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FISH REMAINS FROM HAMWIC (SAXON SOUTHAMPTON) : SIX DIALS VARIABILITY STUDY

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1. INTRODUCTION

2135 fish bones were examined from a variety of contexts at Six Dials, representing typical pits, wells, yards, the boundary ditch, a bone working pit, a layer of unusual preservation in a pit and layers of house occupation. These contexts were selected as part of a study of variability in animal bone assemblages from different parts of the Six Dials Site (Bourdillon, 1984).

Most of the fish remains were recovered from soil samples taken systematically during the excavations. A few larger fish bones were collected by hand during trowelling. A 5 litre bulk sample from each context was processed for the recovery of small environmental material by wet sieving. Flots were washed through a 0.6mm mesh, and residues through a 1mm mesh. The majority of fish remains were sorted from the residues caught by the 1mm mesh. Not all soil samples produced fish remains (Table 1), and the number of fish remains recovered in a standard 5 litre sample varied considerably.

Table 2 shows the total number of fragments of each species or group of fish for the different context groupings. In many cases, a large proportion of the fish bones were unidentifiable fragments. These are listed as 'X' in the archive. In addition, a small number of fish bones could not be identified owing to lack of comprehensive comparative material. These bones could probably be identified to species given more time and better facilities. They have been listed in the archive as 'UN', and are shown in the tables as 'not identified'. These bones are from very small fish and occur infrequently, and are therefore unlikely to have been of great economic importance. They probably represent freshwater or estuarine shore species, or perhaps the stomach contents of some of the larger fish found at the site.

Most context groupings produced only very small samples of fish bone. The largest identifiable samples derived from pits, wells and the typical segment of the boundary ditch. In these cases the number of fragments of each species or group of fish has been expressed as a percentage of the identifiable bone in Table 2.

2. SPECIES REPRESENTATION

Pit Contexts

718 fragments of fish remains derived from pit contexts, of which 79% were unidentifiable. Eel was the most common species (by fragment count), comprising 60% of identifiable bones. 26 bones could not be identified to species. All other species were represented by fewer than 10 bones each. These included herring, salmon or trout, bass, plaice, flounder and flatfish (not further identified). (Table 3).

Fish remains were examined from four pits (F 1008, F 1009, F 1010 and F 2013). Table 4 lists the layers of each pit which produced fish remains, the number of fish bones, and the range of species represented. The largest sample of fish bones (420 fragments), and the greatest variety of fish (at least 8 species or groups) came from layer (9) of pit F 1010 (context 4420). The next largest sample of fish bones (106 fragments) derived from layer (1) of pit F 2013 (context 3293). However, this only produced two identifiable fish - eel and plaice/flounder. In contrast, layer (3) of pit F 1009 (context 4313) produced only 49 fish bone fragments, but at least 7 species were represented.

Well Contexts

220 fragments of fish bone were examined from two wells. 44.5% of the fragments were unidentifiable. Table 5 shows fish species/group and skeletal element representation for the well material as a whole. Table 6 lists the total number of fish bones from each individual context and the variety of fish represented.

Only 23 fish bone fragments derived from well F 2014. 3 layers within this well produced fish, but in each case the sample was very small. At least two species, including flounder, were present. In contrast, the early shaft or well F 2016 (layer (6), context 3546) produced 197 fish bone fragments and at least 8 species of fish (including eel, herring, salmon or trout, bass, plaice, flounder and unidentified flatfish).

Yard Contexts

Three samples taken from a yard area at the Stoner Motors site (context 242) were included in the study. Only two fish bones were recovered (vertebrae of an eel and a sole).

Only 17 fragments of fish bone were recovered from the Six Dials yard contexts examined (all F 2013), 8 of these were recovered by hand, and only 9 bones derived from soil samples - from contexts 4354 (layer (20)) and 4360 (layer (23)). At least six fish species were represented including common eel, herring, bass, flounder and sole (Tables 7 and 8).

Ditch Contexts

Primary fill. Sixteen soil samples were examined, but only six produced any fish.

Only 24 fragments of fish bone came from these contexts and only three species were identified (common eel, herring and small gadoid, probably pouting). The largest sample (10 fragments) came from context 10117. However, none of these were identifiable. (Tables 9 and 10).

Typical segment. 19 soil samples were examined and 15 of these produced fish remains. 827 fish bone fragments were recovered, the largest sample from any group of contexts in the study (Table 11). The vast majority of the fish bone (737 fragments) derived from context 11442, which also produced the greatest variety of species (including common eel, herring, salmon or trout, and flounder and a small gadoid, probably ling). All other contexts produced very few fish bones (between 26 and 1 fragment). (Table 12).

Overall, eel was the most commonly occurring species (77% of all fragments) followed by herring (13.4% of all fragments). 14 bones remained unidentified and all other species were represented by fewer than 5 bones each.

Context 10015. This context was separated out because it was thought to represent a pit dug into the ditch fill. Although 246 bones were produced, over 200 of these were unidentifiable fin rays and fragments. At least five species were represented among the remaining 44 fragments, including common eel, herring, cod family, sea bream and flatfish (Table 13).

Bone working pit. Only 12 fragments were recovered from two contexts in F 1005. One of these came from normal excavation, the remainder from sieving. Only 5 bones were identifiable to species or group of fish, which included common eel and plaice. (Table 14).

Brown pit preservation. Particular attention was paid to layer (17) in pit F 2006 (context 5289), as this was thought to display unusual conditions of preservation. Only 32 fish bones were recovered from the soil sample, and only common eel and flatfish could be identified. The majority of the bones (28 fragments) were unidentifiable (Table 15).

House occupation. Three samples were taken from context 11286, a house occupation level. Only 38 fish remains were recovered in total (16, 18 and 4 fragments from each of the 3 samples respectively). The vast majority of the material was herring (19 fragments), otherwise only common eel and unidentified flatfish were represented. (Table 16).

Gully. A single soil sample from context 5507 (F 2082 - a gully) produced no fish remains.

3. SIZE REPRESENTATION

Estimates of the original length of the fish represented in the Six Dials samples were made by matching the archaeological material against modern comparative skeletons from fish of known length. These length estimates are listed in the archive, and are intended only as an approximate guide to the probable size of the fish, to the nearest 0.05m.

In all contexts the majority of eel bones represented fish with estimated lengths between 0.30-0.35m; only two eel bones suggested very tiny fish with lengths under 0.2m. A few bones represented fish with lengths between 0.2-0.3m. In several contexts there were one or two bones suggesting larger fish with lengths over 0.35m. The largest eel bone came from a well context (3546, F 2016 layer 6). This was a precaudal vertebra which probably derived from a fish around 0.75m in length.

There was very little variation in the size of herring present in the samples. The vast majority of herring bones derived from fish with lengths between 0.2-0.25m. Two pit contexts produced a few extremely small herring family vertebrae, suggesting fish with lengths well under 0.1m. These were thought to be either sprats or immature herrings. A further pit context produced three herring bones probably derived from fish around 0.1m in length. Apart from these few cases of tiny herring, all others lay within the 0.2-0.25m length range.

Three conger eel bones were found. Two of these probably derived from fish with lengths around 1.5m. The third bone suggested a much smaller fish less than 0.3m in length. The majority of bass bones indicated fish with lengths around 0.5-0.6m. One bone suggested a larger fish (c.0.7m in length) and 3 bones suggested smaller fish (0.2-0.3m in length).

Estimated lengths for salmon or trout lay in the range 0.15m-0.3m. A single sea bream bone probably came from a 0.2m long fish, and a single mackerel bone probably derived from a 0.3m long fish. Two very small cod family bones indicated fish with lengths less than 0.15m (including the tentatively identified ling). The single bone probably representing a pouting came from a fish less than 0.25m in length. A pollack and an otherwise unidentified gadoid bone both suggested fish with lengths around 0.3m. A single cod bone suggested a fish with a length just less than 0.4m.

A variety of different sizes was indicated by flatfish bones. Flounder ranged in estimated size from very small fish < 0.1m in length to fish with lengths around 0.35m. Most plaice were larger with length estimates between 0.25m to 0.4m. Two plaice or flounder bones probably came from small fish (less than 0.2m in length) while the remaining three suggested fish with estimated lengths 0.27m, 0.35m and 0.4m respectively. A single sole bone suggested a fish around 0.15m in length. Unidentified flatfish were of a variety of sizes with length estimates ranging from 0.3m to 0.15m.

All other fish bones indicated medium, small or very tiny fish (including bones not identified through lack of comparative material).

4. SKELETAL ELEMENT REPRESENTATION

Only a limited range of skeletal elements were present. The pattern of skeletal element representation is consistent with differential preservation and, in most cases, small sample size. In common with fish remains from a number of archaeological sites, the assemblage is dominated by unidentifiable fragments, vertebrae and fin rays. Vertebrae and fin rays are present in large numbers in the fish skeleton and are relatively robust. They are more likely to survive intact in the soil than other less frequently occurring and more fragile skeletal elements. For example, the second most common species in the samples was herring. From a total of 99 identified herring bones, 95 were vertebra. A single ceratohyal and three prootics (skull bones) suggest that at least some herring heads were originally present. Herring prootics are particularly robust bones which are more likely to survive than any other herring head bone.

From a total of 372 eel bones, 334 were vertebrae. The remaining 38 represented a number of different head bones, the majority of which were relatively robust.

A similar picture emerges for flatfish skeletal element representation. From a total of 36 flatfish bones, 28 are vertebrae and the remaining 8 represent the more robust head bones of the flatfish skeleton.

Fin rays were common in most samples. However, they are not easily diagnostic to species and could have derived from any of the fish represented at the site. A single fin ray from a sea bream was identified in ditch context 10015. Other fish present were represented by very few bones and the relative frequency of skeletal elements is probably distorted by the small sample sizes. Salmon or trout, and most of the gadoid fish in the samples were represented only by vertebrae. Cod was represented by a single supraclavicle. Conger eel was represented by two head bones (branchiostegal and urohyal) and a single vertebra. Mackerel was represented by a single dentary. The relative frequency of skeletal elements of bass contrasts with that of other species. Of 34 bass bones, 26 were scales. Only one vertebra was found, and the remaining bones were head elements. Bass have large scales which probably survive better in the soil than those of other species. Differential preservation could therefore explain this particular pattern of skeletal element representation. However, the low incidence of bass vertebrae compared to head bones is probably attributable to some other cause such as rubbish disposal practices. Similarly, among the 62 bones not identified to species owing to lack of adequate comparative material only 13 were vertebrae. 11 were scales, many of which were thought to be bass or mullet), 3 were fin rays, and the remainder were head bones. Such a pattern suggests differential rubbish disposal, rather than simply poor preservation.

5. FRAGMENTATION AND BONE CONDITION

Most of the identifiable bones were well preserved. More than half the bone was present in most cases. In several contexts a very small number of bones were visibly eroded and several small vertebrae were squashed laterally. This may indicate that at least some small fish bones had been eaten and the bone had become softened by the digestive process. However, vertebrae squashed in this way were relatively rare in the assemblage. No teeth marks, either human or non-human, were identified on any of the fish bone. No butchery marks were present on any bone. A small number of bones in several contexts were stained. Several herring and eel bones in the house occupation layer (context 11286) appeared to be very darkly stained or perhaps burnt. In this context several herring vertebrae were thought likely to have originated from the same fish.

6. INTER-CONTEXTUAL VARIABILITY

The only clearly visible differences in the fish bone assemblages from different context types were in the relative abundance of fish recovered in each standard 5 litre soil sample, and the variety of species represented. As outlined above, the highest concentrations of fish remains occurred in individual pit, well and ditch samples. These contexts also produced the widest range of species. Therefore, taken as a whole, pit, well and ditch segment contexts produced a higher number of fish remains, and a greater diversity of species than yards, the ditch primary fill, ditch context 10015, the bone working pit, the unusual brown preservation in pit F 2006, or the house occupation. No fish remains were recovered from the gully. However, many individual ditch, pit and well contexts produced as few or fewer fish bones than other context types.

There are several possible explanations for this patterning. Some of it is probably due to differential preservation in different contexts. For example, fish bones buried quickly in pit deposits are more likely to have survived than fish bones left lying around on exposed yard surfaces. Some soil conditions are likely to have been more favourable than others for the survival of fish bone. It is possible that the soil sampling procedures used on the site failed to detect densely concentrated pockets of fish bone in all cases. Only a limited amount of soil from each context was sieved, and the fish recovered in the soil samples was not necessarily representative of the layer as a whole. However, the variation between contexts in the number of fish bones recovered was so marked that it seems likely that at least some of this patterning is attributable to rubbish disposal practices. The general impression gained is that concentrated pockets of fish remains were dumped in some pit, ditch and well layers while other contexts genuinely contained only small quantities of fish bone, much of which may have been residual.

Bourdillon and Coy noticed a similar pattern at Melbourne Street (1980, 118) where fish remains and other small environmental material appeared to be concentrated in particular features and layers. At Melbourne Street, however, no systematic sieving was carried out, which complicated the interpretation of fish remains from the site.

As noted above, the identifiable Six Dials fish remains had the appearance of being well preserved, with little visible erosion and many whole and nearly whole bones surviving. However, the low occurrence or complete absence of very friable bones and the predominance of robust bones in the samples suggests poor preservation. This apparent contradiction could be explained by the way in which fish bones disintegrate to become unidentifiable. It is possible that very thin plate-like fish bones are easily broken up into small unidentifiable fragments by mechanical action, such as trampling or crushing, which renders them unidentifiable even before chemical or physical weathering processes have set in. Most mammal bones and the more compact, robust fish bones would probably survive fairly superficial mechanical action. This could explain why the Six Dials fish bones (and those studied by Bourdillon and Coy at Melbourne Street) had a well-preserved appearance, while at the same time only a limited range of skeletal elements were identified.

When differences in sample size are taken into account the range of species present in different context types is very similar. Some species found in pits were not found in wells or ditches and vice versa. However, the number of bones involved are so few that it would be unwise to draw any firm conclusions.

In all other aspects the material from different context types is very similar: in the relative representation of skeletal elements (taking into account sample sizes); the dominant species (eel, herring and flatfish); the size of fish represented (which are remarkably similar throughout); and the condition of the bones. Although 30 fragments of bass made up 24.6% of the identifiable bones in well contexts, it should be remembered that 26 of these fragments are scales.

The scales may well have originated from the same fish, and the assemblage may be atypical of the rest of the site. This has tended to exaggerate the relative numerical importance of bass at the expense of herring and eel. However, the samples are so small that it is difficult to make any reliable comments on the relative importance of different species.

7. FISHING ACTIVITY AND COMPARISON WITH MELBOURNE STREET

Although there are some differences in the species represented at Six Dials and at Melbourne Street, the overall picture of fishing activity conveyed by the material from the two sites is very similar. In addition, the Six Dials variability study failed to detect all fish species present at Six Dials. A number of other fish (including thornback ray *Raja clavata*, gilthead sea bream *Sparus aurata* and grey mullet sp. *Mugilidae*) have been recovered from pit contexts elsewhere (Colley, 1983). These species were also present at Melbourne Street.

Perhaps the most interesting difference between the Six Dials and Melbourne Street material is that herring were common at Six Dials, but absent at Melbourne Street. This difference could however be caused by differential retrieval between the two sites, and may have no particular significance in terms of fishing activity.

In their discussion of the Melbourne Street fish remains, Bourdillon and Coy noted that the inhabitants of Hamwic did not seem to have been particularly adventurous fishermen. The majority of species at Melbourne Street could be caught today from the Itchen estuary where Hamwic was sited (1980, 120).

The Six Dials study supports this general picture. Several species such as eel, flatfish, bass and salmon or trout could have been taken in estuarine conditions close to the Hamwic site using methods such as hook and line, nets or traps. Other species such as mackerel, conger eel, small gadoids, sea bream and herring, which are common in slightly deeper waters, may also have been taken from the shore. However, they are more likely to have been taken from a small boat working fairly close to the shore. Conger eel are usually taken from rocky areas or around wrecks using a hook and line. Although herring could also have been taken using a hook and line they are more easily taken with a net. There is no direct archaeological evidence at the site for fishing methods.

The impression gained is of a fairly consistent exploitation of small to medium sized fish to supplement and add variety to the diet.

Occasional larger specimens of conger eel, bass, eel and flatfish would have contributed significantly to the diet in terms of meat weight. However, fishing appears to have been a rather casual affair, not involving a great deal of effort and certainly not aimed at producing a surplus.

It is impossible to be certain if all of the Hamwic fish were caught locally. Certainly all the fish could have been taken in the vicinity of the site with relatively little effort. In terms of resource availability there would have been no particular need to import fish from elsewhere. While social or economic conditions may have dictated otherwise, there is at present insufficient archaeological evidence to prove the question either way.

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Table 1

The relative occurrence of fish remains in Six Dials soil samples

Context type	No. of soil samples examined	No. of soil samples producing fish bones
Pits	15	14
Wells	7	4
Yards*	6	3
Ditch (Primary fill)	16	6
Ditch (Typical section)	19	15
Ditch (Context 10015)	1	1
Bone Working Pit	2	2
Pit Brown Preservation	1	1
Gully	1	0
House Occupation	3	3
TOTAL	71	49

* includes 3 samples from Stoner Motors

Table 2. Six Dials variability study. Number of fish bones recovered from each context type

	PITS		WELLS		YARDS	DITCH PRIMARY FILL	DITCH SEGMENT		DITCH CONTEXT 10015	BONE WORKING PIT	BROWN PIT PRESERVN.	HOUSE OCCUPN.	TOTAL
	F	%ID	F	%ID	F	F	F	%ID	F	F	F	F	F
COMMON EEL *Anguilla anguilla*	90	(60.0)	31	(25.4)	3	1	201	(77.0)	37	3	3	4	372
CONGER EEL *Conger conger*	3	(2.0)											3
HERRING *Clupea harengus*	7	(4.7)	32	(26.2)	2	3	35	(13.4)	1			19	99
HERRING FAMILY *Clupeidae*	6	(4.0)											6
SALMON OR TROUT *Salmo sp.*			1	(0.8)			3	(1.1)					4
COD *Gadus morhua*	1	(0.7)											1
POLLACK *Pollachius pollachius*	1	(0.7)											1
LING *Molva molva*							?1	(0.4)					?1
POUTING *Trisopterus luscus*						?1							
COD FAMILY *Gadidae*	2	(1.3)							1				3
BASS *Dicentrarchus labrax*	2	(1.3)	30	(24.6)	2								34
SEA BREAM NFI *Sparidae*									1				1
MACKEREL *Scomber scombrus*	1	(0.7)											1
PLAICE *Pleuronectes platessa*	1	(0.7)	3	(2.5			1	(0.4)		1			6
FLOUNDER *Platichthys flesus*	2	(1.3)	4	(3.3)	1		1	(0.4)					8
PLAICE OR FLOUNDER	7	(4.6)					1	(0.4)			1		9
RIGHT-EYED FLATFISH NFI *Pleuronectidae*	1	(0.7)											1
SOLE *Solea solea*					1								1
FLATFISH NFI			3	(2.5)	1		4	(1.5)	1	1		1	11
NOT IDENTIFIED	26	(17.3)	18	(14.7)	1		14	(5.4)	3				62
SUBTOTAL	150	(100.0)	122	(100.0)	11	5	261	(100.0)	44	5	4	24	625
UNIDENTIFIABLE	568		98		8	19	566		202	7	28	14	1510
TOTAL	718		220		19	24	827		246	12	32	38	2135

NFI = Not Further Identified
%ID = Fragments expressed as a percentage of identifiable fish bone (including 'Not Identified')

TABLE 3. Six Dials variability study - fish remains from pits

	Common eel	Conger eel	Herring	Herring family	Cod	Pollack	Cod family	Bass	Mackerel	Plaice	Flounder	Plaice/Flounder	Pleuronectidae	Not Identified	Unidentifiable	
Cranial Bone	1		1												1	3
Vomer	1															1
Parasphenoid								1								1
Premaxilla											1				1	2
Maxilla	1															1
Dentary									1							1
Articular	1															1
Operculum	2															2
Quadrate												1		1		2
Branchiostegal		1													8	9
Upper pharyngeal														1	1	2
Branchial bone														2		2
Urohyal		1														1
Cleithrum	1															1
Supraclavicle					1											1
Headbone NFI	4													16		20
Scale															3	3
Vertebra	79	1	6	6		1	2	1		1	1	6	1	6	9	120
Fin ray															145	145
Fragment															400	400
TOTAL	90	3	7	6	1	1	2	2	1	1	2	7	1	26	568	718

TABLE 4. Six Dials variability study - fish remains from pits

Feature	layer	Total no. of fish-bones	Common eel	Conger eel	Herring	Herring family	Cod	Pollack	Cod family	Bass	Mackerel	Plaice	Flounder	Plaice/Flounder	Pleuronectidae	Not identified	Unidentifiable
			Species represented														
F 1008	(1)	3															X
	(3)	4	X			X											X
	(4)	6	X														X
F 1009	(2)	6	X		X												X
	(3)	49	X		X	X			X		X		X			X	X
F 1010	(4)	4															X
	(8)	6	X														X
	(9)	420	X	X	X		X	X				X		X		X	X
F 2013	(1)	106	X											X			X
	(5)	1		X													X
	(6)	42	X														X
	(7)	1											X				X
	(10)	13	X	X													X
	(11)	42	X	X						X					X		X
	(12)	6															X
	(13)	8			X												X

TABLE 5. Six Dials variability study - fish remains from wells

	Common eel	Herring	Salmon/trout	Bass	Plaice	Flounder	Flatfish NFI	Not identified	Unidentifiable	Total
Vomer	1					1				2
Ethmoid						1				1
Parasphenoid	2									2
Premaxilla	1									1
Dentary	1									1
Articular	1									1
Opercular	1									1
Quadrate				2						2
Hyomandibular									1	1
Facial bone				1						1
Ceratohyal	2	1								3
Branchiostegal				1				1	1	3
Cleithrum	2									2
Post temporal						1				1
Anal pterygiophore						1				1
Scale				26				11		37
Vertebra	20	31	1		3		3	4		62
Fin ray								2	51	53
Fragment									45	45
Total	31	32	1	30	3	4	3	18	98	220

TABLE 6. Six Dials variability study - fish remains from wells

Context No.	Feature	Layer	Total no. of fish bones	Common eel	Herring	Salmon/trout	Bass	Plaice	Flounder	Flatfish NFI	Not identified	Unidentifiable
				Occurrence of species								
3531	2014	(2)	12						X			X
3581	2014	(8)	8									X
5702	2014	(15)	3								X	X
3546	2016	(6)	197	X	X	X	X	X	X	X	X	X

TABLE 7. Six Dials variability study - fish remains from yards

	Common eel	Herring	Bass	Flounder	Sole	Flatfish NFI	Not identified	Unidentifiable	Total
Maxilla			1						1
Branchiostegal			1						1
Scale								1	1
Vertebra	3	2		1	1	1			8
Fin ray							1		1
Fragment								7	7
Total	3	2	2	1	1	1	1	8	19

TABLE 8. Six Dials variability study - fish remains from yards

				Occurrence of species							
Context No.	Feature	Layer	Total no. of fish bones	Common eel	Herring	Bass	Flounder	Sole	Flatfish NFI	Not identified	Unidentifiable
242	Stoner Motors		2	X				X			
3596	2015	(10)	1								X
4353	2015	(19)	1			X					
4354	2015	(20)	7	X	X				X		X
4359	2015	(22)	2			X	X				
4360	2015	(23)	6	X						X	X

TABLE 9. Dix Dials variability study - fish remains from ditch primary fill

	Eel	Herring	Cod family	Unidentifiable	Total
Cranial bone		1			1
Scale				1	1
Vertebra	1	2	1*		4
Fin ray				7	7
Fragment				11	11
Total	1	3	1	19	24

* probably Pouting

TABLE 10. Six Dials variability study - fish remains from ditch primary fill

Context No.	Total no. of fish bones	Common eel	Herring	? Pouting	Unidentifiable
10106	1		X		
10117	10				X
11039	4		X	X	X
11444	7	X			X
11782	1		X		
12729	1				X

TABLE 11. Six Dials variability study - fish remains from ditch segment

	Common eel	Herring	Salmon/trout	Cod family	Plaice	Flounder	Plaice/flounder	Flatfish NFI	Not identified	Unidentifiable	Total
Cranial bone		1									1
Basioccipital	1										1
Maxilla	1										1
Dentary	1										1
Quadrate									1		1
Urohyal	3										3
Cleithrum	8										8
Scale										1	1
Vertebra	187	34	3	1*	1	1	1	3		1	232
Fin ray								1		86	87
Fragment									13	478	491
Total	201	35	3	1	1	1	1	4	14	566	827

TABLE 12. Six Dials variability study - fish remains from ditch typical segment

Context No.	Total no. of fish bones	Common eel	Herring	Salmon/trout	Ling	Plaice	Flounder	Plaice/flounder	Flatfish NFI	Not identified	Unidentifiable
10230	17							X			X
10248	26	X							X	X	X
10301	1										X
10469	1										X
11023	4	X									X
11024	2										X
11402	1										X
11432	1										X
11433	1	X									
11442	737	X	X	X	X		X		X	X	X
11613	9	X							X		X
11628	2		X								X
11766	2		X								X
11290	2	X									X
12895	21	X	X	X		X					X

TABLE 13. Six Dials variability study - fish remains from ditch context 10015

	Common eel	Herring	Cod family	Sparidae	Flatfish NFI	Not identified	Unidentifiable	Total
Post-temporal					1			1
Unknown head bone	1							43
Vertebra	36	1	1			3	2	43
Fin ray				1			100	101
Fragment							100	100
Total	37	1	1	1	1	3	202	246

TABLE 14. Six Dials variability study - fish remains from bone working pit (F 1005)

	Eel	Plaice	Flatfish NFI	Unident-ifiable	Total
Branchiostegal				1	1
Vertebra	3	1	1		5
Fin ray				4	4
Fragment				2	2
Total	3	1	1	7	11

TABLE 15. Six Dials variability study - brown preservation in pit (F 2006 (A))

	Common eel	Plaice/ flounder	Unidentifiable	Total
Vertebra	3	1		3
Fin ray			19	19
Fragment			9	9
Total	3	1	28	32

Table 16. Six Dials variability study - house occupation

	Common eel	Herring	Flatfish NFI	Unidentifiable	Total
Dentary	1				1
Branchiostegal				1	1
Vertebra	3	19	1		23
Fin ray				5	5
Spine				3	3
Fragment				5	5
Total	4	19	1	14	38