments.
<b>USE</b>					
87(K)/125(J)/131(H)/ 136(G)/146(F)/ 153(E,D)	Red grey to brown silt of second mill pond.	Above 327. Below 82; 88/ 124/130/135/145/152.			
115(K)	Silts of southern overflow.	Above 116. Below 104.			
104; 302; 303(K)	Silts of southern overflow.	Above 115. Below 92/97.			
92/97	Grey silts and wood fragments in southern overflow.	Above 303. Below 319.			

**Table M8 Valley transect (BAE) stratigraphic sequence, continued**

Number	PERIOD 7 LAYERS		Interrelation	Numbers	PERIOD 7 FEATURES	
	Description	Interrelation			Description	Interrelation
319(K) 320; 321; 322(K) 323(K)	Brown clay in south overflow. Brown clays eroded from north face of south overflow. Brown clay silt of south overflow.	Above 92/97. Below 320. Above 319. Sealed by 323. Above 319; 92/97. Sealed by 86. Above 87. Below 82.				
86; 89; 83(K) 9; 11/41/61; 86(K)	Clay and pebbles eroded from north face of south bank. Red brown silt and pebbles. Flood deposit.	Above 286; 15/43/44; 323. Below 11, 5/6, 1, 42, 60, 85.		20(K)	Land drain.	Cut into 9, 11. Filled with 21, 10, 3, 2, brown clay. Sealed by 1. Cut into 130/86. Sealed by 129, 85.
82/124(J)/130(H)/ 135(G)/145(F)/152(E) 4, 5/6(K) 190; 249/192	Red brown silts. Flood deposit sealing mill pond. Red brown clay slumped from south side of valley. Grey brown silts. Flood deposit.	Above 83/125/131/136/146/153. Below 85/123/129/134/144/151/161. Above 9. Below 1. Above 184. Below 194.		81/160(H)  191 194(B) 250(A)  335(B)	Land drain.  Final silts of 195. Gravel. Drain.  Drain.	
1/60(K)/85/123(J)/ 129(H)/134(G)/144(F) 151(E)/161(C, D)	Topsail.	Above 4, 2/81/82/124/ 160/135/145/152/257/ 194/252/191/243.				Above 192. Sealed by 161. Over 190/249. Sealed by 161. Cut into 190/249. Filled with 252, gravel and 251, clay. Cut into 190/249. Filled with silts 336. Sealed by 161.

**The drain fill analyses (BAE 267/233/221)  
by L Biek, C Bloomfield, and J Evans**

**General examination (CB)**

**Sample BAE 267: main fill**

Loss on igniting(105°-dry) material to 600°C:	14.3%	= organic matter		
Loss on treatment with H <sub>2</sub> O <sub>2</sub> :	18.5%	= organic matter + much Fe & Al:	to judge by colour and acidity of supernatant liquid	vigorous reaction; residue white
<b>Mechanical analysis of residue:</b>				
	>63 μm	0.30%	= fine sand	
	>2 μm	17.00%	= silt	
	<2 μm	82.70%	= clay	
<b>Sulphur:</b>				
	Total S after H <sub>2</sub> O <sub>2</sub> treatment:		= 3.08% S	
	HCl-soluble sulphate:	2.52% as SO <sub>4</sub>	= 0.84% S	
	Oxidisable S:	3.08 - 0.84	= 2.24% S	= largely inorganic ie presumably pyrite
<b>Phosphorus:</b>				
		530 ppm	= within normal range for soil	(ie untreated + fertiliser)

**Sample BAE 233/221: concretion, lower east side of drain**

Ignition:		black-->>buff		
H <sub>2</sub> O <sub>2</sub> treatment:	vigorous reaction :	residue buff		
<b>Manganese:</b>				
	Total Mn:	0.06%	=about normal for soil; does not account for black colour	= ?soil cemented by thoroughly incorporated organic matter

## The drain fill analyses (BAE 267/233/221), continued

### Sample BAE 233/LD: concretion below drain

Manganese: major component+Fe =largely manganiferous Fe concretions in clay

### Samples BAE 233/01-08: spot samples from various surfaces of emptied drain

White 'waxy' material in 01-03,05&07

Heat: melts & burns no apparent residue

Acetone: )readily  
CCl<sub>4</sub>: )soluble

### Infrared spectroscopy (JE)

waxes	negative	
fatty acids	negative	
triglycerides	negative	
?soap	?possible:	part-inorganic

Black material:  
in sample 06: Mn+Fe much concretionary material cf 233/LD

in others: no / trace Mn

all 8 samples otherwise largely similar to 233/221



## **The drain fill analyses (BAE 267/233/221), continued**

### **Comment (LB)**

The results demonstrate the fine texture of the deposit with only a small trace of fine sand. They also indicate a substantial iron component despite the deceptively light colour. The presence of significant amounts of inorganic sulphur confirms the S-level in the general site clay deduced from the condition of the waterlogged metal finds. Taken with the elevated organic matter content, and the possible ?soap suggested by IR spectroscopy, it also offers a possible mechanism for the production of the highly flocculate state of this material. Although more work would clearly be needed to define and confirm the parameters involved here, it could in the circumstances be suggested that the deposit, as found, was more likely to be the result of vertical seepage through/from overlying strata, over a long period, rather than of horizontal silting along the drain.

Similar deposits, in a buried stone conduit, were examined at Wells (Rodwell forthcoming) and are reported from caves in Derbyshire (Bramwell 1964, 8ff) where they are said to be due to percolation. Although manifestly not sealed, such deposits, too, have clearly been removed from free exchange with surface reactions for considerable periods. Under such conditions one might expect the establishment of a kind of 'mobile equilibrium', gravitating gradually towards an ultimately stable state in the way that eg septaria arise.

**Table M10 Tail race (BAH) stratigraphic sequence**

Number	LAYERS		Interrelation	Numbers	FEATURES		Interrelation
	Description				Description		
<b>PERIODS 1 TO 2</b>							
16	Water-laid pebbles.		Below 13, 22.				
13	Grey silts.		Above 16. Below 6.				
6	Red brown silts.		Above 13. Below 3, 5, and 8.				
<b>?PERIOD 3</b>							
				15	Cut for tail race.		Cut into 6.
				22	Grey brown organic silt.		Above 16. Below 18, 20, 21.
				18	Black organic silt.		Above 22. Below 21.
				21	Red brown sand.		Above 18, 22. Below 20.
				20	Red brown silt.		Above 21, 22. Below 11, 17, 19.
				19	Black organic silt.		Above 20. Below 11, 17.
				17	Red brown silt and pebbles.		Above 19, 20. Below 11.
<b>?PERIOD 4</b>							
				11	Red brown organic silt.		Above 17, 19, 20. Below 10, 12.
				12	Red brown silt.		Above 11. Below 10.
				10	Red brown sand and pebbles.		Above 11, 12. Below 6, 9.
<b>?PERIOD 5</b>							
				14	Cut for tail race.		Cut into 6.
				9	Red brown silt and sand.		Above 6, 10, 12. Below 5.
				5	Red brown silt and pebbles.		Above 6, 9. Below 2, 3, 4, 7, 8.
8	Grey brown silt.		Above 6, 5. Below 7.	3	Pebbles in red brown matrix.		Above 6, 5. Below 2.
				4	Pebbles in brown matrix.		Above 5. Below 2.
				7	Pebbles in red brown matrix.		Above 5, 8. Below 2.
2	Brown silts.		Above 3, 4, 5, 6, 7. Below 1.				
1	Turf and topsoil.		Above 2.				

**Table M11 Tail race (BAJ) stratigraphic sequence**

Number	LAYERS Description	Interrelation	Numbers	FEATURES Description	Interrelation
PERIODS 1 TO 2					
10	Water-laid pebbles.	Below 16, 9, 15.	9	Pebbles in red brown silt.	Above 10. Below 5, 8.
5	Grey silts.	Above 9. Below 8, 2.	20	Stream channel.	Cut into 10, 16. Sealed by 12.
16	Grey silts.	Above 10. Below 8, 12, 14, 15.	15	Pebbles in grey silt.	Above 16, 10. Below 14.
			14	Red brown silt.	Above 16, 15. Below 12, 13.
			PERIODS 3 TO 4		
			19	Tail race.	Cut into 9, 16. Sealed by 2.
			17	Wooden stakes.	Driven into 16
			12	Pebbles in grey silt - upcast from 20.	Above 16, 14. Below 11, 13.
			11	Pebbles in brown silt - upcast from 20.	Above 12. Below 2, 13, 6.
			8	Pebbles in grey silt. Fill of 20	Above 5, 9, 16. Below 7, 4.
			7	Grey organic silt. Fill of 20.	Above 8, 12. Below 6.
			PERIODS 5 TO 6		
			18	Tail race.	Cut into 6, 5. Sealed by 2.
			4	Red brown organic silt. Fill of 18.	Above 6, 8. Below 3.
			3	Grey silt. Fill of 18.	Above 4, 6. Below 2.
2	Red brown silt.	Above 5, 3, 6, 11, 13. Below 1.			
1	Turf and topsoil.	Above 2.			

**Table M13 Mill (BAB): summary of coal by period and by type of context**

<b>Period</b>	<b>Type of context</b>	<b>Number</b>	<b>Weight</b>
4	Fill of wall slot E962	1	0.023kg
5	Gravel surfaces in and around buildings	33	0.202kg
6	Wall foundation	1	0.009kg
7	Silts, flood deposits	28	0.490kg
	Turf and topsoil	12	0.081kg
<b>Total</b>		<b>75</b>	<b>0.805kg</b>

**Table M14 Mill (BAB): summary of charcoal by period and by type of context**

<b>Period</b>	<b>Type of context</b>	<b>Weight</b>
4	Fill of bypass channel (A156)	0.185kg
5	-----	
6	Floor of last mill (B102)	0.014kg
7	Silts, flood deposits	0.315kg
<b>Total</b>		<b>0.514kg</b>

## **Fired clay (FC) by G G Astill and S M Wright**

***Kiln furniture*** Figures 59 and 60; Tables 15 and 16

Technical comments are by Leo Biek.

### **Voussoirs**

The following tiles were mainly grey to grey-red right through and appear to form a distinct group comprising two types: rectangular with chamfered corners and semicircular.

- FC 143 Incomplete tile, tapering in thickness with one chamfered corner at the thinner end (the other is missing). Buff-orange margins with a pale grey core. The smooth surface has a drip of a mixed apple-green-brown glaze near the chamfered corner. An area appearing pink to orange under and along the edge of the bubbly glaze is due to iron oxides in the fired tile and suggests that the glaze did not form on it but dripped from another source which was hotter at that time. NAA = cluster 17. Fig 59. 200+ l, 170+ w, 35-40 th. (E939, per 4)
- FC 49 Complete tile, tapering in thickness, with two chamfered corners at thinner end, with applied (bonding) clay (2-3 th) on both sanded and smooth faces. NAA = cluster 3. Fig 59. 146 l, 158 w, 32-42 th. (E474, per 5)
- FC 47 Incomplete, roughly square, tile tapering in thickness with two chamfered corners at the thinner end. A thin (cracked) bonding layer of clay is present on the smooth face but has left no trace where it has apparently flaked off, which could suggest it had also been present on the sanded face (as FC 49). 146+ l, 110 w, 37-40 th (E289, per 7, phase 1)
- FC 141 Corner (slightly rounded) fragment with chamfer, similar to FC 49; probably tapered. Drip of clear glaze on the only surviving edge and applied clay layer on smooth surface. Fig 59. 103+ l, 65+ w, 32 th. (B113, per 7, phase 1)
- FC 174 Incomplete, ?semi-circular tile; traces of applied clay on both surfaces. Fig 59. 145+ l, 100+ w, 45-50 th. (E814, per 5)
- FC 140 ?Semi-circular tile fragment with applied clay on the only surviving surface. NAA = cluster 1. 70+ l, 82+ w, 40+ th. (B114, per 6)

## **Fired clay ... Kiln furniture, continued**

- FC 142      Corner fragment; applied clay layer on smooth surface. NAA = cluster 3. 115+ l, 92+ w, 35-40 th. (E755, per 5)
- FC 171      Small fragment. 80+l., 60+ w, 35-40 th. (A156, per 4)
- FC 172      Small fragment. 98+ l, 61+ w, 45 th. (A156, per 4)
- FC 170      Small fragment. 58+ l, 31+ w, 32-39 th. (C1056, per 6)

### **'Voussoir' type**

The following are often too fragmented to be classified as voussoirs, but they are sufficiently similar in fabric and appearance to FC 143 and others of the above group to regard them as possible voussoirs.

- FC 189      Very thick ?voussoir. Apparently tapering but at one point there is a sudden reduction in thickness (occurring on both faces). No edges or applied clay are present. Mottled orange-buff-grey colour. Fig 59. 110+ l, 80+ w, 42-62 th. (A156, per 4)
- FC 173      Corner fragment, tapering in thickness, with one slanting and one straight edge. Orange margins with a light grey core. Dark staining or discolouration on a patch of the core is possibly micro-panning. 177+ l, 73+ w, 30-34 th. (E814, per.5)
- FC 176      Corner fragment. Buff-orange with grey core. 72+ l, 45+ w, 40 th. (E800, per 5)
- FC 181      Fragment with similar fabric to the voussoirs. Buff-orange to grey. 50+ l, 30+ w, 55+ th. (E814, per 5)
- FC 35      Corner fragment with dark grey and red patches on the sanded surface. Buff-orange throughout; similar fabric to the voussoirs. 80+ l, 65+ w, 42 th. (E286, per 7, phase 2)
- FC 46      Corner fragment. Buff/orange throughout. 50+ l, 43+ w, 45 th. (E368, per 7, phase 1)
- FC 149      Buckled and overfired (dark grey), thick. Rectangular tile of a similar fabric to the voussoirs. It has a dark brown lead glaze (identified at English Heritage Laboratory) over the smooth surface which is cracked and has a lump of clay (which is also glazed) fused to the surface near to one edge. The presence of this glaze appears to be accidental; the colour indicates iron in a partly reduced state. NAA = cluster 3. 127+ l, 93+ w, 45-63 th. (E255, per 7, phase 2)

## **Fired clay ... Kiln furniture, continued**

- FC 150 Fragment with one edge and one surface. Orange throughout; similar fabric to the voussoirs. 65+ l, 50+ w, 27+ th. (E239, per 7, phase 2)
- FC 151 Corner fragment. Overfired and with the same colour glaze on one surface as FC 149 which has trickled down on to the other surface. NAA = cluster 3. 46+ l., 45+ w., 35 th. (C180, per 7, phase 1)
- FC 160 Large corner fragment. Orange throughout. 190+ l, 140+ w, 40 th. (B52, per 7, phase 1)
- FC 161 Corner fragment. Fired slightly darker grey in patches and with a darker grey core than the others in this group. Streaks of a ferruginous substance (rather like an iron pan) stain parts of the smooth surface. This has probably been caused by localised drainage impedance in the tile and/or ground. 105+ l, 73+ w, 38 th. (B66, per 7, phase 1)
- FC 178 Fragment with a slightly rounded corner. Buff-orange. The sanded surface has a rectangular depression. 115+ l, 80 w, 40 th. (B1104, per 4)
- FC 184 Five fragments, two of which join. Buff margin with a light grey core. Largest piece 50+ l, 26+ w, 48 th. (D575, per 4)
- FC 169 Small fragment. Grey-buff throughout. 60+ l, 26+ w, 40 th. (A53, per 5)
- FC 177 Fragment. Buff-pink. 103+ l, 82+ w, 40 th. (E836, per 5)
- FC 164 Fragment with a crease along the sanded face caused in manufacture. Orange throughout. 56+ l, 51+ w, 40 th. (E423, per 6)
- FC 175 Small fragment with one edge (straight). Orange margins with light grey core (cf FC 173). 70+ l, 68+ w, 30 th. (E730, per 6)
- FC 168 Fragment with one edge; two small drips of yellowish glaze on the smooth face. Buff-orange throughout. 91+ l, 80+ w, 36 th. (D204, per 7, phase 1)

## **Square structural 'tiles'**

These tiles have bevelled edges and are red to grey and of a similar fabric to the voussoirs.

## **Fired clay ... Kiln furniture: continued**

- FC 144 Near complete tile (in two pieces) with applied clay on the smooth surface. A smoothed white area shows bright turquoise blue flecks, also present randomly on some edges. See Biek, 'The bright turquoise flecks', for results of X-ray diffraction analysis. 120 l, 118 w, 38 th. (E755, per 5)
- FC 145 Near complete tile. A patch of pan-like staining on the tile may be due to pedo-factors (cf FC 161 and FC 146). Fig 59. 115 l, 115 w, 38 th. (E755, per 5)

## **Rectangular structural 'tiles'/'bricks'**

There are two types, the first with cut-out corners. Two of the three tiles below are buff to orange, the third (FC 148) is an overfired tile and is dark grey. A knife has been used to cut out the corners leaving a roughly square space; when laid side by side and end to end these spaces may have served as vents.

- FC 146 Fragment, one end with cut-out corners. There is a pederived 'manganese oxide' deposit over some of the tile. Turquoise flecks were also seen. NAA = cluster 3. Fig 59. 223+ l, 120+ w, 40 th. (E755, per 5)
- FC 147 Half of tile with cut-out corners; traces of applied clay (for bonding and of a lighter colour) on the edges of the tile. NAA = cluster 14. Fig 59. 132+ l, 120+ w, 42 th. (E755, per 5)
- FC 148 Incomplete, distorted and overfired tile (in three pieces) with four cut-out corners, one of which has some extra clay adhering to it (of the same type ) which appears to be a mistake and may have occurred during firing. NAA = cluster 3. Fig 59. 160+ l, 115+ w, 40-53 th. (E755, per 5)

The second type is without cut-out corners but with indications that the 'tiles'/'bricks' supported tiles during firing.

- FC 193 Two fragments which form a third of a 'brick' with two corners; buff-grey throughout. Speckles of yellow-green to dark green glaze over the end and dark green glaze has dripped on to the side of the brick around the shape of a tile which must have stood on the top of the 'brick' (tile width: 15). Turquoise-blue flecks present. ?Possibly kiln furniture. NAA = cluster 3. 100+ l, 120 w, 68 th. (D214, per 6)



## **Fired clay ... Kiln furniture, continued**

- FC 194 Half of a 'brick' with two corners; orange-buff with some greyish patches on both the exterior and interior. The four lines of green glaze which run obliquely across one edge of the 'brick' (20-30 w) may indicate that the 'brick' supported glazed tiles during firing. Turquoise-blue flecks present. 133+ l, 118 w, 66 th. (C187, per 6)
- FC 195 Fragment of 'brick'; grey-brown throughout, one corner with yellow-brown drips of glaze on the smooth surface and speckles of the same glaze on one edge. ?Possible kiln furniture. 56+ l, 30+ w, 60 th. (E368, per 7, phase 1)

### **?Kiln floor**

- FC 180 Twenty fragments (not joining). Similar fabric to FC 152. Orange throughout. Largest piece 85+ l, 60+ w, 32 th. (E775, per 4)
- FC 185 Fragment; similar fabric to FC 186. Buff throughout. 53+ l, 35+ w, 45 th. (E755, per 5)
- FC 186 Thick tile fragment (in nine pieces), ?part of the kiln floor. One edge has a chamfered corner. Buff-brown with traces of a calcareous layer, possibly a limewash or caused by contact with ash. Similar fabric to FC 185. Fig 59. 180+ l, 160+ w, 70 th. (E474, per 5)
- FC 152 Thick tile (possibly part of a kiln floor) with no edges. Similar fabric to FC 180. Buff/orange throughout. 130+ l, 94+ w, 52 th. (E268, per 6)

### **Roof tile type?, probably used in a kiln**

- FC 155 Fragment, knife-trimmed in order to create a taper. Colour as FC 154. Roof tile fabric 1. 101+ l, 52+ w, 12-20 th. (B649, per 4)
- FC 153 Fragment (in two pieces), tapering in thickness, with three edges, one of which formed part of a hole. Buff-brown. Roof tile fabric 1. Fig 59. 75+ l, 72+ w, 14-19 th. (E368, per 7, phase 1)

## **Fired clay ... Kiln furniture, continued**

**Miscellaneous rectangular or square 'tile'/'brick' or fragments of general floor tile type, probably used in a kiln**

The following are tiles which could be classified as floor tiles or of floor tile type but differ in terms of both size and form from most recovered from BAB. Most are buff on the exterior and have a red-orange core.

- FC 154      Fragment of hard fired tile; quite thick and apparently buckled. Buff-brown margins with a grey core. 87+ l, 31+ w, 26-32 th. (B649, per 4)
- FC 167      Small fragment which is mottled buff to yellow-orange to orange. 62+ l, 36+ w, 30 th. (A155, per 4)
- FC 179      Corner fragment. Similar to FC 187 (below) in fabric and firing. Buff throughout. 80+ l, 36+ w, 30 th. (E734, per 4)
- FC 157      Large fragment (in two pieces) with one complete edge. The sanded surface is 'manganese oxide' stained and shows turquoise-blue flecks and the core of the tile is black, red and ash coloured. Fig 60. 253+ l, 165+ w, 40 th. (E755, per 5)
- FC 159      Fragment with panned patches; similar to FC 162 (below). 295 l, 114+ w, 40 th. (E755, per 5)
- FC 162      Large fragment with two corners; buff margins with a red-orange core. Both surfaces have manganese oxide deposits and occasional white patches which are presumably due to water-deposited calcium salts. Turquoise-blue flecks are also present. Fig 60. 300 l, 130+ w, 40 th. (E755, per 5)
- FC 163      Large corner fragment with one slightly rounded (almost bevelled) edge; buff-orange throughout. The sanded face has traces of a creamy smoothed layer and incipient ashy vitrification. On both faces there are dark manganese and ferruginous stainings similar to FC 157, FC 159, and FC 162 (above). 185+ l, 160+ w, 50 th. (E755, per 5)
- FC 187      Fragment with a finger-shaped depression on the sanded surface (10 d, 22 w). Similar in fabric and form to FC 179 (above). Buff throughout. 68+ l, 66+ w, 45 th. (E817, per 5)
- FC 39      Corner fragment; one surface has a raised band along one edge (26 w). Orange throughout. There is a sooty deposit over some of the tile, similar to FC 162. 92+ l, 70+ w, 25-8 th. (A50, per 7, phase 2)

## **Fired clay ... Kiln furniture, continued**

- FC 156 Corner fragment with two edges, one of which is creased (caused during manufacture). Orange throughout. 56+ l, 36+ w, 30 th. (E239, per 7, phase 2)
- FC 158 Waterworn tile fragment. Orange throughout. 90+ l, 85+ w, 35 th. (E368, per 7, phase 1)
- FC 182 Fragment. The smooth surface is almost pink and very smooth with no gritty texture. Orange margins with a light grey core. 62+ l, 48+ w, 31 th. (E368, per 7, phase 1)
- FC 183 Fragment; part of one face present and a small drip of apple green glaze on one edge. Orange throughout. 59+ l, 31+ w, 54 th. (E368, per 7, phase 1)
- FC 188 Corner fragment with one edge partially blackened. Buff throughout. 35+ l, 35+ w, 60 th. (E368, per 7, phase 1)
- FC 165 Small fragment; similar in texture to FC 166 (below). Orange-brown mottled. 56+ l, 32+ w, 15+ th. (D211, per 7, phase 1)
- FC 166 Small fragment; similar to FC 165. Orange core with buff-brown margins. 46+ l, 22+ w, 22+ th. (D211, per 7, phase 1)

## **Valley transect (BAE)**

- FC 77 ?Kiln furniture fragment; grey throughout with one original edge knife-trimmed to produce a series of small steps. 85+ l, 40+ w, 43 th. (117, per 4)
- FC 76 ?Kiln furniture fragment; orange-brown throughout with no original edges. 44+ l, 35+ w, 23+ th. (92, per 5-6)
- FC 78 ?Kiln furniture fragment; orange margins, grey core with no original edges. 88+ l, 75+ w, 38+ th. (18, per 5-6)

## **?Oven material**

- FC 190 Oven brick fragment; orange-buff throughout with one definite and one possible edge, and one hole (32 d, dia at top 17). 65+ l, 58+ w, 58 th. (B109, per 5)
- FC 192 Half of a brick; orange-yellow-grey margin and a grey core, clay packing lines visible. 140+ l, 115 w, 70 th. (E476, per 6)
- FC 197 Brick fragment; brown margin and grey core. 75+ l, 50+ w, 52 th. (E476, per 6)
- FC 191 Corner fragment; orange-buff margin and a brown/red core. 85+ l, 55+ w, 60 th. (D207, per 7, phase 2)

## **Fired clay ... ?Oven material, continued**

**FC 196** Oven brick fragment, orange-buff throughout, with a hole (17 d, 22 dia at top) in top (sanded) surface. ?Sooting on smooth face. 102 l, 90 w, 54 th. (E289, per 7, phase 1)

### **Valley transect (BAE)**

**FC 72** Oven brick fragment; orange throughout with three original edges including two corners with four square holes in top surface (20-5 d; sides of square at top 15-16). Fig 60. 135+ l, 190 w, 53 th. (95, per 5-6)

**FC 73** Oven brick fragment; orange throughout with three original edges including two corners and a complete, knife-trimmed, width; four circular holes in top surface (40-5 d, 17-19 dia at top). Fig 60. 150+ l, 195 w, 54 th. (95, per 5-6)

**FC 74** Oven brick fragment; orange-brown margins, light grey core with a corner with one hole in top surface (31 d, 25 dia at top) 160+ l, 125+ w, 54 th. (95, per 5-6)

**FC 75** Oven brick fragment; orange margins with grey core and a corner with one hole (31 d, 19 dia at top) and a groove running parallel to one side, both in the top surface. Fig 60. 130+ l, 120+ w, 55 th. (87, per 5-6)

**FC 70** Oven brick fragment; orange-brown margins and grey core, one original edge with one circular hole in top surface (25 d, 20 dia at top). 132+ l, 120+ w, 38 th. (82, per 7)

**Clay tobacco pipes (CP) by P Cannon**  
Not illustrated

**BAB**

- CP 15 Two joining thin bowl fragments, plain. (B52, per 7)  
CP 18 Thick bowl fragment, plain. (A117, per 4 - intrusive)  
CP 20 Stem fragment, mouthpiece. (C172, per 7)  
CP 21 Seven joining bowl fragments with splayed base and rouletting around surviving part of rim. Probably Broseley type 2B, c.1660-1680 (Atkinson 1975, 25) (D202, per 7)  
CP 2 Incomplete bowl with thick walls and part of a large splayed base, with an incomplete and poorly-impressed spoked-wheel mark. Possibly Broseley type 3A, c. 1670-1680 (Atkinson 1975, 25). Similar marks have been found on Broseley type 3 pipes from Montgomery Castle, Gloucester, and Hereford (Oswald 1984, 218) (D207, per 7)  
CP 23 Stem fragment. (E244, per 7)  
CP 24 Two joining stem fragments, join bowl CP 25 (E244, per 7)  
CP 25 Plain bowl, joins stem fragments CP 24, c. 1820-1860 (E244, per 7)  
CP 26 Stem fragment. (E248, per 7)  
CP 27 Stem fragment. (E251, per 7)  
CP 28 Two joining stem fragments, mouthpiece (E251, per 7)  
CP 29 Stem fragment. (E262, per 7)  
CP 30 Two joining bowl fragments. (C179, per 7)  
CP 31 Nearly complete bowl with rouletting around rim and large splayed base with gauntlet mark on head. Probably Broseley type 3A, c. 1670-1680 (Atkinson 1975, 25). True 'gauntlets' were made in Amesbury, Wiltshire, by various members of the Gauntlet family. These were of such quality that they commanded a higher price and the mark was imitated extensively, including at Broseley (Atkinson 1975, 50-2, 64, 72, 74-5, 81, 85, 90-1). (E255, per 7)  
CP 32 Three joining bowl fragments, plain with spur attached, c. 1820-1860. (D222, per 7)

## Clay tobacco pipes (CP), continued

CP 33 Incomplete bowl with pointed spur attached. Marked incuse with serif lettering on back of bowl in oval-shaped arrangement:

[J.RUS]SELL./[.WO]RCESTER

John Russell was working in Worcester c 1822-1841 (Gault and Alvey 1979, 410). (D207, per 7)

CP 34 Incomplete bowl with pointed spur attached, c 1800-1840 (D207, per 7)

CP 35 Incomplete bowl with pointed spur attached, c 1800-1840 (D207, per 7)

CP 36 Stem fragment. (E255, per 7)

CP 37 Bowl fragment. (D207, per 7)

CP 38 Six joining bowl fragments with small sharply splayed base and rouletting around rim. Coventry type c 1660-1680. Similar to a group of Coventry type pipes from Temple Balsall (Oswald 1984, 216-19). (D335, per 7)

## BAE

CP 60 Two joining stem fragments marked incuse along the stem in two lines of sans-serif lettering:

[R.SMITHEM]AN & C<sup>o</sup>

[BROSELE]Y 11

Roland Smitheman (sometimes given as Smithman), was operating his premises c 1885-1920. The number at the end of the mark acted as a code so that every pipe produced could be attributed to a particular worker in the factory (Atkinson 1975, 81) (1, per 7)

CP 61 Stem fragment. (12, per 7)

CP 62 Stem fragment. (1, per 7)

## **Pottery by V Nailor**

### ***Appendix: Comparison and cross-reference with the previously published provisional fabric type series***

The provisional fabric type series established from examination of the small amount of material from the church and minor excavations in the precinct (Wright 1976b, 186-90; Watts and Rahtz 1983, 169-71) contrasts with the BAB, BAE, and BAH material in both the type and date range of the pottery represented.

There was a considerable proportion of red-brown sandy, cooking-vessel fabrics from the mill and relatively little later medieval material, such as the fifteenth- and sixteenth-century, and indeed earlier (viz Stamford), fine wares which characterise the pottery from the church. For example, Fabric M 'Cistercian' ware is prominent in the church assemblage, but rare (one sherd) from the mill site.

Direct comparison of the two fabric series is difficult as the assemblages reflect differing characteristics. A summary of the points of cross-reference are provided below.

**Group A** Sandy fabrics, unglazed, sub-divisions A1, A2, A4, A5  
A1, A2 and A4 all fit within the mill classification of reduced sandy ware. A5 is comparable with the hard, grey sandy fabric F38.  
A1 includes examples of more than one fabric division for the mill site.  
A2 broadly corresponds with F25, red-brown sandy fabric.  
A4 with F20, red-brown sandy fabric.  
A5 with F38 hard, grey sandy fabric.

#### **Groups B, C, D**

The fabric divisions of B, C, and D relate to jug fabrics. Group B is sandy fabrics, group C, soft, reddish colour, and group D, harder fired fabrics. This division bears comparison with the fabric groupings devised for the mill type-series but, while it is possible to compare individual fabrics, the main groups do not correspond sufficiently closely to tie the mill fabric types directly to the previously published fabric type series.

**B** Fairly hard sandy fabrics with glaze, sub-divisions B1, B2, B3, B4, B5  
B1, no direct comparison.  
B2, similar to F42, sandy glazed fabric.  
B3, similar to F7, coarse orange sandy fabric.  
B4, similar to F22, orange sandy fabric.  
B5, similar to F25, red-brown sandy fabric.  
B6, similar to F16, light-bodied sandy glazed fabric

## **Pottery ... Appendix, continued**

**C Softer fabrics, mainly reddish with glaze, C1, C2, C3, C4**

**C1, similar to F17, orange sandy fabric.**

**C2, similar to F9, F21, orange sandy fabric and sandy glazed fabric.**

**C3, similar to F17, orange sandy fabric.**

**C4, similar to F8, orange sandy fabric.**

**D Hard-fired brittle fabrics, mostly patchy or spotted glaze, D1, D2, D3, D4, D5, D6, D7, D8, D11**

**There is less evidence of direct comparison of this group with the mill fabric type-series; this may partly reflect the differing periods of occupation of the two sites.**

**D1, similar to F34, very hard, sandy fabric.**

**D2, similar to F34 very hard, sandy fabric.**

**D3, similar to F49, hard, fine sandy fabric.**

**D4, similar to F17, orange sandy fabric.**

**D5, similar to a number of fabrics suggesting a general grouping.**

**D6, similar to F32, reduced sandy fabric.**

**D7, no direct comparison.**

**D8, similar to F8, F34, very hard, sandy and orange sandy fabrics.**

**D11, similar to F34, very hard, sandy fabric.**

**Groups L, R, S**

**L1, equates with F103, black-glazed ware, post-medieval.**

**R1, equates with F2, organic tempered greyware, Roman.**

**S1, equates with F111, mottled/streaked ware, post-medieval.**

**There was very little of either fabric E Stamford ware or fabric M 'Cistercian' ware from the mill, while fabrics J stoneware, N hard, gritty, reddish semi-stoneware, O 'Tudor Green', and P tin-glazed ware (fifteenth/sixteenth century) were not represented on the mill site. Q crucibles were identified from the area opened in 1967-8 north and east of BAB, but none were found on the mill site itself. T1, categorised as Roman, has no direct comparison with any of the Roman pottery from BAB/BAE/BAH; the very hard fabric of T1 (but not the rim form) might suggest it was just possibly post-medieval (with a general resemblance to F103 fabric, but no glaze).**



## **Other metal: lead and silver (OM) by G G Astill**

All the objects below are of lead unless otherwise stated. Those objects analysed by energy-dispersive X-ray examination linked to a scanning electron microscope (SEM with EDAX) are marked by '\*'. Comments by A Goodall, I H Goodall, and (technical) L Biek.

### ***Lead waste***

- OM 63 Fused runnel. (U/S)
- OM 67 Fused runnel. (E255, per 7, phase 2)
- OM 68 Fused runnel. (E255, per 7, phase 2)
- OM 76 Fused runnel. (E251, per 7, phase 2)
- OM 79 Fused runnel. (E258, per 7, phase 2)
- OM 81 Large part-circular fused runnel or fragment. Fig 90. 69 l, 66 w, 11 th. (D207, per 7, phase 2)
- OM 83 Fused runnel. (B102, per 6)
- OM 84.1,.2 Two fused runnels. Fig 90. (B101, per 7, phase 1)
- OM 90 Fused runnel. 27 l, 11 w, 4 th. (E368, per 7, phase 1)
- OM 95 Three fused runnels. 23 l, 19 w, 6 th; 15 l, 12 w, 4 th; 12 l, 8 w, 3 th. (E360, per 6)
- OM 98 Fused runnel. 19 l, 4 w, 3 th. (E360, per 6)
- OM 164 Fused runnel. 39 l, 36 w, 7 th. (E452, per 6)
- OM 167 Fused runnel. 39 l, 27 w, 6 th. (E452, per 6)
- OM 170 Fused runnel. 70 l, 37 w, 5-6 th. (E452, per 6)
- OM 175 Fused runnel. 20 l, 5 w, 2 th. (B608, per 4)
- OM 177 Fused runnel. 30 l, 10 w, 6 th. (E867, per 4)
- OM 178 Fused runnel. 17 l, 5 w, 2 th. (E867, per 4)
- OM 179 Fused runnel. 45 l, 15 w, 5 th. (E840, per 4)
- OM 188 Fused runnel. 25 l, 10 w, 2 th. (E452, per 6)
- OM 191 Fused runnel. 25 l, 15 w, 2 th. (E452, per 6)
- OM 193 Fused runnel. 30 l, 15 w, 15 th. (E836, per 5)
- OM198 Fused runnel. 50 l, 20 w, 2 th. (E840, per 4)
- OM 200 49 fused runnels. (E865, per 4)
- OM 201 Eight fused runnels. (E836, per 5)
- OM 202 Fused runnel. (B154, per 6)
- OM 203 Fused runnel. 100 l, 14 w, 4 th. (B626, per 4)
- OM 205 Fused runnel; mixed with partly charred organic material, showing a structure consistent with movement in a fire. 35 l, 14 w, 11 th. (B644, per 4)
- OM 206 Fused runnel, with tar; formed by contact with a fire. (B608, per 4)
- OM 210 Two fused runnels. Details as for OM 206. (B608, per 4)
- OM 211 Eight fused runnels. Details as for OM 206. (B608, per 4)

## Other metal: lead and silver (OM), continued

- OM 212 Two fused runnels. Details as for OM 206. (B608, per 4)  
OM 213 1.0 fused runnels. (B644, per 4)  
OM 216 Fused runnel. (E618, per 4)  
OM 218 Fused runnel, with smudges of soot which could be associated with a fire. (C690, per 3)  
OM 221 Fused runnel. (B644, per 4)  
OM 222 Fused runnel; solidified on a flat surface - one smooth and one rough face. When solid it was bent over on itself. (B631, per 3)  
OM 223 Fused runnel. (E939, per 4)  
OM 225 Fused runnel. (B608, per 4)  
OM 226 Fused runnel. (B644, per 4)  
OM 227 Six fused runnels. (B644, per 4)  
OM 228 Four fused runnels. (B644, per 4)  
OM 230 Fused runnel. (C1055, per 6)

## Sheets

### Sheets with nail holes

- OM 62 Sheet fragment; hole pierced from smooth face to rough with a surrounding impression of a square shank and a round head from a nail. 57+ l, 25+ w, 2 th. (B101, per. 7, phase 1)  
OM 73 Sheet fragment with three cut edges and a round nail hole and impression of a round nail head. Sheet may have been folded over to protect the nail (cf Moorhouse and Wrathmell 1987, 140). 58 l, 55 w, 3th. (D207, per 7, phase 2)  
OM 74 Sheet fragment; three obliquely cut edges and the fourth has broken off along the line of a nail hole. Fig 91. 41+ l, 21+ w, 3 th. (E243, per 7, phase 1)  
OM 163 Sheet fragment with one nail hole. 64 l, 52 w, 2 th. (E814, per 5)  
OM 172 Sheet fragment with nail hole (along broken edge) driven through from smooth to rough face; circular impression of nail head also present. 27 l, 15 w, 2 th. (E452, per 6)  
OM 176 Thin sheet fragment; roughly circular with a square nail hole pierced through from smooth to rough side. 2 th, 35 dia. (E867, per 4)

## **Other metal: lead and silver (OM), continued**

- OM 184** Thick sheet fragment; rectangular with three obliquely cut edges and one broken with two scored lines in one corner. Made by butting the edges of the two sheets together and sealing the joint with one strip on each side; one corner has a nail hole with the impression of a circular nail head. ?Part of a roof sheeting subsequently cut up. Fig 91. 50 l, 50 w, 5 th. (E864, per 3)
- OM 217** Sheet fragment with two cut edges and a nail hole; ?bent over hole when nail was in place leaving impression of head in lead. 35 l, 30 w, 2 th. (E723, per 5)

### **Rolled sheets**

- OM 64** Tightly rolled sheet, cf OM 161. Fig 91. 65+ l, 11+ w, 3 th. (D207, per 7, phase 2)
- OM 160** Loosely rolled sheet. 27 l, 12 w, 2 th. (E817, per 5)
- OM 161** Tightly rolled sheet, cf OM 64. Fig 91. 37 l, 1 th, 9 dia. (B622, per 5)
- OM 173** Loosely rolled sheet wrapped around a piece of thinner sheet. 37 l, 29 w, 4 th. (B628, per 4)
- OM 180** Rolled sheet with two cut edges. Fig 91. 25 l, 20 w, 2 th. (E884, per 4)

### **Sheet fragments**

- OM 26** Sheet fragment; two cut edges with impressions of stars on one side; other side has one scored line ?Try out. Fig 91. 78.9+ l, 36+ w, 2 th. (BAB 68 DS U/S)
- OM 69** Thick sheet fragment, folded. Fig 91. 34 l, 23 w, 3 th. (D300, per 7, phase 1)
- OM 70** Thick sheet fragment. 40 l, 28 w, 3 th. (C175, per 7, phase 1)
- OM 72** Sheet fragment; one obliquely cut edge. 42 l, 20 w, 2 th. (D202, per 7, phase 1)
- OM 78** Two sheet fragments with scored lines on one side. 19 l, 9 w, 0.3 th; 19 l, 12 w, 0.3 th. (E256, per 7, phase 2)
- OM 82** Two sheet fragments with one scored line on one side and the edges cut along other scored lines. 23 l, 21 w, 1.5 th; 25 l, 10 w, 1.5 th. (C179, per 7, phase 1)
- OM 92** Thick sheet fragment; roughly square but with rounded corners; scored lines on upper surface. 53 l, 49 w, 3th. (B52, per 7, phase 1)

## **Other metal: lead and silver (OM), continued**

- OM 96 Sheet fragment; three cut edges - one rounded and curled over slightly. One edge has a wide V cut out of it and one face has a corner-shaped impression which may suggest that it had been salvaged from a container. Fig 91. 55 l, 51 w, 8 th. (E368, per 7, phase 1)
- OM 162 Sheet fragment, folded. 53 l, 26 w, 3 th. (E817, per 5)
- OM 168 Sheet fragment. 28 l, 12 w, 1 th. (E840, per 4)
- OM 169 Sheet fragment. 21 l, 6 w, 1 th. (E840, per 4)
- OM 182 Sheet fragment. 15 l, 10 w, 2th. (C665, per 4)
- OM 183 Sheet fragment; roughly semicircular in shape with a large circular hole. 25 l, 20 w, 2 th. (E435, per 4)
- OM 185 Sheet fragment. 20 l, 15 w, 3 th. (E904, per 4)
- OM 189 Sheet fragment; folded. 25 l, 20 w, 5 th. (E452, per 6)
- OM 190 Thin sheet fragment. 25 l, 10 w, 1 th. (E452, per 6)
- OM 196 Sheet fragment; one obliquely cut edge. 25 l, 10 w, 2 th. (E435, per 4)
- OM 197 Sheet fragment. 55 l, 35 w, 3 th. (B62, per 7, phase 2)
- OM 199 Small sheet fragment. 15 l, 10 w, 6 th. (E814, per 5)
- OM 204 Thick sheet fragment; roughly rectangular in shape. 43 l, 30 w, 8 th. (B635, per 4)
- OM 207 Sheet fragment. 20 l, 17 w, 3.5 th. (B608, per 4)
- OM 214 Sheet fragment. 27 l, 18 w, 3.5 th. (B608, per 4)

### ***Offcuts***

- OM 75 Offcut. 23 l, 23 w, 2.th. (E247, per 7, phase 1)
- OM 88 Offcut; tapering strip, twisted and bent with two obliquely cut edges and a deeply scored line on one surface. 42 l, 10 w, 2 th. (C180, per 7, phase 1)
- OM 89 Offcut; narrow strip with two obliquely cut edges. 36 l, 5.2 w, 1.8 th. (C180, per 7, phase 1)
- OM 93 Offcut; three cut edges and one torn and broken off. Two parallel scored lines along untorn end. 136 l, 44 w, 1.5 th. (E360, per 6)
- OM 94 Offcut with one obliquely cut edge. 31 l, 5 w, 2 th. (E452, per 6)
- OM 99 Offcut. Fig 91. 43 l, 7 w, 2 th. (E452, per 6)
- OM 165 Offcut. 47 l, 6 w, 4 th. (E452, per 6)
- OM 166 Offcut. 26 l, 6 w, 2 th. (E452, per 6)
- OM 171 Offcut with one obliquely cut edge. 46 l, 13 w, 2 th. (E452, per 6)
- OM 174 Offcut. 50 l, 7 w, 2 th. (E452, per 6)

## **Other metal: lead and silver (OM), continued**

- OM 181 Offcut. 25 l, 2 w, 1 th. (E884, per 4)  
OM 186 Offcut with one obliquely cut and bent over edge. 50 l, 15 w, 12 th. (E452, per.6)  
OM 187 Offcut; twisted, with two obliquely cut edges. 30 l., 20 w., 15 th. (E452, per.6)  
OM 195 Offcut. 40 l, 8 w, 2 th. (E848, per 4)  
OM 208 Offcut 27 l, 2 dia. (B608, per 4)  
OM 209 Offcut. 13 l, 11 w, 3 th. (B608, per 4)  
OM 215 Offcut. 50 l, 24 w, 2 th. (B644, per 4)  
OM 219 Offcut; folded. 13 l, 11 w, 4 th. (E941, per 4)  
OM 220 Offcut with two obliquely cut edges. 43 l, 10 w, 2 th. (C687, per 3)  
OM 224 Offcut; twisted. 30 l, 10 w, 1.8 th. (E926, per 4)  
OM 229 Offcut; one cut edge and another edge broken along the line of a possible hole. 43 l, 6.5 w, 2 th. (A158, per 3)

### ***Unidentified fragments***

- OM 66 Lump. 23 l, 19 w, 4 th. (C171, per 7, phase 2)  
OM 87 Nail-shaped lump. 25 l, 9 w, 5 th, 14 dia of head. (B101, per 7, phase 1)  
OM 192 Lump; vaguely nail-shaped, with a depression in the fatter end made by a tool. Possibly formed stalactite-fashion after exposure to heat by slowly dripping down in the centre as the exterior cooled more quickly than the core. 21 l, 18 w, 18 th, 21 dia of 'head'. (E836, per 5)

Table M41 Mill (BAB): partial environmental matrix and states of preservation of metal objects, with special reference to the tail race silt

Context (period)	Moisture state	Colour	Texture	Preservation	Copper alloy	Lead	Ferrous metal	Wood, other botan	Leather	Other materials present	Comments	Material nature of context
	E730 (7)	C	Br		Pr	CA 140	+			Bo P RT		make-up S bank of wheel pit
	E364 (7)	>D	Red-Br		F		IR 1222					hard standing
E289 (7)	W	Grey/Br	Silty clay	G -->F		CA 129	IR 475, 494	+	+	FC SL		silting in tail race
E368 (7)	W	Red-Br	Silt+organic	G		CA 136-8,141; CO	IR 854	+	+	Bo FL P SL ST		silting in tail race
	B101 (7) (W<)	Greyish Br	Clay	(A)		CA 121-2, 302	5# (staining only)			Ch RT		flood deposit
	C175 (7)	(?D)	Dark Br	(A)		CA 115-16	c 100#			Silver (3#CO)		secondary silting
	C185 (7)	(D)	Br	(A)		CA 304	20#			Bo Ch RT SL		primary silting
	D207 (7)	(>D)	Red-Br	(A)		CA 123-4				FL ST	cf E255	fill of mill race
	D211 (7)	(<D)	Br	(A)		CA 303	8#					collapse from D556
	D216 (7)	(D) Grey<Red-Br	Silty clay+pebbles	(A)		CA 300				Ch ST	cf C178	eroded bank
	E246 (7)	(D) Grey>Br	Sandy clay	(A)		CA 118, 290					cf E243, E247	?silting of mill race
E473 (6)		D Br/Bl	Clay; ash		Pr	CA 147	+					floor around hearth
E433 (6)	W	Bl	Organic:twigs,leaves	G		CA 145		+		P RT		organic deposit in wheel pit
E743 (6)	W		Silt	G		CA 265				RT		cobble surface
E425 (6)		C	Sandy clay+pebbles		Pr		IR 801					hard standing
E454 (6)	W	Br	Silty clay+pebbles	G		CA 139, 146, 294	+	+		Bo P RT ST		fill of cut E735
	E452 (6) W	Grey Br	Coarse silt+pebbles	G		24#: half are pins	+		+	Bo P RT SL ST	concentration of CA	silts in tail race
	E472 (6) (W<D)	Red-Br	Clay+pebbles	(A)		CA 133	8#			Ch		debris from hearth E276
	D314 (6) W	Grey/Br-->	Silt+pebbles	G<		CA 134	IR 833, 953-4, 993, 1106			RT		dump
E835 (5)	W	Dark Grey	Clay	G		CA 266	OM 77	+		Bo P RT		fill of cut south of tail race
E814 (5)	W	Grey	Clay+pebbles	G		CA 250, 291	+	+	+	Bo FC P RT SL		dump in wheel pit fill
E817 (5)	W	Grey Br->Red Br	Mixed clay+pebbles	G		CA 148, 264	+	+	+	Bo FC FL P RT SL ST		deposit along line of tail race
E453 (5)	W	Grey	Clay+pebbles	G		CA 143	+	+		Bo RT ST		dump in fill
E723 (5)	W	Grey	Pebbles in gravelly silt	G		CA 262, 271	+			Bo P ST		silting/fill of tail race cut
	E840 (4) W	Grey	Clay+some pebbles	G		CA 280-1	IR 978, 984	+			wooden frags, wheel fittings	silting in tail race
E867/884 (4)	W	Very dark Grey	Silt+sand+gravel, some pebbles	G		CA 272-3, 282-3, 285, 288-9	(Black- & red-stained lumps:>)			ST	some iron in concretions	deposit in tail race
E732 (4)	W	Bl--some Red	Pebbles+sand	G		CA 293	+	(+)		RT ST		timber foundation trench fill
E435 (4)	W		Reddis Pebbles in silty clay	G		CA 270, 284	IR 981			Bo SL ST		wheel pit (bottom surface?)
	E865 (4) W	Dark Grey	Silt+gravel, some pebbles	G		CA 279, 286-7, 292, 295-6	+	+	+	SL	wooden objects; dark soil+iron	surface under tail race
	B650 (4)	(D)	R Sandy clay+many pebbles	(A)		CA 297						cobble surface
	C691 (4)	(<D) Greyish Br>weak Red	Clay+many pebbles	(A)		CA 299				ST		dump/upcast
	E762 (4)	(D) Bl>very pale Br	Clay+pebbles	(A)		+					cf E750	debris from hearth
	E937 (4)	(D) Dark Br	Clay	(A)		CA 298						bedding for hearth E909
	E864 (3) W>	Greeny Grey	Clayey silt	G		+	IR 932	+			timber frags	dump in tail race?

Context nos set out under one another and aligned left physically underlay each other.

A: average Bl: black Br: brown Bo: bone Ch: charcoal CO: coin D: dry F: fair FC: fired clay FL: flint G: good P: pottery Pr: poor 'pebbles': small pebbles RT: roof tile SL: slag ST: stone W: wet +: present

**Table M42 Mill (BAB): X-ray diffraction analysis of corrosion products on iron nails**

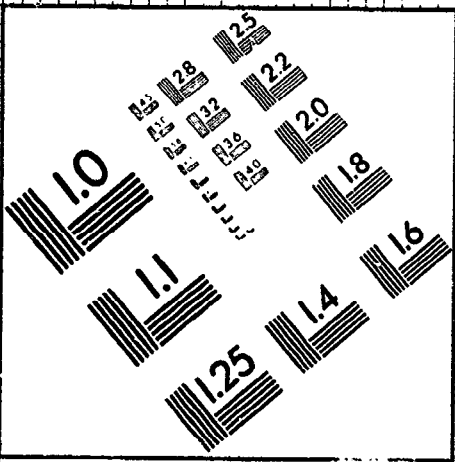
Phases:		Blue deposit on IR 834	Red deposit on IR 838
dominant -			
siderite	FeCO <sub>3</sub>	***	***
hematite	Fe <sub>2</sub> O <sub>3</sub>		***
vivianite	Fe <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub> ·8H <sub>2</sub> O	***	
magnetite	Fe <sub>3</sub> O <sub>4</sub>		***
maghemite	Fe <sub>2</sub> O <sub>3</sub>		***
minor -			
calcite	CaCO <sub>3</sub>	*	*
quartz	SiO <sub>2</sub>	*	*
kyanite	Al <sub>2</sub> SiO <sub>3</sub>	*	

**Amorphous silicon compounds present on both nails**

Table M47, continued

TAXA	HABITAT	PERIOD:	1 (1)	1 (3)	2	3	4	5	6	7
cf <u>Ballota nigra</u> L (cf black horehound)	HY		-	-	-	-	+	-	-	-
<u>Galeopsis tetrahit</u> agg (hemp-nettle)	AW		-	++	+	-	-	-	+	-
<u>Glechoma hederacea</u> L (ground ivy)	DGWh		-	-	-	-	-	-	+	-
<u>Lycopus europaeus</u> L (gipsy-wort)	BM		-	+	-	-	++	+	+	+
cf <u>Marrubium vulgare</u> L (cf white horehound)	DY		-	-	-	-	-	-	+	-
<u>Mentha</u> sp (mint)	ADPY		-	-	-	-	+	+	+	+
<u>Prunella vulgaris</u> L (self-heal)	DG		-	+	+	+	++	+	+	+
<u>Stachys</u> cf <u>sylvatica</u> (cf hedge woundwort)	HSW		-	++	-	-	-	-	-	-
<u>Stachys</u> sp (woundwort)	ABH		-	-	-	-	+	+	+	+
Indeterminate			-	+	-	-	-	-	-	-
LEMNACEAE										
<u>Lemna</u> sp (duckweed)	P		-	-	-	-	+	-	-	+
LINACEAE										
<u>Linum usitatissimum</u> L (cultivated flax seed)	*		-	-	-	+	-	+	+	+
<u>Linum usitatissimum</u> (cultivated flax capsule frags)	*		-	-	-	+	+	-	++	+
MALVACEAE										
<u>Malva sylvestris</u> L (common mallow)	DY		-	-	-	-	++	+	+	+
MORACEAE										
<u>Ficus carica</u> L (fig)	*		-	-	-	-	-	+	+	+
ONAGRACEAE										
<u>Circaea lutetiana</u> L (enchanter's nightshade)	Wcw		-	-	-	-	-	-	+	-
<u>Epilobium</u> sp (willow-herb)	BDMY		-	-	-	-	++	++	+	++
PAPAVERACEAE										
<u>Chelidonium majus</u> L (greater celandine)	H		-	-	-	-	-	+	-	+
<u>Papaver dubium/hybridum</u> (long-headed poppy)	AD		-	-	-	-	-	+	-	+



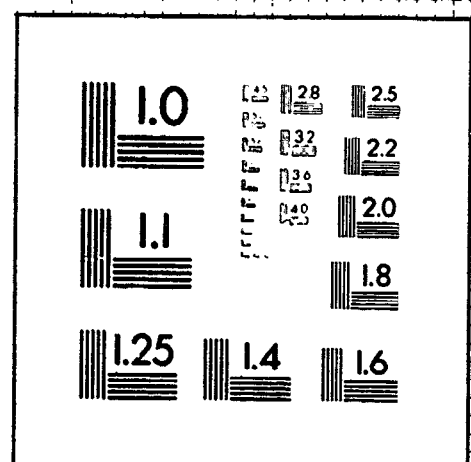


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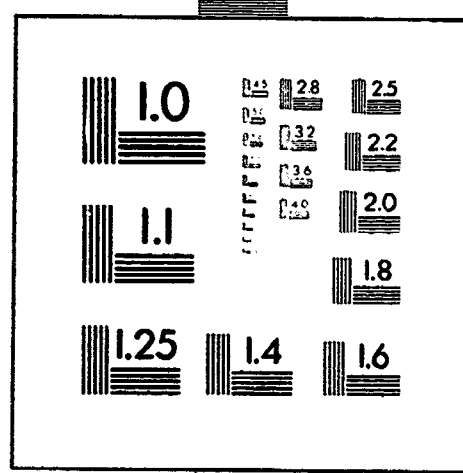
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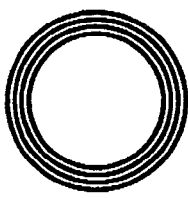
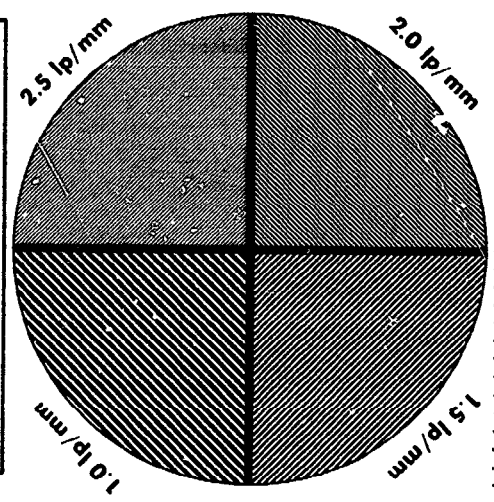
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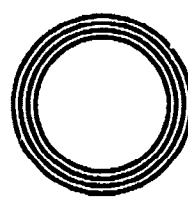
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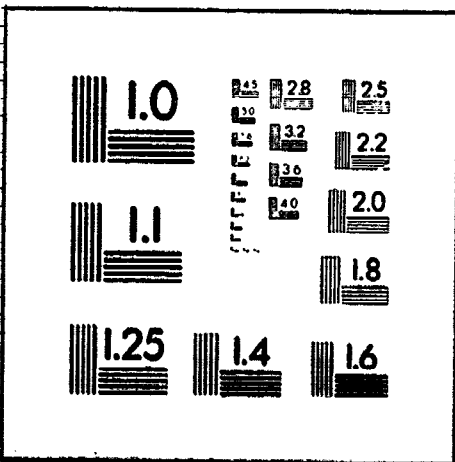
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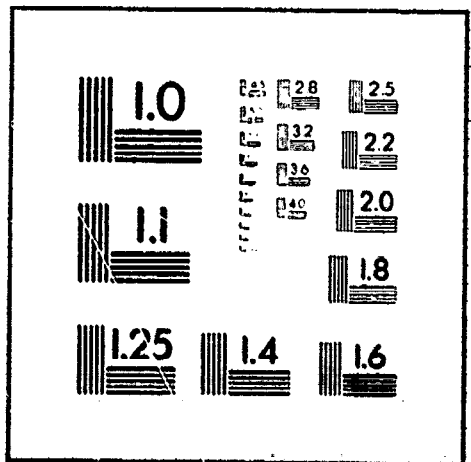


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**A Medieval Industrial Complex  
and its Landscape: the  
Metalworking Watermills and  
Workshops of Bordesley Abbey**

*Bordesley Abbey III*

**By G G Astill**

**With contributions by**

**S J Allen, L Biek, C Bloomfield, D Brown,  
W J Carruthers, P Cannon, I Eaves, R Entwistle,  
J Evans, I Freestone, C Gaffney, I Goodall, F Grew,  
C Heror, M Hughes, J Lovett, V Nailor, M Noel,  
J D Miller, N J Mayhew, I Ridge, D Sim, D Walsh,  
S Wass, V Wass, S M Wright, and B Xu .**

**1993**

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**Council for British Archaeology**

Table M47, continued

TAXA	HABITAT	PERIOD:	1(1)	1(3)	2	3	4	5	6	7
PLANTAGINACEAE										
<u>Plantago major</u> L (great plantain)	CDGfo		-	-	-	-	+	+	+	+
POLYGONACEAE										
<u>Fallopia convolvulus</u> (L) A Love (black bindweed)	AD		-	-	-	-	+	-	-	-
<u>Polygonum aviculare</u> agg (knotgrass)	AD		-	++	+	+	+	++	+	+
<u>P. hydropiper</u> L (water-pepper)	P		-	++	+	-	+	+	+	+
<u>P. lapathifolium</u> (pale persicaria)	BD		-	-	-	-	+	+	-	+
<u>P. persicaria</u> L (red shank)	BCD		-	-	-	-	-	+	+	+
<u>Rumex acetosella</u> agg (sheep's sorrel)	CEGa		-	+	-	-	+	+	+	+
<u>R. crispus</u> L (curled dock)	CDG		-	-	+	-	++	+	+	+
<u>R. conglomeratus</u> Murr (sharp dock)	wBGP		-	-	-	+	+	+	+	+
<u>R. maritimus</u> L (golden dock)	oBwG		-	-	-	-	+	+	+	+
<u>R. obtusifolius</u> L (broad-leaved dock)	DH		-	-	-	-	++	-	-	+
<u>R. sanguineus</u> L (red-veined dock)	DG		-	-	-	-	++	+	+	+
<u>Rumex</u> sp (dock)			+	+++	+	+	+++	+++	++	+++
PORTULACACEAE										
<u>Montia fontana</u> subsp <u>chondrosperma</u> (blinks)	BwGas		-	+	-	-	+	-	-	-
POTAMOGETONACEAE										
<u>Potamogeton</u> sp (pondweed)	PR		-	-	-	-	++	++	-	+
PRIMULACEAE										
<u>Anagallis arvensis</u> L (scarlet pimpernel)	CY		-	+	+	-	+	-	-	-
<u>Primula</u> sp (primrose etc)	GHW		-	-	-	-	-	-	+	+
Indeterminate			-	+	-	-	-	-	-	-
RANUNCULACEAE										
<u>Caltha palustris</u> L (marsh marigold)	MP		-	-	-	-	-	+	+	+
<u>Ranunculus arvensis</u> L (corn crowfoot)	Ac		-	-	-	-	-	-	-	+
<u>R. bulbosus</u> L (bulbous buttercup)	dG		-	-	-	-	+	-	-	-
<u>R. lingua</u> L (greater spearwort)	M		-	-	-	-	-	-	-	+
<u>R. repens</u> L (creeping buttercup)	Gw		-	-	-	-	-	-	-	+
<u>R. sardous</u> Crantz (hairy buttercup)	wAD		-	-	-	-	-	-	+	+

## **Microfiche 2: contents**

**The valley environment: the evidence of the plant remains**

**by W J Carruthers**

**Table M46 Mill (BAB), valley transect (BAE), and tail race (BAH):**

**list of samples taken for the recovery of plant macrofossils M2:A5**

**Table M47 Mill (BAB), valley transect (BAE), and tail race (BAH):**

**summary of waterlogged and carbonised plant remains M2:A7-B10**

**Molluscan analysis by R Entwistle**

**M2:B11**

**Worked wood (other botanical: OB) by S J Allen**

**Mill (BAB) structural timbers, by period**

**M2:C1-C11**

**Valley transect (BAE) structural timbers**

**Mill pond drain**

**M2:C11-C12**

**Channel linings and revetments**

**M2:C13**

**Animal bone (AB) by J Lovett**

**Table M49 Mill (BAB): animal bone, by period and by 10m**

**squares, by number of fragments**

**M2:D1**

**Table M50 Mill (BAB): representation of species**

**M2:D2**

**Table M51 Mill (BAB): representation of skeletal elements**

**M2:D3-D6**

**Table M52 Mill (BAB): mandible wear stages (MWS) (the numerical value)**

**M2:D7-D8**

**Table M53 Mill (BAB): evidence for age at death**

**M2:D9-D11**

**Table M54 Mill (BAB): bone measurements**

**M2:D12-D13**

**Table M55 Valley transect (BAE): representation of species**

**M2:D14**

**Table M56 Valley transect (BAE): representation of skeletal elements, with evidence for age at death**

**M2:E1**

**Table M57 Valley transect (BAE): mandible wear stages (MWS) (the numerical value)**

**M2:E2**

**Table M58 Tail race (BAH): representation of species**

**M2:E2**

**Table M59 Tail race (BAH): representation of skeletal elements, with evidence for age at death**

**M2:E3**

**Table M60 Tail race (BAH): mandible wear stages (MWS) (the numerical value)**

**M2:E4**

**Table M61 Tail race (BAH): bone measurements**

**M2:E4**

**Table M46 Mill (BAB), valley transect (BAE), and tail race (BAH): list of samples taken for the recovery of plant macrofossils (\*: present)**

Site	Period	Context	Plant remains	
BAB	1 phase 1	E971	*	
		E993	*	
	1 phase 3	E1151	*	
		A1165	-	
		A1170	*	
	2	C1070	*	
	3	E864	*	
		E898	-	
		E968	*	
	4	A156	*	(2 samples)
		A157	*	(2 samples)
		E840	-	
	5	E273	*	
	6	E433	*	
		E744	-	
		E289	-	
	7 phase 1	E368	*	(3 samples)
E431		*	(2 samples)	
BAE	1	94	-	
		121	*	
		204	*	
		220	-	
		224	-	
		294	*	
		276	*	
	3	275	-	
		90	*	
	4	116	*	
		117	*	
		87	*	
		104	*	
		302	*	
	6	92	*	
		277	*	
		303	*	
		272	*	
		82	-	
3-6				
7				
BAH	4-5	11	*	
		18	*	
		19	*	
		22	*	

Table M47, continued

TAXA	HABITAT	PERIOD:	1 (1)	1 (3)	2	3	4	5	6	7
<u>R. sceleratus</u> L (celery-leaved crowfoot)	BPR		-	-	-	-	+	+	+	+
<u>Ranunculus acris/bulbosus/repens</u> (buttercup)	GD		+	+++	-	+	+	+++	++	++
<u>Ranunculus</u> subg <u>Batrachium</u>	PR		-	-	-	-	-	-	-	+
ROSACEAE										
<u>Agrimonia</u> sp (agrimony)	H		-	-	-	-	-	+	-	-
<u>Alchemilla</u> sp (lady's mantle)	G		-	-	-	-	-	+	+	-
<u>Aphanes arvensis</u> (L.) Scop (parsley piert)	CGd		-	-	-	-	-	+	-	-
<u>Crataegus monogyna</u> Jacq (hawthorn)	HSW		-	+	-	-	-	-	+	[+]+
<u>C</u> cf <u>laevigata</u> (Poiret) DC (cf midland hawthorn)	HSW		-	-	-	-	+	-	-	-
<u>Filipendula ulmaria</u> (L.) Maxim (meadow-sweet)	wGMU		-	+	+	-	+++	++	+	+
<u>Fragaria vesca</u> L (strawberry)	GW*		-	++	-	-	-	+	+	-
<u>Potentilla anserina</u> L (silverweed)	DG		-	-	-	-	-	+	+	-
<u>Potentilla</u> sp (cinquefoil)	DG		+	-	-	-	-	+	+	++
<u>Prunus avium/cerasus</u> (cherry)	*HSW		-	-	-	-	-	-	-	+
<u>P. domestica</u> cf subsp <u>insititia</u> (bullace)	*HSW		-	-	-	-	-	+	-	-
<u>P. domestica</u> subsp <u>insititia/ domestica</u> (bullace/plum)	*HSW		-	-	-	-	-	-	-	[+]
<u>P. spinosa</u> L (sloe)	HSW		-	-	-	-	+	+	-	[+]+
<u>Rosa</u> sp (rose)	HSW		-	-	-	-	-	+	-	-
<u>Rosa</u> sp (rose thorns)	HSW		-	+	+	-	-	-	+	+
<u>Rubus fruticosus</u> agg (blackberry)	DHSW		+	+++	+	-	+	++	++	++
<u>R. idaeus</u> L (raspberry)	ESW*		-	+	-	-	-	+	+	+
RUBIACEAE										
<u>Sherardia arvensis</u> L (fie.d madder)	AD		-	-	-	-	+	+	+	+
SALICACEAE										
<u>Salix</u> sp (willow catkins & bud scales)	BSW		-	+	-	-	-	+	-	-

Table M47 Mill (BAB), valley transect (BAE), and tail race (BAH): summary of waterlogged and carbonised plant remains

+: occasional    ++: several    +++: frequent    ++++: numerous  
 [+]: carbonised (all other material waterlogged)

TAXA	HABITAT	PERIOD:	1 (1)	1 (3)	2	3	4	5	6	7
<b>CEREALS</b>										
<u>Triticum aestivocompactum</u> Schiem (bread/club wheat caryopses)			-	-	-	-	-	[+]	[+]	-
<u>Triticum</u> sp / <u>Secale cereale</u> (wheat/ rye caryopses)			-	-	-	-	-	+	-	-
<u>Hordeum</u> sp (barley rachis frags)			-	-	-	++	-	-	-	-
<u>Avena</u> sp (oat caryopses)			-	[+]	-	-	-	[+]	-	-
<u>Secale cereale</u> L (rye caryopses)			-	-	-	-	-	[+]	-	-
<u>Secale cereale</u> L (rye rachis frags)			-	-	-	++	-	-	-	-
Indeterminate cereals			-	-	-	-	-	+++	+	-
<b>ACERACEAE</b>										
<u>Acer campestre</u> L (field maple)	HSW		-	+	-	-	-	-	-	+
<b>ALISMATACEAE</b>										
<u>Alisma</u> sp (water-plantain)	PR		-	-	-	-	++	++	++	+++
<b>AQUIFOLIACEAE</b>										
<u>Ilex aquifolium</u> L (holly leaf)	HSW		-	-	+	-	-	-	-	-
<b>BETULACEAE</b>										
<u>Alnus glutinosa</u> (L) Gaertn (alder seeds)	BwS		++	++++	++	-	+	+	+	++
<u>Alnus glutinosa</u> (L) Gaertn (catkin fragments)	BwS		-	-	-	-	-	-	-	+
<u>Betula pendula</u> Roth (silver birch)	SW		+	+	-	-	+	+	+	+
<u>B pubescens</u> Ehrh (downy birch)	SWw		-	-	-	-	+	-	-	-
<b>BORAGINACEAE</b>										
<u>Myosotis</u> sp (forget-me-not)	CGMS		-	-	-	-	-	-	+	-

Table M47, continued

TAXA	HABITAT	PERIOD:	1(1)	1(3)	2	3	4	5	6	7
SCROPHULARIACEAE										
<u>Euphrasia</u> sp / <u>Odontites verna</u> (eyebright/red bartsia)	CD		-	-	-	-	-	+	+	-
<u>Scrophularia</u> sp / <u>Verbascum</u> sp (figwort/mullein)			-	-	-	-	-	++	+	+
SOLANACEAE										
<u>Hyoscyamus niger</u> L (henbane)	DN		-	-	-	-	-	-	-	+
<u>Solanum dulcamara</u> L (woody nightshade)	DHSW		-	-	-	-	+	+	+	+
SPARGANIACEAE										
<u>Sparganium</u> sp (bur-reed)	MP		+	-	-	-	-	-	-	-
TILIACEAE										
<u>Tilia</u> sp (lime)	HSW		++	-	+	-	-	-	-	-
UMBELLIFERAE										
<u>Aethusa cynapium</u> L (fool's parsley)	C		-	++	-	-	+	+	-	+
<u>Angelica sylvestris</u> L (w'd angelica)	wGW		-	-	+	-	+	-	-	+
<u>Anthriscus sylvestris</u> (L) Hoffm (cow parsley)	DHY		-	-	-	-	-	-	-	+
<u>Apium nodiflorum</u> (L) Lag (fool's watercress)	P		-	-	-	-	-	+	+	+
<u>Berula erecta</u> (Huds) Coville (narrow- leaved water-parsnip)	MP		-	-	-	-	-	+	-	-
<u>Bupleurum rotundifolium</u> L (thorow-wax)	A		-	-	-	-	-	+	-	-
<u>Chaerophyllum temulentum</u> L (rough chervil)	GH		-	-	-	-	-	+	+	+
<u>Conium maculatum</u> L (hemlock)	Bw		-	-	-	-	+	+	+	-
<u>Daucus carota</u> L (carrot)	Gc		-	+	-	-	-	+	-	+
<u>Heracleum sphondylium</u> L (hogwood)	GHY		-	-	-	-	-	-	-	+
<u>Pastinaca sativa</u> L (parsnip)	DGY*		-	-	-	-	-	+	+	-
<u>Torilis japonica</u> (Houtt) DC (upright hedge-parsley)	GHY		-	++	-	-	+	++	+	+
<u>T. nodosa</u> (L) Gaertn (knotted hedge-parsley)	A		-	-	-	++	-	+	-	-



Table M47, continued

TAXA	HABITAT	PERIOD:	1 (1)	1 (3)	2	3	4	5	6	7
<b>CALLITRICHACEAE</b>										
<u>Callitriche</u> sp (starwort)	P		-	+	-	-	-	-	-	+
<b>CANNABIACEAE</b>										
<u>Cannabis sativa</u> L (hemp)	*D		-	-	-	-	-	+	-	-
<b>CAPRIFOLIACEAE</b>										
<u>Sambucus nigra</u> L (elder)	DHSn		-	++++	+	-	+	+	++	++
<b>CARYOPHYLLACEAE</b>										
<u>Agrostemma githago</u> L (corn cockle)	A		-	-	+	-	+	++	+	+
<u>Cerastium</u> sp (chickweed)	ABDG		+	+	-	-	+	+	-	-
<u>Lychnis flos-cuculi</u> L (ragged robin)	wGMW		-	-	-	-	-	-	+	-
<u>Moehringia trinervia</u> (L) Clairv (three-nerved sandwort)	Wn		-	+	+	-	-	+	-	-
<u>Silene dioica</u> (Mill) Krause (red campion)	HWn		+	+	-	-	-	-	++	+
<u>S vulgaris</u> (Moench) Garcke (bladder campion)	AGY		-	-	-	-	-	+	-	-
<u>Silene</u> sp (campion)			-	-	-	-	-	-	+	+
<u>Spergula arvensis</u> L (corn spurrey)	Aa		-	-	-	-	+	+	-	-
<u>Stellaria graminea/palustris</u> (lesser/ marsh stitchwort)	EGWIM		-	+	-	+	+	+	+	+
<u>S media</u> (L) Vill (chickweed) cf <u>S alsine</u> Grimm (cf bog stitchwort)	AD BYw		+	+	+	-	+	++	++	++
			-	-	-	-	-	++	-	+
<b>CERATOPHYLLACEAE</b>										
<u>Ceratophyllum demersum</u> L (horn wort)	P		-	-	-	-	-	-	+	[+]
<b>CHENOPODIACEAE</b>										
<u>Atriplex prostrata/patula</u> (orache)	CD		-	+	-	-	+++	++	+	+
<u>Chenopodium album</u> L (fat hen)	CDn		-	+	-	-	+	++	+	+
<u>Chenopodium</u> sect <u>Pseudoblitum</u>	CDn		-	-	-	-	+	-	+	+
<b>COMPOSITAE</b>										
<u>Anthemis cotula</u> L (stinking mayweed)	ADh		-	+	-	-	+	+++	+	+
<u>Bellis perennis</u> L (daisy)	G		-	-	-	-	-	+	+	+

Table M47, continued

TAXA	HABITAT	PERIGD:	1(1)	1(3)	2	3	4	5	6	7
URTICACEAE										
<i>Urtica dioica</i> L (stinging nettle)	DGHWp		++	+++	++	+	+++	++	++	+++
<i>U. urens</i> L (small nettle)	CDI		-	-	-	-	-	+	-	-
VERBENACEAE										
<i>Verbena officinalis</i> L (vervain)	DY		-	-	-	-	-	+	-	+
VIOLACEAE										
<i>Viola</i> sp (violet)	EGHMSW		+	++	-	+	-	+	+	+
VITACEAE										
<i>Vitis vinifera</i> L (grape)	*		-	-	-	-	-	-	-	+
ZANNICHELLIACEAE										
<i>Zannichellia palustris</i> L (horned pondweed)	PR		-	-	-	-	+	-	+	-
<i>Pteridium aquilinum</i> (L) Kuhn (bracken frond fragments)	ESal		-	-	-	-	-	+	-	+
total seed frequency:			++	+++	+	++	+++	+++	+++	+++
number of samples:			2	5	2	2	7	5	7	6

HABITAT PREFERENCES:

A: arable  
 B: river banks  
 C: cultivated land  
 D: disturbed/wasteland  
 E: heath  
 G: grassland  
 H: hedgerows  
 M: marsh  
 P: ponds, ditches, slow flowing/stagnant water  
 R: rivers, streams  
 S: scrub  
 W: woodlands  
 Y: waysides

a: acid soils/calcifuge  
 c: calcareous/basic soils  
 d: dry soils  
 h: heavy soils  
 l: light soils  
 n: nitrogen-rich soils  
 o: open habitats  
 p: phosphate-rich soils  
 s: sandy soils  
 w: wet/damp soils  
 \*: plants of possible economic importance

## **Molluscan analysis by R Entwistle**

Four samples from BAH were taken for molluscan analysis. Three of these, from contexts 18 and 19 (both per 3), and 11 (per 4), were from coarse grained organic silts. In each of these, large numbers of snail shells were plainly visible to the naked eye. The remaining sample, from context 22 (per 3), was composed mainly of coarse silt and gravel and it lacked the organic component present in the other samples.

Each of the bulk samples was air dried and a standard subsample weighing 1.5kg was used in the analysis. These were disaggregated by immersion in water and where necessary dilute hydrogen peroxide was added to accelerate the process. The samples were then washed through a nest of three sieves of 5.6mm, 2.0mm, and 0.5mm mesh and the residues dried. Species identification was made using a binocular microscope at x 10 magnification.

In view of the rather limited nature of the catchment represented by the tail race and the likelihood that the silts were derived mainly from disturbed sediments no attempt has been made to undertake detailed quantitative analysis. The following results constitute a superficial evaluation of the dominant species present in each sample.

BAH18 (per 3) Most of the shells were from Pisidium spp and Bithynia tentaculata.

BAH19 (per 3) Bithynia tentaculata and Pisidium spp are common and a few shells of the Planorbid species Vulvata cristata also occurred. This is the only sample to contain shells of a terrestrial species, namely Discus rotundatus.

BAH22 (per 3) This sample was devoid of shells.

BAH11 (per 4) Organic sediment. Similar to BAH18.

Almost all of the shells are from aquatic species which are widely distributed in still or slow moving water. The only indication of the terrestrial environment is provided by the two specimens of Discus rotundatus, a species commonly found in leaf litter, under logs and in hedgerows. However, on the basis of such slender evidence it is not possible to make a definitive judgement regarding the local terrestrial environment. All that can be said is that suitable habitats with ground litter and rotting timber must have been present nearby.

Table M47, continued

TAXA	HABITAT	PERIOD:	1 (1)	1 (3)	2	3	4	5	6	7
<u>Bidens tripartita</u> L (tripartite bur-marigold)	BP		-	-	-	-	-	+	-	-
<u>Bidens cernua</u> L (nodding bur-marigold)	BP		-	-	-	-	-	-	-	+
<u>Centaurea cyanus</u> L (cornflower)	AD		-	-	-	-	+	+	-	+
<u>Chrysanthemum segetum</u> L (corn marigold)	Aa		-	-	-	+	-	++	-	+
<u>Cirsium</u> sp / <u>C. arvense</u> sp (thistle)	ABDGMY		-	+	-	-	++	++	+	+
<u>Crepis capillaris</u> (L) Wallr (smooth hawk's beard)	DG		-	-	-	-	+	-	-	-
<u>Eupatorium cannabinum</u> L (hemp agrimony)	BMwW		+	-	-	-	-	+	+	+
<u>Lapsana communis</u> L (nipplewort)	DHR		-	+	-	-	+	+	+	+
<u>Leontodon</u> sp (hawkbit)	G		-	-	-	+	-	-	-	-
<u>Leucanthemum vulgare</u> Lam (ox-eye daisy)	G		-	-	-	-	-	-	-	+
<u>Onopordum acanthium</u> L (cotton thistle)	DY		-	-	-	-	-	+	+	-
<u>Picris echioides</u> L (bristly ox-tongue)	DHYc		-	-	-	-	-	+	-	-
<u>Senecio</u> sp (ragwort)	BCDY		-	-	-	-	+	++	+	-
<u>Sonchus arvensis</u> L (field milk-thistle)	AB		-	-	-	-	-	+	-	-
<u>S. asper</u> (L) Hill (spiny sow-thistle)	CD		-	+	+	+	++	+	+	+
<u>S. oleraceus</u> L (sow-thistle)	CDY		-	+	-	-	++	+	+	+
<u>Taraxacum</u> sp (dandelion)	BDGY		-	-	-	-	-	+	-	+
CORYLACEAE										
<u>Corylus avellana</u> L (hazel nut shell fragments)	HSW		+++	+	+	+	+	+	+	+
<u>Corylus avellana</u> L (catkin fragments and buds)	HSW		+	+	-	-	.	-	+	-
CRUCIFERAE										
<u>Alliaria petiolata</u> (Bieb) Cavara & Grande (hedge garlic)	HYn		-	-	-	-	-	-	-	+

Table M47, continued

TAXA	HABITAT	PERIOD:	1 (1)	1 (3)	2	3	4	5	6	7
<u>Barbarea vulgaris</u> R Br (yellow rocket)	BwHY		-	+	-	-	+	+	-	+
<u>Brassica</u> sp / <u>Sinapis</u> sp	ACD		-	+	-	-	++	++	+	[+]+
cf <u>Cardamine</u> sp (cf bitter-cress)	BGW		-	+	-	-	+++	+	+	+
cf <u>Sinapsis arvensis</u> L (cf charlock capsule frags)	A		-	-	-	-	-	+	-	-
CYPERACEAE										
<u>Carex pseudocyperus</u> L (cyperus sedge)	BPR		-	-	+	-	-	-	+++	-
<u>Carex</u> spp (sedge)	BGMPR		++	++	+	+	+++	++	++	++
<u>Eleocharis</u> subg <u>Palustres</u> (spike-rush)	MPw		-	-	-	+	+	+	+	+
<u>Schoenoplectus</u> sp (bulrush)	BPR		-	-	-	-	+	-	+	+
<u>Scirpus</u> cf <u>sylvaticus</u> L (cf wood club-rush)	BMW		-	-	-	-	-	+	-	-
DIPSACACEAE										
<u>Dipsacus sativus</u> (L) Honckeney (fuller's teasel)	*		-	-	-	+	+++	++	-	+
<u>Dipsacus sativus</u> (L) Honckeney (fuller's teasel bracts)	*		-	-	-	-	+++	+	-	-
<u>Dipsacus</u> sp (teasel)			-	-	-	-	+	+	+	+
<u>Scabiosa columbaria</u> L (small scabious)	Gcd		-	-	-	-	-	-	-	+
FAGACEAE										
<u>Quercus</u> sp (acorn cup frags)	HSW		++	-	-	-	-	-	+	-
GRAMINEAE										
<u>Glyceria</u> sp (flote-grass)	BPR		-	-	-	-	+	-	+	+
Gen et sp indet (grasses)	CG		-	+	-	+	++	++	+	+
HYPERICACEAE										
<u>Hypericum</u> sp (St John's wort)	GHW		-	-	-	-	-	+	-	+
JUNCACEAE										
<u>Juncus</u> sp (rush)	wGMR		-	+	-	-	++	+	-	-
LABIATAE										
<u>Ajuga reptans</u> L (bugle)	GWw		-	+	-	-	-	+	+	-

## **Worked wood (other botanical: OB) by S J Allen**

### ***Mill (BAB) structural timbers, by period***

#### **Period 2 building Figures 7 and 31**

OB 386, Post bases. 140-324 l, 140-195 th. Various boxed conversions.  
387, (D589, B545, C1011, C1062, E1035)  
388, 389

OB 367.2 Timber pad, a reused structural timber with two grooves in opposing faces. Fig 31. 550 l, 140 w, 90 th. Grooves 30-35 w, 25-35 d. Boxed heart oak. (D589)

#### **Period 3 building Figures 8 and 31**

OB 226, Post bases, 225-310 w, 130-195 th. Various boxed  
382, 390 conversions. (E818, E1030, C1007)

OB 284 Upright post of mill building, south of tail race. Post with rebate in north-east corner and very roughly hewn chamfer between east face and lower end. Lowest end cut square; upper portion of post missing. Hewing marks (120+ w) on chamfer and (faint) on lower end. Post 820 l, 430 w, 340 th. Rebate 260 w, 60 d. Chamfer 230 d. Box halved with sapwood and bark present on one corner. Sampled - Q8321. (E731)

OB 362 Large curved timber reused from period 2, with four spoon bit drilled holes (40 dia, 68 d; 30 dia, 69 d; 40 dia, 15 d; 12 dia, 15 d) in one side. Fig 31..Timber 970 l, 245 w, 200 th. Boxed heart. (B537/9)

OB 368 Timber, reused from period 2 with rebate cut into one edge. Fig 31. Timber 465 l, 230 w, 170 th. Rebate cut 50 w, 70 th. Boxed heart. (B537/6)

OB 380, Timber pads. 425 l, 90 w, 70 th and 530 l, 380 w, 130 th.  
381 Various boxed conversions. (B1095/3; B1095/1)

OB 410 Base of large main upright post, very abraded. 480 w, 390 th. Boxed heart, sapwood and bark present on one corner. Sampled - Q7664. (B538)

## Worked wood (other botanical: OB), continued

### Period 3 mill race

#### Head race Figure 33

- OB 237, 491, 493 Timber pads of OB 266. 350-450 l, 150-200 w, 120-140 th. Various boxed conversions. (D513, D509, D512)
- OB 264 Plate from east end of head race, very badly decayed. Remains of mortice cut into only intact face, spoon bit drill marks (30 dia) in base. Timber 2.46+m l, 380 w, 300 th. Mortice 275 l, 70 d. Boxed heart. Sampled - Q8318. (D227/D228)
- OB 265 Baseplate from south side of head race, very badly decayed. Hewing marks (98 and 100 w) on only surviving original face, worked from both ends of the timber. Timber 3.5+m l, 320 w, 186 th. Box halved. Sampled - Q8319. (D330)
- OB 266 Baseplate of head race. Repositioned in period 4. Timber with stopped rebate in one of upper edges, one corner rebate on same edge/corner and one mortice in east face containing end of a timber. Axe marks on ends of timber, hewn marks on faces (120, 125, 160 w). Timber 2.36m l, 360 w, 330 th. Rebate 85 d. Corner rebate 155 w, 90 d. Mortice 165 l, 135 w, 130 d. Boxed heart. Sampled - Q8320. (D313/D312)
- OB 156 Remains of tenon in south mortice of OB 266. 136+ l, 150 w, 120 th. Boxed heart (D333)
- OB 464-468 Row of stakes revetting south mill pond bank west of OB266. 160-200 l, 50-70 dia. Round. (D502-D506)
- OB 473 Baseplate of head race, fragmentary. 1.59m l, 460 w, 450 th. Boxed heart. (D317)
- OB 476 Collapsed lower plank of south side revetment. 2.08+m l, 480 w, 80 th. (D319)
- OB 477-480, 490 Group of abraded blocks and post at south end of OB 266. ?Steps for access to head race. 420-900 l, 110-260 w, 80-140 th. Post 280+ l, 110 w, 60 th. Various boxed conversions. (D332, D331, D339, D340, per 3-6)
- OB 492, 494 Collapsed and shattered uprights of head race. ?Tenoned into mortice of OB 266. Not examined. (D511, D514)

#### Tail race Figure 34

- OB 207 West baseplate of tail race with two stopped rebates cut out of the top edges, two mortices cut into upper surface and two drilled holes (35 dia) each containing a peg or treenail. Hewing marks (142-186 l) on most surfaces, one mortice (of two) has a drill mark in one corner, circular

**Worked wood (other botanical: OB), continued**

- bucket (?) mark on top surface. Block 1.48m l, 380 w, 390 th. Rebates 790-815 l, 120-155 w, 135 d; 798-800 l, 130-170 w, 78-100 d. Mortices 165-166 l, 80 w, 65 d; 145-160 l, 75 w, 100 d. Peg 65 l, 32 dia, peg 79 l, 32 dia. Boxed heart. (E894)
- OB 208** South-east upright of tail race with chamfer-edged tenon at lower end, groove cut into west face, drilled hole (35 dia) in south face of timber containing a peg or treenail, upper end decayed. Axe marks (120 w) on north face and lower end, toolmarks (? adze 33 w) in bottom of groove. Timber 795+ l, 295-330 w, 190-200 th at base. Tenon 190 l, 131 w, 70 th. Groove 70 w, 66-87 d. Boxed heart, some sapwood present. (E897)
- OB 210** South plank of tail race bottom. Plank with regular cut-out at west end. On lower face, shoulder of cut-out partially socketed and west end hewn to fit over OB 207. Small cut-out at each end. Two drilled holes (30 dia) through face, one towards each end. Hewing marks (140+ w) on both faces, socket and lower face chamfer. Plank 5.35m l, 550 w, 140 th. Western cut-out 210 l, 280 w. Socket in shoulder 90 l, 120 w, 60 d. West end hewn to 70 d. Cut-out in north edge 300 l, 60 w. Tangentially faced, sapwood present. Sampled - Q8274. (E888)
- OB 211** North longitudinal horizontal plank of tail race bottom with regular cut-out at west end. On lower face, west end hewn to fit over OB 207. Small cut-out in south edge towards east end. Two drilled holes (30 dia) through face, one towards each end. East hole contained peg. Hewing marks (135+ w) on both faces and lower face chamfer. Plank 5.22m l, 810 w, 170 th. West cut-out 230 l, 190 w. West end hewn to 40 th. Cut-out in south edge 340 l, 130 w. Tangentially faced, sapwood present. Sampled - Q8275. (E889)
- OB 212** Lowest longitudinal plank of south side of tail race. West end hewn to form a shallow tongue. One drilled hole (30 dia) through face towards east end containing square peg. Hewing marks (100+ w) on south face. Plank 5.29m l, 620 w, 140 th. Tongue at west end 80 l, 40 th. Tangentially faced, sapwood present. Sampled - Q8276. (E863)
- OB 221** Middle longitudinal vertical plank of south side of tail race. 4.78m l, 405 w, 120 th. (E896)



## Worked wood (other botanical: OB), continued

- OB 224 East baseplate of tail race with two mortices cut into upper face. One drilled hole (30 dia) in upper face towards south end. Drill mark across east edge towards north end. East and west edges hewn to form a point at south end. Hewing marks on both edges, lower face (130 w) and ends (90+ w). Spoon bit drill marks (25 dia) in corners of both mortices. Chisel or twybill marks in base of south mortice. Timber 1.67m l, 210 w, 370 th. South mortice 125 l, 80 w, 110 d. North mortice 140 l, 100 w, 109 d. Boxed heart. (E969)
- OB 225 South-west upright of tail race. Timber with tenon at lower end, grooves cut into east and west faces, upper end decayed. Timber 1.268+m l, 258-264 w, 160-170 th. Tenon 110 l, 160 w, 62-64 th. East groove 55 w, 52-55 d. West groove 55 w, 40-45 d. Boxed heart. (E380)
- OB 250 Top longitudinal vertical plank of south side of tail race. 2.96m l, 180 w, 40 th. (E815)
- OB 283 Portion of wattle revetment from south side of tail race. Series of upright stakes leading east from east end of OB 208 and passing beyond excavation with regular weave of rods set between them. Lower ends of stakes hewn to two or three faceted points. Ends of rods also have cut marks. Stakes 600+ l, 80 dia. Rods 12-15 dia. All elements of willow (Salix alba L), either roundwood (stakes) or halved. (E874)

## Period 4 mill race Figure 33

### Head race

No new timbers introduced

### Wheel frame and tail race

- OB 218 Baseplate of wheel frame with two through mortices, one towards each end. Axe marks (98, 106 l) on ends of timber, chisel marks (25 w) in interior of mortice. One corner of timber lost. Timber 1.98m l, 360 w, 90-120 th. Mortices 244 l, 102-105 w; 228-230 l, 95-98 w. Radially faced. (E860)
- OB 222 Baseplate of tail race. Timber with two mortices, one towards each end. Spoon bit drill marks (30 dia) in corners of both mortices, chisel marks (25 w) in bases of each mortice. Timber 1.51m l, 230 w, 170 th. Mortices 152 l, 120-122 w, 103 d; 156-158 l, 130-132 w, 140 d. Boxed heart. (E861)

## Worked wood (other botanical: OB), continued

- OB 223 Baseplate of tail race. with two through mortices, one towards each end. Drilled hole into upper face towards south mortice contained peg. Hewing marks on lower face. Drill mark across east edge of north mortice. Chisel or twybill marks on surface of both mortices. 2.27m l, 320 w, 125 th. Mortices 170-200 l, 110 w. Peg 25 dia. Drill mark 25 dia. Chisel/twybill marks 25 w. Box halved, with wandering heart. (E859)
- OB 227 Supporting block below OB 223. Reused split upright from first tail race with tenon at original lower end, grooves cut into original east and west faces. Three drilled holes (40 dia) cut into upper end containing pegs. One drilled hole cut at an angle across edge of upper end on centre line of timber, contained remains of peg. Hole on inside face of trench at upper end contained rectangular short stud. Inner face of timber roughly hewn. Timber 1.494m l, 355 w,  $\underline{c}$  70 th. Tenon 165-174 l, 96 w. Grooves 90 d; 70 d. Stud 40 w, 50 th. Box heart. See OB 208, OB 225. (E869)
- OB 228 Supporting block below OB 218. Reused split upright from first tail race. Timber with tenon at original lower end, grooves cut into original east and west faces. Drilled hole (30 dia) through face of trench near decayed original upper end. Inner face of timber roughly hewn. Timber 1.478+m l, 350+ w,  $\underline{c}$  60 th. Tenon 160 l, 70 w. Trenches 82-95 d; 75-95 d. Boxed heart. See OB 208, OB 225. (E870)
- OB 209 Reused lower part of split upright from tail race with tenon at original lower end and two crude mortices cut into reworked surface. Original upper end decayed. Timber 900+ l, 170 w, 55-85 th. Tenon 290 l, 90 w, 55 th. Mortices 90 l, 55 w; 40 l, 65 w. Boxed heart. (E819)
- OB 215 Baseplate of tail race. Timber with two through mortices one towards each end and two drilled holes (25 dia, 150 apart) slightly offset towards east edge cut into upper side, each contained a polygonal cross-sectioned peg. Hewing marks on edges and lower side, incomplete spoon bit drilled hole (27 dia) near mortice cut into lower side. Drill marks in mortices 84-85 w; 170-175 l, 81-90 w. Radially faced. Sampled - Q7665. (E852)
- OB 216 Baseplate of tail race with two through mortices, one towards each end, each mortice with single drilled hole (30 dia) cut from same edge terminated beyond mortice, each hole contained a peg. Hewing marks on underside and one edge of timber, chisel marks on interior of mortices. Part of

## Worked wood (other botanical: OB), continued

- underside around mortice lost. Timber 1.47m l, 240 w, 67-145 th. Mortices 290 l, 95-115 w; 155-160 l, 115-120 w. Box quartered, some sapwood remaining. Sampled - Q7666 (E876)
- OB 229 Baseplate of tail race with two through mortices, one towards each end. Fine cuts on upper side near inside end of mortice. Timber 1.87m l, 250-275 w, 60-75 th. Mortices 275-277 l, 80 w; 205-215 l, 90 w. Radially faced. Sampled - Q7667. (E857)
- OB 376 Pad of OB 216. 660 l, 200 w, 120 th. (E877)
- OB 409 Part of large horizontal timber plate, very badly abraded and rotted, laid in slot and projected across tail race. Baseplate of mill building? Boxed heart. (E271)
- OB 481- Pads of OB 215. 720-840 l, 180-200 w, 80-120 th. (E883, 482 E875)
- OB 483- Pads of OB 229. 340-420 l, 200-250 w, 100-120 th. (E881, 484 E882)

### Bypass channel sluice gate?

- OB 284- Group of stakes (OB 284, 286, 288, 290, 291, 293) which 293 retained four fragmentary boards (OB 285, 287, 289, 292) across the channel. Stakes 280-360 l, 40-60 dia. Boards 270-380 l, 130-60 w, 10-32 w. (B160, B161, B162)
- OB 496 Tapering ?wall stud of light frame member. Two ?roofing pegs (40 l, 18 square) driven in one third of length from thickest end ?derived from a building dismantled towards the end of per 3. Third irregular peg (84 l, 26 w, 18 th) driven in one third of length from thinner end. 1.53+m l, 36-80 w, 35-64 th. Quartered. (A156)

### Period 5 mill race Figure 36

#### Wheel trough

- OB 261 Baseplate of wheel trough with two mortices cut into upper face, one towards each end, drilled hole (25 dia) containing peg in same face. Groove (redundant) cut into west edge with spoon bit drilled hole in one shoulder. Remains of 23 redundant drilled holes in lower face cut with successively smaller spoon bits (40 dia, 20 dia at

## Worked wood (other botanical: OB), continued

- bottom, up to 80 d) Axe cuts (40-50+ l) on east and west edges. From same timber as OB 273. Timber 1.70m l, 145-160 w, 160-190 th. Mortices 240 l, 50-60 w, 80 d; 230-240 l, 50-60 w, 80 d. Groove 40-55 w, 50-60 d. Box halved. (E369)
- OB 262 Baseplate of wheel trough with three mortices cut into upper face and small rebate near middle. Three drilled holes (20-25 dia) near mortice, one near rebate. Spoon bit marks (25 w) in base of mortice, chisel marks (25 w) in base of mortice. Timber 1.90m l, 160-170 w, 150-160 th. Mortices 270 l, 70 w, 80 d; 270 l, 70 w, 80 d; 'L'-shaped, 135 l, 75 w, extension 85 l, 55 w, 80 d. Rebate 215 l, 80-93 w, 105-125 d (E736)
- OB 263 Baseplate of wheel trough with two mortices cut into upper face, one towards each end. Groove cut in east face. 20 spoon bit drilled holes (c 40 and c 20 dia, up to 80 d) cut into lower face. South end of timber cut at angle in former use, leaving projecting tenon. Part of upper shoulder of trench lost. Spoon bit marks (30 dia) in base of mortice. Chisel marks (25 and 30 w) in base of mortice. From same timber as OB 261. Timber 1.87m l, 170-180 w, 125-145 th. Mortices 260-270 l, 40-70 w, 80 d; 295 l, 50-60 w, 80 d. Groove 30-50 w, 40-45 d. Box halved. (E737)
- Tail race
- OB 251 West baseplate of tail race. with two grooves cut across the upper surface, one towards each end. Groove at north end of timber contained west end of OB 253. Groove at south end contained west end of OB 254. Axe marks (80, 98 l) in the corners of both trenches, hewing marks on roughly worked underside of timber. Timber 482m l, 290 w, 190 th. Trenches 223-274 w, 50 d, 234-262 w, 55-60 d. Halved, waney lower faces. Sampled - Q7674. (E820)
- OB 252 East baseplate of tail race with two grooves cut across the upper surface, one towards each end. Groove at north end contained east end of OB 253. Groove at south end of timber contained east end of OB 254. Axe marks (70+ l) on outer corner of trench and lower side of timber. Timber 1.58m l, 215 w, 185 th. Trenches 265 w, 60 d; 270 w, 65 d. Halved, waney lower faces. Sampled - Q7670. (E821)

## Worked wood (other botanical: OB), continued

- OB 253 North longitudinal timber of tail race with five mortices cut into the upper face, which mortices from west to east held OB 294, OB 295, OB 296, OB 297. One long shallow groove cut into the upper face which is interrupted by projections from its outer shoulder. One deep groove cut into the inner face to hold the north edges of boards OB 255-260. Spoon bit drill marks (18, 35, 37, and 40 dia) in bases of some mortices. Chisel marks (15 w) in bases of some mortices. Timber 4.69m l, 260-270 w, 115-140 th. Mortices 225 l, 40-50 w; 210 l, 30-45 w; 210 l, 70-80 w; 300 l, 50-60 w; 170-190 l, 40-60 w. Groove on upper face west part 2.12m l, middle part 1.76m l, east part 450 l. Groove on inner face 50 w, 40-50 d. Box quartered. Sampled - Q7668. (E436)
- OB 254 South longitudinal timber of tail race with four mortices cut into the upper face of which mortice towards the west end held OB 298. One long shallow groove cut into the upper face which is interrupted by projections from its outer shoulder. One deep groove cut into the inner edge to hold the south edges of OB 255-260. Abraded spoon bit drill marks in bases of mortices. Chisel marks (20 w) in base of mortice. Timber 4.67m l, 220-260 w, 140-150 th. Mortices 230 l, 80 w; 220 l, 90 w; 330 l, 50 w; 225 l, 55-60 w. Groove on upper face west part 2.13m l, middle part 1.77m l, east part 440 l. All parts of trench 60-100 w, 10-20 d. Groove in inner edge 50 w, 40-90 d. Box quartered, outer and lower faces at east end waney. Sampled - Q7669. (E439)
- OB 255, West boards of tail race. North edges slotted into groove of OB  
256, south edge slotted into groove in OB 254. Edges  
257, chamfered, upper face abraded. Saw marks on lower face.  
258, Tangentially faced. Sampled - Q7753, 7754, 7755, 7756, 7757.  
259, (E443, E444, E445, E446, E447, E448, E718)  
260
- OB 468, Two levelling blocks beneath south ends of OB 251 and OB 252.  
469 340 l, 180 w, 80 th and 680 l, 240 w, 50 th. (E858, E851)

### Period 5 modifications

- OB 217 Baseplate of modification to period 5 tail race. with two grooves cut across upper surface, one towards each end. North groove contained west end of OB 219. South groove contained west end of OB 220. Axe marks (110 w) in corners of grooves and ends of timber. Timber 1.57m l, 210 w, 160 th. Grooves 256-283 w, 50-52 d; 270-273 w, 49-53 d Boxed

## **Worked wood (other botanical: OB), continued**

- heart, waney lower surface, much sapwood present. Sampled - Q7671. (E850)
- OB 219 North longitudinal timber of modification to period 5 tail race. Timber continues beyond east edge of excavation. 1.06+m l, 255 w, 160 th (E460)
- OB 220 South longitudinal timber of modification to period 5 tail race. Timber continues beyond east edge of excavation. 1.06+m l, 270 w, 170 th. (E461)
- OB 294-297 Upright boards placed in mortices of OB 253 (OB 294, 295, 297) and OB 254 (OB 296; and see OB 298 below). Very badly abraded, upper parts missing. 80-295 w, 30-35 th. Tangentially faced. See OB 298 below. (E448, E449, E450, E451)
- OB 298 Upright board placed in mortice of OB 254. Badly abraded. 210 w, 70 th. Tangentially faced. (E442)

## **Period 6 mill race Figure 37**

### **Wheel trough**

- OB 155 South longitudinal timber of wheel trough with two mortices cut in upper face, one towards each end. West end cut square, east end cut to a point. Spoon bit drill mark (30 dia) in east mortice. Pointed end cut with an axe. Timber 2.785m l, 190 w, 340 th. Mortices 115 l, 60 w, 70 d; 110 l, 50 w, 75 d. Boxed heart, waney lower surface. Sampled - Q8317. (E279)
- OB 153 Remains of timber in mortice of OB 155. Not examined. Sampled - Q7673. (E381)
- OB 159 North longitudinal timber of wheel trough with one mortice cut into upper face. Chisel/twybill marks in base of mortice. 2.64 l, 185 w, 340 th. Mortice 130 l, 50 w, 90 d. Boxed heart, lower surface waney. Sampled Q7672. (E280)

### **Tail race**

- OB 147 Longitudinal timber above OB 254. Reused wheel trough timber of period 5? with three mortices cut in one face, one towards each end and one offset towards one end from centre. Spoon bit drill marks (22, 26 dia) in bases of mortices. Timber 3.422m l, 190 w, 150 th. Mortices 220 l, 90 w, 70 d; 264 l, 100 w, 70 d; 268 l, 90 w, 60 d. Boxed heart, lower surface waney. (E390)

## Worked wood (other botanical: OB), continued

- OB 152 Curved timber, one end morticed, groove around external circumference. 1.04m, 180 w, 200 th. (E397)
- OB 154 Longitudinal timber above OB 253. Reused wheel trough timber? with three mortices cut in one face, one towards each end and one offset towards one end from centre. Spoon bit drilled hole (25 dia) at one end of morticed face. Chisel/twybill marks in base of mortice. Timber 3.349m l, 180 w, 180 th. Mortices 230 l, 100 w, 100 d; 230 l, 90 w, 70 d; 235 l, 80 w, 80 d. Chisel marks (25 w) in mortice. Boxed heart, lower surface waney. (E385)
- OB 158, Timbers of south side of tail race. 0.90-3.31m l, 60-140 w, 213, 60-160 th. Various boxed conversions (E416, E895, E897) 470
- OB 151, Timbers of north side of tail race. 0.52-2.64m. l, 60-140 w, 148, 60-160 th. Various boxed conversions (E389, E393, E392, 149, 471 E396)
- OB 275, Stakes retaining north side of tail race. 540-780 l, 40-80 dia. 276, 487 (E468, E469, E822)
- OB 271, Stakes retaining south side of tail race. 420-600 l, 60-140 299, dia. (E387, E440, E439, E401, E1214, E1215) 463, 486, 488, 489

## Period 7, phase 1, mill race Figure 32

### Head race

- OB 80 'Vane' or grill member. Sub-triangular cross-section, no working marks present. 661+ l, 57 w, 15-35 th. Radially cleft. (D301/1)
- OB 89 'Vane' or grill member. Sub-triangular cross-section, tenon continued from thickest edge of intact end, drilled hole (c 25 dia) towards broken end. Fig 32. 710+ l, 60 w, 5-25 th. Tenon 20 l, 16 dia. Radially cleft. (D303/1)
- OB 90 'Vane' or grill member. Sub-triangular cross-section, tenon continued from thickest edge of intact end, drilled hole (c 25 dia) at broken end. Fig 32. 429+ l, 56 w, 3-25 th. Tenon 26 l, 16 dia. Radially cleft. (D303/2)
- OB 91 'Vane' or grill member. Sub-triangular cross-section, tenon continued from thickest edge of intact end, drilled hole (c 25 dia) halfway along length. Fig 32. 935+ l, 65 w, 2-22 th. Tenon 34 l, 20 dia. Radially cleft. (D303/3)

## **Worked wood (other botanical: OB), continued**

- OB 92 Vane' or grill member. Sub-triangular cross section, tenon continued from thickest edge of intact end, drilled hole (20 dia) at broken end. Fig 32. 520+ l, 60 w, 3-32 th. Tenon 33 l., 15 dia. Radially cleft. (D303/4)
- OB 94 Frame member of debris grill? Possibly sub-rectangular cross-section. 260+ l, 118+ w, 20 th. (D303/5)
- OB 492, Collapsed uprights? 615-650 l, 80-160 w, 60-120 th. (D511, 494 D514)

### **Tail race**

- OB133 Collapsed upright. 1.0m l, 40 w, 60 th. (E398)

## ***Valley transect (BAE) structural timbers* Figures 40 and 45**

### **Mill pond drain**

- OB 434 Transverse baseplate of mill pond drain with two mortices cut into the upper face with sloping inner ends and one square hole cut through the upper face. Three drilled holes (25" dia) through upper face, one each at the south, west and east sides of the square hole. Two drilled holes in the north edge, each passing through the sides of a mortice but not continuing through to the south edge of the timber. Two shallow notches cut into the north edge. One drilled hole cut through the north and south edges of the square hole. All holes contain very decayed pegs. Spoon bit drill marks (30 dia) in corner of west mortice. Very badly abraded. Timber 1.94m l, 360 w, 140 th. West mortice 150 l, 100 w, 90 d. East mortice 200 l, 90 w, 120 d. Square hole 280 square. Box halved. Sampled - Q7949. (227, per 3)
- OB 435 Pivot post of mill pond drain mechanism with tenon at lower end and one drilled hole (30+ dia) through the north and south faces of the tenon. Badly abraded, top end missing. Timber 820+ l, 320 w, 235 th. Tenon 250 l, 200 w, 160 th. Boxed heart. (228, per 3)
- OB 436 West diagonal brace of mill pond pivot post with chamfered lower corner and drilled hole (30 dia) immediately above it. Badly abraded, lower end damaged, upper end missing. Timber 560+ l, 100 w, 60 th. Tangentially faced. (229, per 3)



**Worked wood (other botanical: OB), continued**

- OB 437 East diagonal brace of mill pond drain pivot post with chamfered lower corner and drilled hole (30 dia.) immediately above it. Badly abraded upper end missing. Timber 930+ l, 140 w, 80 th. Tangentially faced. (230, per 3)
- OB 438 Upright timber plug of mill pond drain mechanism. Replacement of original plug with chamfered lower end. Upper surfaces badly abraded, upper end missing. Timber 750+ l, 300 w, 250 th, lower end cut to 230 w, 220 th. Boxed heart. Sampled - Q7950. (231, per 4)
- OB 439 South plank of mill pond drain lid with square hole cut through face at south end and two drilled holes (20 dia) through faces along east edge. South end of upper face badly abraded, lower face very badly abraded. Broken into five pieces. Timber 5.30m l, 460 w, 70 th. Hole 280 square. Tangentially faced. Sampled - Q7951. (232, per 3)
- OB 440 Main body of mill pond drain with socket cut into upper face at south end, one drilled hole (20 dia) in upper face between south end and socket, with two more drilled holes (30 dia) cut in upper face, one to each side of the socket. All holes contained badly abraded pegs. Deep regular channel cut into upper face beginning north of the socket and continuing for the length of the timber. One drilled hole (20 dia) with peg cut into the remaining upper face near south end. Single hole (40 dia) drilled in west face at north end contained large peg. Three drilled holes (40 dia) in east face, one towards each end and one midway along face, each containing large peg. Square socket cut in lower face with drilled hole passing through base of socket into channel. Hewing marks (120-140 w) on all surfaces, chisel or twybill marks (25-34 w) in base of large socket. Surfaces of channel abraded. Timber 9.59m l, 520 w, 460 th. Socket in upper face 200 l, 170 w, 150 d. Channel 9.29m l, 370 w, 290 d. Boxed heart, with some corners and north end left waney. Sampled Q7952. (233, per 3)
- OB 441 North plank of mill pond drain lid with hewing marks on upper face. Lower face very abraded. Broken into three pieces. Plank 3.67m l, 450 w, 100 th. Tangentially faced. Sampled - Q7953 (268, per 3)
- OB 442 Plank from pit lining around drain head, very badly abraded and decayed. 175 l, 450 w, 40 th. Radially faced (234, per 4)

## Worked wood (other botanical: OB), continued

### Channel linings and revetments Figure 44

- OB 454 Stake of south mill pond bank revetment. 1.30+m l, 150 dia. Round. Sampled - Q8198. (300, per 3)
- OB 456 Timber of channel lining. Worked branch, one fork cut to form a board, other roughly hewn. Heavily abraded. 1.95+m l, 250 w, 40 th (plank), 160 dia (trunk). Cleft. Sampled - Q8192. (113, per 4)
- OB 457 Plate of channel lining with west end crudely scarfed to adjacent timber OB 460. 1.09+m l, 280 w, 230 th. Box-quartered. Sampled - Q8193. (114, per 4)
- OB 458 Plank of channel lining, east end crudely chamfered, west end sawn away for extraction, upper edge heavily abraded. 700+ l, 570 w, 130 th. Tangentially faced. Sampled - Q8194. (313, per 4)
- OB 459 Plank of channel lining, ends crudely scarfed to adjacent timbers, heavily abraded and rotted. 1.66m l, 240 w, 110 th. Radially faced. (317A, per: 4)
- OB 460 Plate of channel lining, east end crudely scarfed to adjacent timber OB 457, west end sawn away for extraction. Heavily abraded. 1.11+m l, 290 w, 300 th. Box quartered. Sampled - Q8197. (317B, per 4)
- OB 461, 462 Stakes of repair to channel linings. Cut down from radially faced planks. 510-920 l, 190-270 w, 100-140 th. Radially faced. Sampled - Q8915, Q8916. (314, 315, per 3-4)

**Table M49 Mill (BAB): animal bone by period and by 10m squares, by number of fragments**

Period	Area A		Area B		Area C		Area D		Area E		Total	
	I	U	I	U	I	U	I	U	I	U	I	U
1	-	-	10	2	-	-	-	-	3	1	1	3
2	-	5	-	13	-	3	-	-	1	4	1	25
3	4	-	1	1	-	-	-	4	7	45	12	50
4	135	344	14	75	-	3	1	10	35	148	185	580
5	27	74	4	7	1	-	-	3	31	66	63	150
6	-	-	4	12	1	26	3	1	20	136	28	175
7	-	39	15	173	12	105	1	8	53	190	81	515
<b>Total</b>	<b>166</b>	<b>462</b>	<b>48</b>	<b>283</b>	<b>14</b>	<b>137</b>	<b>5</b>	<b>26</b>	<b>150</b>	<b>590</b>	<b>383</b>	<b>1498</b>
<b>Total no.</b>												<b>1881</b>

I: identifiable  
U: unidentifiable

**Table M50 Mill (BAB): representation of species**

**Representation of species by total fragment method**

Species	Per 1	2	3	4	5	6	7	Total
Cattle	7	-	7	101	41	16	64	236
Pig	1	1	1	41	11	3	6	64
Sheep	2	-	2	13	4	4	7	32
Horse	3	-	-	6	5	-	2	16
Fowl	-	-	-	14	1	-	-	15
Goose	-	-	2	5	2	-	-	9
Red deer	-	-	-	1	-	-	2	3
Dog	-	-	-	4	-	-	-	4
Frog/toad	-	-	-	-	-	4	-	4
<b>Total</b>	<b>13</b>	<b>1</b>	<b>12</b>	<b>185</b>	<b>63</b>	<b>28</b>	<b>81</b>	<b>383</b>

**Representation of species by epiphysis only method**

Species	Per 1	2	3	4	5	6	7	Total
Cattle	0	-	4	56	31	8	48	147
Pig	1	0	0	24	6	2	3	36
Sheep	0	-	1	8	0	0	0	9
Horse	0	-	-	4	3	-	1	8
Fowl	-	-	-	13	-	1	-	14
Goose	-	-	1	4	1	-	-	6
Red deer	-	-	-	0	-	-	1	1
Dog	-	-	-	4	-	-	-	4
Frog/toad	-	-	-	-	-	4	-	4
<b>Total</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>113</b>	<b>41</b>	<b>15</b>	<b>53</b>	<b>229</b>

**Representation of species by minimum number of individuals method**

Species	Per 1	2	3	4	5	6	7	Total
Cattle	1	-	2	7	4	2	5	21
Pig	0	0	0	7	2	1	1	11
Sheep	0	-	1	2	0	1	0	4
Horse	0	-	-	1	2	-	1	4
Fowl	-	-	-	2	-	1	-	3
Goose	-	-	1	2	1	-	-	4
Red deer	-	-	-	0	-	-	1	1
Dog	-	-	-	1	-	-	-	1
Frog/toad	-	-	-	-	-	1 or 2	-	1 or 2
<b>Total</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>22</b>	<b>9</b>	<b>6 or 7</b>	<b>8</b>	<b>50 or 51</b>

**Table M51 Mill (BAB): representation of skeletal elements**

Cattle	Per 1	2	3	4	5	6	7	Total
horn core				2				2
upper orbit				3				3
lower orbit				4			1	5
lower orbit+maxilla							1	1
occipital condyle				2				2
skull fragment				2	1			3
maxilla				3				3
mandible			1	6	1	1	3	12
loose teeth	2			6	2	3	5	19
scapula D			1	2			1	4
scapula S				2	2	1	1	6
humerus D				3	3		3	9
humerus S	1		1			1	1	4
radius P				3	2		1	6
radius D					1	2	2	5
radius S	1			4	1			6
ulna P				1				1
ulna S				1				1
metacarpal P			1	1	1	1	5	9
metacarpal D				3		1	4	8
first phalange	1			7	7	2	5	22
second phalange				1		1	5	7
pelvis	1			6	1	1	4	13
femur D				1				1
femur P+D				1*				1
femur S				3			1	4
tibia P				3	1		2	6
tibia D				4	1		6	11
tibia P+D				1*				1
tibia S			1	1				2
calcaneum P				2			1	3
calcaneum P+D				1*				1
calcaneum S				4	1	1	5	11
astragalus				3(1*)	2		4	9
metatarsal P				4	4		1	9
metatarsal D			2	6	5			13
metatarsal P+D							1	1
axis	1				2			3
cervicle vertebra				2	1		1	4
thoracic vertebra				3	1			4
sacrum				2				2
carpal/tarsal						1		1
<b>Total</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>102</b>	<b>41</b>	<b>16</b>	<b>64</b>	<b>237</b>

**Table M51 continued**

Pig	Per 1	2	3	4	5	6	7	Total
maxilla	1	1		5				7
mandible				14	2	2	1	19
loose teeth			1	3	1		2	7
scapula D				1		1		2
humerus D				2			1	3
humerus S				1	2			3
ulna S					1			1
metacarpal					2			2
first phalange				3				3
second phalange				1				1
pelvis							1	1
femur D				1				1
metatarsal P					1			1
metatarsal P+D				3	2			5
carpal/tarsal				7			1	8
<b>Total</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>41</b>	<b>11</b>	<b>3</b>	<b>6</b>	<b>64</b>
<b>Sheep</b>	<b>Per 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>Total</b>
maxilla				1				1
mandible				1		1	1	3
loose teeth	2			2	2		1	7
scapula D				1				1
scapula S							1	1
humerus D						1		1
humerus S							1	1
radius D				1				1
radius S			1				1	2
first phalange				1	1			2
second phalange				3				3
third phalange				2				2
pelvis				1				1
tibia P					1			1
tibia			1			1	1	3
metatarsal P						1		1
metatarsal D					1			1
metatarsal P+D					1			1
metatarsal S				1				1
lumbar vertebra				1			1	2
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>15</b>	<b>6</b>	<b>4</b>	<b>7</b>	<b>36</b>

**Table M51 continued**

Horse	Per 1	2	3	4	5	6	7	Total
loose teeth	3							3
radius S				1				1
metacarpal P					1			1
metacarpal D				1	2			3
first phalange				1				1
third phalange					1			1
tibia P							1	1
tibia D				1			1	2
tibia S				1				1
calcaneum				1				1
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>15</b>

Fowl	Per 1	2	3	4	5	6	7	Total
coracoid				1		1		2
scapula				1				1
humerus P				2				2
radius P				2				2
radius D				1				1
ulna P				1				1
carpo metacarpal P+D				1				1
first phalange				1				1
femur P				1				1
tibia P+D				1				1
tibia S				1				1
metatarsal P+D				1				1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>15</b>

Goose	Per 1	2	3	4	5	6	7	Total
scapula D			1					1
radius S				1				1
radius D				2				2
metatarsal P+D				1				1
metatarsal S			1					1
metacarpal P				1				1
metacarpal S					1			1
tibia P+D					1			1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>9</b>

**Table M51 continued**

Dog	Per 1	2	3	4	5	6	7	Total
scapula P+D				2(1*)				2
humerus P+D				2(1*)				2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
Red deer	Per 1	2	3	4	5	6	7	Total
antler				1				1
radius P+D							1	1
ulna							1	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>
Frog/toad	Per 1	2	3	4	5	6	7	Total
long bone						4		4
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>4</b>

**D: distal**  
**P: proximal**  
**S: shaft**  
**\*: articulated**



**Table M52 Mill (BAB): mandible wear stages (MWS)  
(the numerical value)**

**Period 2**

Number	Tooth wear stage			Lowest MWS	Highest MWS
	M1	M2	M3		

<b>Pig</b>					
1	f	-	-	20	27

**Period 3**

Number	Tooth wear stage			Lowest MWS	Highest MWS
	M1	M2	M3		

<b>Sheep</b>					
1	-	g	-	28	41

**Period 4**

Number	Tooth wear stage			Lowest MWS	Highest MWS
	M1	M2	M3		

**Cattle**

1	j	-	-	29	41
1	k	-	-	34	44
1	l	-	-	41	47
2	-	k	-	42	47
1	k	k	g	42	-
1	l	-	k	46	-
1	n	k	-	46	52
1	o	l	k	50	50

**Pig**

1	d	a	-	17	17
1	n	k	-	40	42
1	-	n	c	36	38
1	j	-	-	25	34
1	d	a	-	21	31
1	g	b	-	21	24
1	e	a	-	17	18
1	a	-	-	15	18

**Sheep**

1	m	h	g	28	28
1	-	-	j	47	49

**Table M52 continued**

**Period 5**  
**Number** **Tooth wear stage** **Lowest MWS** **Highest MWS**  
 M1 M2 M3

**Cattle**  
 1 - k - 42 47  
**Pig**  
 1 g c erupting 22 22  
 1 c - - 9 17  
**Sheep**  
 1 - g - 27 41  
 1 - d - 21 29

**Period 6**  
**Number** **Tooth wear stage** **Lowest MWS** **Highest MWS**  
 M1 M2 M3

**Cattle**  
 1 - g - 28 39  
 3 k - - 34 44  
 1 - j - 38 42  
 1 - k - 42 47  
**Pig**  
 1 - d - 24 31  
 1 - j f 40+ -

**Period 7**  
**Number** **Tooth wear stage** **Lowest MWS** **Highest MWS**  
 M1 M2 M3

**Cattle**  
 1 e - - 12 14  
 1 - f - 25 34  
 1 - g c 32 35  
 1 k g - 34 39  
 1 k j - 38 41  
 1 m - - 45 51  
 1 - - k 46 50  
**Sheep**  
 1 - c a - -  
 1 - h - 38 42

**Table M53 Mill (BAB): evidence for age at death**

	Bone	Approximate age at fusion	Number F	Number UF
<b>Period 3</b>				
Cattle	scapula D	> 7-10M	1	0
	metatarsal D	> 2.25-3Y	2	0
Goose	scapula D		1	0
<b>Period 4</b>				
Cattle	scapula D	> 7-10M	2	0
	pelvis/acetabulum	> 7-10M	5	0
	radius P	< 12-18M	0	1
	humerus D	> 12-18M	1	0
	radius P	> 12-18M	2	0
	first phalange	> 1.5Y	6	0
	second phalange	> 1.5Y	1	0
	tibia P+D	< 2-2.5Y	0	1*
	metacarpal D	> 2-2.5Y	2	0
	tibia D	> 2-2.5Y	4	0
	metacarpal D	< 2.25-3Y	0	1
	metatarsal D	< 2.25-3Y	0	3
	metatarsal D	> 2.25-3Y	3	0
	femur P+D	< 3-3.5Y	0	1*
	calcaneum P+D	< 3-3.5Y	0	2(1*)
	calcaneum P	> 3-3.5Y	4	0
	ulna	> 3.5-4Y	1	0
	femur D	> 3.5-4Y	1	0
	tibia P	> 3.5-4Y	3	0
Pig	scapula	> 1Y	1	0
	humerus D	> 1Y	2	0
	second phalange	> 1Y	1	0
	first phalange	< 2Y	0	1
	first phalange	> 2Y	2	0
	metatarsal D	< 2.25Y	0	3
	femur D	< 3.5Y	0	1
Sheep	scapula D	> 6-8M	1	0
	second phalange	> 13-16M	2	0
Horse	first phalange	> 13-15M	1	0
	metacarpal D	> 15-18M	1	0
	tibia D	> 20-24M	1	0
	calcaneum P	> 3Y	1	0
Dog	scapula	> 6-7M	2	0
	humerus	> 15M	2	0

**Table M53 continued**

	Bone	Approximate age at fusion	Number F	Number UF
<b>Period 4</b>	<b>continued</b>			
<b>Fowl</b>	coracoid		1	0
	scapula		1	0
	humerus P		2	0
	radius P		2	0
	radius D		0	1
	ulna P		1	0
	carpo metac P+D		1	0
	first phalange		1	0
	femur P		1	0
	tibia P		0	1
	tibia D		0	1
	metatarsal D		1	0
<b>Goose</b>	radius D		2	0
	metacarpal P		1	0
	metatarsal D		1	0
<b>Period 5</b>				
<b>Cattle</b>	scapula	> 7-10M	1	0
	humerus D	> 12-18M	1	0
	radius P	> 12-18M	2	0
	first phalange	> 1.5Y	5	0
	tibia D	> 2-2.5Y	1	0
	metatarsal D	< 2.25-3Y	0	2
	metatarsal D	> 2.25-3Y	3	0
	calcaneum	> 3-3.5Y	1	0
	radius D	> 3.5-4Y	1	0
	tibia P	> 3.5-4Y	1	0
<b>Pig</b>	metatarsal D	< 2.25Y	0	1
	metatarsal D	> 2.25Y	1	0
	ulna	> 3-3.5Y	1	0
<b>Sheep</b>	first phalange	> 13-16M	1	0
	metatarsal D	< 20-28M	0	2
	tibia P	> 3-3.5Y	1	0
<b>Horse</b>	metacarpal D	< 15-18M	0	1
	metacarpal D	> 15-18M	1	0
<b>Goose</b>	tibia P+D		1	0

**Table M53 continued**

	Bone	Approximate age at fusion	Number F	Number UF	
<b>Period 6</b>					
Cattle	pelvis/acetabulum	> 7-10M	1	0	
	first phalange	> 1.5Y	1	0	
	second phalange	> 1.5Y	1	0	
	metacarpal D	> 2-2.5Y	0	1	
	calcaneum P	> 3-3.5Y	1	0	
	radius D	< 3.5-4Y	0	1	
	radius D	> 3.5-4Y	1	0	
Pig	scapula D	> 7-10M	1	0	
Sheep	humerus D	> 10M	1	0	
<b>Period 7</b>					
Cattle	scapula D	> 7-10M	1	0	
	pelvis/acetabulum	> 7-10M	3	0	
	humerus D	< 12-18M	0	1	
	humerus D	> 12-18M	2	0	
	radius P	> 12-18M	1	0	
	second phalange	< 1.5Y	0	1	
	first phalange	> 1.5Y	5	0	
	second phalange	> 1.5Y	3	0	
	metacarpal D	> 2-2.5Y	4	0	
	tibia D	> 2-2.5Y	6	0	
	metatarsal D	< 2.25-3Y	0	1	
	calcaneum P	< 3-3.5Y	0	1	
	radius D	< 3.5-4Y	0	2	
	tibia P	< 3.5-4Y	0	1	
	tibia P	> 3.5-4Y	1	0	
	Pig	humerus D	> 1Y	1	0
		pelvis/acetabulum	> 1Y	1	0
Horse	tibia D	< 20-24M	0	1	
Red deer	radius P		1	0	
	radius D		1	0	

M: month

Y: years

<: less than

>: greater than or equal to

**Table M54 Mill (BAB): bone measurements**

<b>Period 4</b>							
<b>Element</b>	<b>MR</b>	<b>BD</b>	<b>BP</b>	<b>GL</b>	<b>SD</b>	<b>LG</b>	<b>BG</b>
<b>Cattle</b>							
radius	-	68.1	-	-	-	-	-
metacarpal	-	61.6	-	-	-	-	-
first phalange	62	22	23	-	-	-	-
first phalange	-	30	31	-	-	-	-
first phalange	-	-	26	-	-	-	-
first phalange	-	-	31.5	-	-	-	-
metatarsal	-	41.5	40.1	199	22.1	-	-
metatarsal	-	44	-	-	-	-	-
metatarsal	-	52*	-	-	-	-	-
<b>Pig</b>							
first phalange	-	-	31	-	-	-	-
<b>Sheep</b>							
third phalange	-	-	15.6	-	-	-	-
radius	-	27.6	-	-	-	-	-
<b>Dog</b>							
scapula	-	-	-	-	-	-	19.2
<b>Period 5</b>							
<b>Element</b>	<b>MR</b>	<b>BD</b>	<b>BP</b>	<b>GL</b>	<b>SD</b>	<b>LG</b>	<b>BG</b>
<b>Cattle</b>							
scapula	-	-	-	-	-	54.4	44.2
first phalange	-	-	26	-	-	-	-
first phalange	-	-	23	-	-	-	-
astragalus	-	38	-	-	-	-	-
metatarsal	-	41.1	-	-	-	-	-
metatarsal	-	54.2	-	-	-	-	-
<b>Sheep</b>							
first phalange	-	-	9	-	-	-	-
<b>Period 6</b>							
<b>Element</b>	<b>MR</b>	<b>BD</b>	<b>BP</b>	<b>GL</b>	<b>SD</b>	<b>LG</b>	<b>BG</b>
<b>Pig</b>							
scapula	-	-	-	-	-	-	20.2

**Table M54 continued**

<b>Period 7 Element</b>	<b>MR</b>	<b>BD</b>	<b>BP</b>	<b>GL</b>	<b>SD</b>	<b>LG</b>	<b>BG</b>
<b>Cattle</b>							
pelvis	-	55.8	-	-	-	-	-
tibia	-	61.7	-	-	-	-	-
metatarsal		54.1	-	-	-	-	-
metatarsal	-	-	-	180	-	-	-
metacarpal	-	-	50.6	-	-	-	-
radius	-	-	54	-	-	-	-
first phalange	-	-	20.4	-	-	-	-

**MR: length of molar row**

**BD: greatest breadth of distal epiphysis**

**BP: greatest breadth of proximal epiphysis**

**GL: greatest length**

**SD: smallest breadth of diaphysis**

**LG: length of glenoid cavity**

**BG: breadth of glenoid cavity**

**Table M55 Valley transect (BAE): representation of species**

<b>Species</b>	<b>TF</b>	<b>EO</b>	<b>MNI</b>
<b>Cattle</b>	<b>7</b>	<b>5</b>	<b>1</b>
<b>Sheep</b>	<b>2</b>	<b>2</b>	<b>1</b>
<b>Pig</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>Horse</b>	<b>2</b>	<b>0</b>	<b>1</b>
<b>Fowl</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Goose</b>	<b>2</b>	<b>2</b>	<b>1</b>
<b>Bird</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>Total</b>	<b>16</b>	<b>10</b>	<b>5</b>

**TF: total fragments**

**EO: epiphysis only**

**MNI: minimum number of individuals**



**Table M56 Valley transect (BAE): representation of skeletal elements, with evidence for age at death**

Period	Context	Element	Number	Fused	Age
<b>Cattle</b>					
1	54	metatarsal P	1	yes	
1	62	horn core	1	-	
1	208	femur	1	-	
?3	275	horn core	1	-	
3-4	49	mandible	1	-	
3-4	49	metacarpal P	1	yes	
4-5	117	calcaneum P	1	yes	3-3.5Y
<b>Pig</b>					
4-5	117	mandible	1	-	
<b>Sheep</b>					
4-5	117	tibia P+D	1	no	< 1.5-2Y
4-5	116	metatarsal D	1	no	< 20-28M
<b>Horse</b>					
4-5	196	metatarsal	1	-	
4-5	117	tooth	1	-	
<b>Fowl</b>					
1	62	femur P	1	yes	
<b>Goose</b>					
5?	104A	humerus D	1	yes	
4-5	117	humerus D	1	-	
<b>Bird (unidentified)</b>					
5-6?	303	furcula	1	-	

**Table M57 Valley transect (BAE): mandible wear stages (MWS)  
(the numerical value)**

Period	Context	Tooth wear stage	MWS
Cattle			
3-4	49	M1=n, M2=k	46?
4-5	117	M1=c, M2=C	9

**Table M58 Tail race (BAH): representation of species**

Species	TF	EO	MNI
Cattle	21	12	2
Sheep	3	1	1
Pig	3	0	1
Unident s.m	1	1	1
Fowl	2	2	1
Goose	4	3	1
<b>Total</b>	<b>34</b>	<b>19</b>	<b>5</b>

TF: total fragments

EO: epiphysis only

MNI: minimum number of individuals

Unident s.m: unidentified small mammal

**Table M59 Tail race (BAH): representation of skeletal elements, with evidence for age at death**

Period	Context	Element	Number	Fused	Age
<b>Cattle</b>					
3	22	metacarpal D	1	yes	≥ 2-2.5Y
4-5	11	tooth	1	-	-
4-5	11	pre-maxilla	1	-	-
4-5	21	pre-maxilla	1	-	-
4-5	11	mandible	2	-	-
4-5	11	cervical vertebra	1	-	-
4-5	11	thoracic vertebra	1	-	-
4-5	11	scapula	1	-	-
4-5	11	humerus D	1	yes	12-18M
4-5	11	radius	1	-	-
4-5	11	metacarpal D	2	yes	≥ 2-2.5Y
4-5	11	first phalange	2	yes	≥ 1.5Y
4-5	11	femur D	1	no	< 3.5-4Y
4-5	11	tibia P	1	yes	≥ 3.5-4Y
4-5	11	metatarsal P	1	yes	-
4-5	11	metatarsal D	2	yes	≥ 2.25-3Y
4-5	11	metatarsal P+D	1	yes	≥ 2.25-3Y
<b>Pig</b>					
4-5	11	tooth	1	-	-
4-5	11	maxilla	1	-	-
4-5	21	atlas	1	-	-
<b>Sheep</b>					
3	22	metatarsal P	1	yes	-
4-5	11	radius	1	-	-
4-5	11	tibia	1	-	-
<b>Unidentified small mammal</b>					
3	22	pelvis	1	yes	-
<b>Fowl</b>					
4-5	21	ulna	1	yes	-
4-5	21	tarso metatarsal	1	yes	-
<b>Goose</b>					
4-5	11	skull	1	-	-
4-5	21	ulna	1	yes	-
4-5	11	carpo metacarpal	1	yes	-
4-5	11	tarso metatarsal	1	no	-

**Table M60 Tail race (BAH): mandible wear stages (MWS)  
(the numerical value)**

**Cattle**

Period Context TWS Lowest MWS Highest MWS

4-5 11 M1=f 18 19

**Table M61 Tail race (BAH): bone measurements**

Period Context Element Code Value

**Cattle**

3 22 metacarpal BD 61.2  
 4-5 11 first phalangeGL 48.9  
 4-5 11 first phalangeGL 55.5  
 4-5 11 metacarpal BD 52.1  
 4-5 11 metatarsal GL 176  
 SD 21.1  
 4-5 11 metatarsal BD 51.1

**Sheep**

3 22 metatarsal BP 20.5  
 BD 20.1

BD: greatest breadth of distal epiphysis  
 BP: greatest breadth of proximal epiphysis  
 GL: greatest length  
 SD: smallest breadth of diaphysis