1612

The Human Skeletal Remains - Aylesbury, George Street

Ancient Monuments Lab. Report No. 4007
Ancient Monuments Lab. Nos. 821907 - 821942

Janet D. Henderson
Institute of Archaeology and Ancient Monuments Laboratory
August 1983

The human skeletal remains from 21 inhumation burials and a quantity of disturbed finds of human bones were examined in the Laboratory. It was found that there were a minimum number of 27 individuals present among the listed burials. Preliminary observations of the miscellaneous bone quickly showed that the material was too scattered and the samples too small for any attempt to be made to assess the number of individuals. Bone preservation varied from good to very poor with most of the sample (two-thirds) being in a poor condition. Individual details are summarised in Appendix 1; complete inventories of the bones and teeth present by individual are kept in the archive.

The material was examined for details of demography (sex, age and stature), health and skeletal and dental metrical and morphological variables. Analysis of this last category was not considered justifiable with the small samples available. However it was noted that there was nothing unusual present: the observations fitted well within the bounds of the variability that might normally be expected. Individual results are listed in Appendix 4.

Demographic Results

Note: Individual results for sex, age and stature are given together with a note of the method(s) used in Appendix 1. Appendix 2 is a simple list for quick reference. Appendix 3 gives details of the methods and the relevant references.

Sex

Table 1 below gives the results for sexing for this site. Attribution of sex was either probable (male/female), possible (?male/?female) or impossible. The last category includes those adult individuals for whom data were unavailable and infants, juveniles and sub-adults for whom sexing was not attempted owing to the inaccuracies involved.

Table 1. Results for Sexing

Sex	Number
Male	11
?Male	0
?Female	3
Female	6
Not sexed	6
Total	26

There was very little that could be said about these results owing to the small size of the sample involved. However it was noted that there was a relatively even distribution

between the sexes with no predominance of one over the other.

Age

Table 2 below gives the results for ageing of this sample. Ages have been standardised into five-year groups, with the exception of the 50+ group for which accurate ageing is not generally feasible. Given the small size of the sample it was felt that this did not in any case render that group disproportionately large.

Table 2. Results for Age

Age	Number
0-5	-
5-10	-
10-15	2
15-20	-
20-25	2
25-30	2
30-35	1
35-40	-
40-45	-
45-50	-
50+	3
Juvenile	1
Adult	15
Total	26

There was nothing that could be said about the results for ageing of this sample largely because of the extremely limited nature of the data available nor was it considered justifiable to examine the age distribution by sex.

Stature

Poor preservation of the material inhibited estimation of stature such that only 12 individuals could be assessed. The results are given below in Table 3. With such a small number there was little opportunity for comment on the results. The sexual dimorphism shown was similar to that which might be found in a larger sample and was not unexpected.

Table 3. Results for Stature by Sex

Stature (m)	Female	Male
1.50-1.54	1	-
1.55-1.59	2	-
1.60-1.64	1	-
1.65-1.69	-	-
1.70-1.74	1	5
1.75-1.79	-	1
1.80-1.84	-	1
Total	5	7

Observations for Health

Evidence for health (ie. pathology) in this sample was very slight owing to the size of the group and the poor degree of preservation. However some observations were made on both teeth and bones. Results by individual are given in Appendix 6.

The Teeth

Teeth were examined for wear, caries, abscesses or cysts, impaction, deciduous retention, periodontal disease, enamel hypoplasia and calculus. Observations of dental wear were used for ageing of individuals only. Of the remainder there were no examples of impaction, deciduous retention or enamel hypoplasia present.

Carious infection of the teeth was found to be present in three individuals only and abscesses in two. However since only four individuals out of 27 had dentitions available for examination this could not be regarded as significant. Further given that the teeth came from such a small number of individuals it could not be considered justifiable to attempt any more detailed analysis of the results (this included abscesses or cysts, periodontal disease and calculus).

Bone Pathology

There were few examples of bone pathology present in this sample and none of any major disease. There was one example of a fracture: from Mediaeval pit 397, no. 396, where there was a healed fracture of a femur. Two individuals presented hip trauma (Burials 250 and 450) and there was one case of spina bifida occulta and congenital fusion of vertebrae (Burial 306). There was also one case of fused thoracic vertebrae for which no diagnosis could be made (Miscellaneous bone no. 617 600/700).

The most interesting case was Burial 608 where there was evidence for head wounds in the form of two cranial cuts: one on the frontal extending back to the temporal and the other on the right parietal. The location of the injuries was unusual in that they occurred on the right side of the skull. Courville (1965) found that only 31% of such wounds were on the right side and that only 3.5% had been delivered horizontally. However the frontal and parietal are the commonest sites for cuts (Brothwell 1961). The indications from the injuries seen here were that the victim was upright, bare-headed and that the blows were delivered with a sharp instrument directed from an assailant most probably standing to the right and behind. The appearance of the injuries was similar to that observed by Manchester (1980) at Eccles, Kent in that a sharp weapon had been employed and also that in the absence of other evidence these wounds were almost certainly the cause of the individual's death.

Summary

27 individuals and a quantity of miscellaneous bone from Aylesbury, George Street were examined in the Laboratory. Data were limited owing to small sample size and poor preservation although most of the individuals could be assessed for sex and age at least. Other information concerning stature, anatomical variability and health was necessarily limited.

Appendix 1. Individual Results - Bone Preservation, Sex, Age and Stature

Note:

1. **Sex:** The numbers attached to the sex attributions (eg, Female 1, 2, 4-10) refer to the methods listed in Appendix 3.

2. **Age:** Estimates of age are generally given in ranges of five years. Younger individuals (infants, juveniles and sub-adults) may be an exception to this as the greater accuracy afforded by using dental development may permit a closer approximation of age.

3. **Stature:** Correction for decrease in stature over 30 years of age was undertaken using Trotter's method (1970). The age used in the equation for each individual is given in brackets.

Burial 133
A very few bones from a human skeleton in very poor condition. Some animal bone present.
?Female: 1,3
20-25 years: Dental wear
-

Burial 162
A very few bones from a human skeleton in fair condition.
Male: 14
Adult
1.83m ± .0337 (c.6'0"). Tibiae.

Burial 216
Partial skeleton in fair condition (c.2/3 present).
-
10-12 years: Dental development, long bone length
1.49m (c.4'11"). Femora.

Burial 250
Partial skeleton in fair condition (c.2/3 present).
Male: 1,3,5,8,10-12
50+ years: Dental wear
1.72m ± .0405 (c.5'8"). Left humerus.

Burial 270
A very few bones from a human skeleton in poor condition. The miscellaneous bones (214 and 252) do not belong to this individual.
Male: 2,3,8
Adult
1.72m ± .0432 (c.5'8"). Left ulna.

Burial 275
Partial skeleton in fair condition (c.1/3 present).
Male: 2,3,8,14
50+ years: Pubic symphysis
1.73m ± .0299 (c.5'8"). Right femur and tibia.

Burial 306
Partial skeleton in fair condition (c.1/2 present).
Female: 2,3,10-12
25-30 years: Dental wear
1.63m ± .0445 (c.5'4"). Humeri.

Burial 403
A very few bones from a human skeleton in poor condition.
Female: 3,10,11,14
Adult
-

Burial 435
A very few bones from a human skeleton in very poor condition.
?Female: 3
Adult
-

Burial 445
There were a minimum number of two individuals present (A and B), both represented by a very few bones in poor condition.
One sheep's femur present.
A: Male: 11
20-25 years: Dental wear
-
B: -
Juvenile
-

Burial 450
Partial skeleton in good condition (c.1/2 present).
Female: 2,3,6-9,11,14
25-30 years: Pubic symphysis
1.54m ± .0355 (c.5'1"). Femora.

Burial 460
Partial skeleton in poor condition (c.1/3 present).
?Female: 2,3,8,14
Adult
1.73m ± .0327 (c.5'8"). Right femur.

Burial 480
Partial skeleton in good condition (c.2/3 present).
Male: 1-3,5,8-11,14
50+ years: Pubic symphysis
1.71m ± .299 (c.5'7"). Left femur.

Burial 507
A very few bones from a human skeleton in poor condition.
Male: 3,14
Adult
-

Burial 572
There were a minimum number of three individuals present, represented by three humeral fragments in poor condition.
Male, Male, Female: all assessed on 11
Adult, Adult, Adult
-, -, -.

Burial 581
Partial skeleton in poor condition (c.1/3 present).
Female: 2,3,7,8
Adult
1.56m ± .0327 (c.5'1"). Right femur.

Burial 605
A very few bones from a human skeleton in fair condition.
-
10-15 years: Skeletal ossification
-

Burial 608
Partial skeleton in poor condition (c.1/3 present).
Male: 2,3,7,8,10-12
30-35 years: Dental wear
1.78m ± .0405 (c.5'10"). Right humerus.

Burial 614
A very few bones from a human skeleton in poor condition.
-
Adult
-

Burial 617
There were a minimum number of three individuals present, represented by three femoral fragments in poor condition.
Male, -, - : Male assessed on 8
Adult, Adult, Adult
1.72m ± .0879 (c.5'8"). Left femur - segment 1.

Burial 657
A very few bones from a human skeleton in fair condition.
Some animal bone present.
Female: 1,3,8
Adult
1.58m ± .0903 (c.5'2"). Right femur - segment 4.

Appendix 2. Results for Sex, Age and Stature

Number	Sex	Age	Stature	
			Metric	Imperial
133	?Female	20-25	-	-
162	Male	Adult	1.83m±.0337	6'0"
216	-	10-12	1.49m	4'11"
250	Male	50+	1.72m±.0405	5'8"
270	Male	Adult	1.72m±.0432	5'8"
275	Male	50+	1.73m±.0299	5'8"
306	Female	25-30	1.63m±.0445	5'4"
403	Female	Adult	-	-
435	?Female	Adult	-	-
445A	Male	20-25	-	-
445B	-	Juvenile	-	-
450	Female	25-30	1.54m±.0355	5'1"
460	?Female	Adult	1.73m±.0327	5'8"
480	Male	50+	1.71m±.0299	5'7"
507	Male	Adult	-	-
572	Male	Adult	-	-
572	Male	Adult	-	-
572	Female	Adult	-	-
581	Female	Adult	1.56m±.0372	5'1"
605	-	10-15	-	-
608	Male	30-35	1.78m±.0405	5'10"
614	-	Adult	-	-
617	Male	Adult	1.72m±.0879	5'9"
617	-	Adult	-	-
617	-	Adult	-	-
657	Female	Adult	1.58m±.0903	5'2"

Appendix 3. Demographic Methods

It should be noted that this is a general appendix and therefore not all of the methods listed here were necessarily employed in the analysis of the data.

Sex - Methods

Sexing of the bones was based on both morphological and metrical methods. The following table is a list of the methods used and the authors from which they were taken.

Table 1: Methods and References used for the Attribution of Sex

Method	References
1. Skull morphology	Krogman (1962), Acsadi and Nemeskeri (1970), El-Najjar and McWilliams (1978), Ubelaker (1978), Stewart (1979) and Brothwell (1981)
2. Pelvic morphology	Krogman (1962), Phenice (1969), Stewart (1970), Houghton (1974), Putschar (1976), El-Najjar and McWilliams (1978), Ubelaker (1978), Stewart (1979), Suchey et al (1979) and Brothwell (1981).

3. General skeletal morphology: This was a subjective assessment of the whole skeleton, its size, shape and degree of robusticity or gracility. It was used as a guide only, except where absolutely no other indicators of sex were available.

4. Discriminant function: Skull	Giles (1970)
5. Discriminant function: Mandible	Giles (1970)
6. Pelvis: Ischio-pubic index	Washburn (1948)
7. Discriminant function: Sacrum	Flander (1978)
8. Vertical diameter: Femoral head	Pearson (1917/19 in El-Najjar and McWilliams (1978) and Thieme and Schull (1957).
9. Discriminant function: Femur	Giles (1970)
10. Maximum diameter: Humeral head	Stewart (1979)
11. Epicondylar width: Humerus	Thieme and Schull (1957)
12. Scapula: Glenoid fossa length	Stewart (1979)
13. Sternum: Manubrium index	El-Najjar and McWilliams (1978)
14. Discriminant function: Talus and calcaneus	Steele (1976)

Age - Methods

Estimation of age for each individual was based on a number of independent variables. Since the methods used for ageing change with the growth and maturation of the skeleton, the preliminary step was taken of assigning individuals to one of the following four classes:

Infant:	Birth - six months (approximately the beginning of eruption of the deciduous dentition).
Juvenile:	Six months - the beginning of epiphyseal union (this coincides approximately with the completion of the dentition with the exception of the third molar, hence the end of its usefulness as an ageing method, at about fifteen years).
Sub-Adult:	Beginning of epiphyseal union - the completion of growth and maturation of the skeleton (approximately 15-25 years).
Adult:	Completion of skeletal growth and maturation - old age.

Table 2 below lists the methods and references used for each age category.

Table 2: Methods and References used for the Estimation of Age

Infant

Development of the deciduous dentition:	Moorrees et al (1963), Schour and Massler (1941)
Long bone length/Stature:	Olivier and Pineau (1960), Ubelaker (1978)

Juvenile

Development of the dentition:	Moorrees et al (1963), Schour and Massler (1941)
Stature:	Ubelaker (1978), Olivier (1969)
Skeletal ossification:	Anderson (1960), Stewart (1979)
Epiphyseal union:	McKern and Stewart (1957), Stewart (1979)

Sub-Adult

Development of the third molar tooth:	Schour and Massler (1941) McKern (1970)
Closure of the spheno-occipital synchondrosis:	McKern and Stewart (1957)
Epiphyseal union:	McKern and Stewart (1957), Stewart (1979)

Metamorphosis of the pubic symphysis: McKern and Stewart (1957) Hanihara and Suzuki (1978)

Adult

Dental wear: Brothwell (1981), Miles (1963)

Endocranial suture closure: Krogman (1962)

Metamorphosis of the pubic symphysis: McKern and Stewart (1957), Hanihara and Suzuki (1978), Gilbert and McKern (1973), Todd (1920) and Brooks (1955)

Degenerative changes in the cortex (humerus): Schranz (1959)

Stature

All individuals were assessed for an estimate of stature where possible. The methods used for adults were as follows:

1) Complete long bones: Trotter (1970)

2) Fragmentary remains: Steele (1970)

It was not feasible to estimate stature on any of the infant skeletons but for some of the juveniles the method outlined by Olivier (1969) was used. Individual results are listed in Appendices 1 and 2.

Appendix 4. Results for Dental, Cranial and Post-Cranial Metrical and Morphological Observations

Results for Dental Observations - Morphology

Aylesbury, George Street

Number	OCC	R/C	VARIATIONS NO. OF TEETH	VARIATIONS TOOTH SIZE	SUP.CUSPS	C/P	D
133	-	0 -	0 - - - - -	0 - - - - -	0 - -	-	-
250	-	0 -	0 - - - - -	0 - - - - -	0 - -	-	-
306	-	0 -	0 - - - - -	0 - - - - -	0 - -	-	-
480	-	0 -	- - - - - -	- - - - - -	- - -	-	-

5

- 104.33
24 114.33

Results for Cranial Metrics - Face, Orbit, Maxilla, Nose

Aylesbury, George Street

Number	FACE					ORBIT				MAXILLA				NOSE	
	J	G'H	GH	GB	02	01'	IO	DA	DC	G2	G1'	MAB	MAL	NH'	NB
250	-	-	-	-	-	-	-	-	-	47.0	49.0	66.8	61.0	-	-
657	-	-	-	-	-	-	-	-	-	37.0	40.0	58.4	54.0	-	-

Results for Cranial Metrics - Mandible

Aylesbury, George Street

Number	Ml	ML	CoCo	Wl	CrH	RB	RB'	ZZ	M1/2	M2
250	37.2	-	100.8	-	78.0	48.0	31.6	48.0	30.2	14.2
306	38.0	-	-	-	67.0	36.7	28.8	44.2	27.0	16.8
480	33.5	100.	94.4	126.0	69.3	45.3	35.0	44.4	28.2	15.3

Results for Skull Morphological Observations - Norma Frontalis, Verticalis, Occipitalis

Aylesbury, George Street

Number	Norma Frontalis													Norma Verticalis				Norma Occipitalis			
	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	1	2	3	4
250	0	3	0	-	-	-	0	2	-	-	-	-	1	-	-	-	-	-	-	-	-
480	2	1	1	0	0	2	-	-	-	-	-	-	-	0	0	0	0	-	0	0	-
657	0	1	1	0	0	1	2	-	-	-	-	-	1	0	0	0	0	0	-	0	0

Results for Skull Morphological Observations - Norma Basalis

Aylesbury, George Street

Number	Norma Basalis																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
250	0	0	0	0	0	0	0	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
657	0	0	0	0	0	0	0	1	1	-	-	-	-	0	0	0	0	2	3	1	1	-	-	1	1	1	1	-	-	-

Results for Skull Morphological Observations - Norma Lateralis, Mandible

Aylesbury, George Street

Number	Norma Lateralis																Mandible													
	1		2		3		4		5		6		7		8		1		2		3		4		5		6		7	
250	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	1	0	0	1	1	3	3	1	1
306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	3	-	0	0	1	-	3	3	1	1
480	0	0	0	0	-	-	0	0	0	0	-	-	-	-	-	-	1	1	2	2	3	3	0	0	0	0	1	4	1	1
657	0	0	0	0	-	-	0	0	0	0	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Results for Post-cranial Metrics - Clavicle, Sternum, Scapula

Aylesbury, George Street

Number	CLAVICLE		STERNUM			SCAPULA						Sternal Index
	ClL1		MaL1	MaB1	CoL1	ScL1		ScB1		ScLg		
250	-	-	57.0	44.6	-	-	-	-	-	-	39.0	-
306	146.	-	46.0	37.0	-	-	-	-	-	32.0	-	-
480	151.	-	-	-	-	-	-	-	-	-	-	-
605	133.	-	-	-	-	-	-	-	-	-	-	-
608	-	-	-	-	-	-	-	-	-	39.0	-	-

Results for Post-crunial Metrics - Sacrum

Aylesbury, George Street

Number	SACRUM								Sacral Indices				
	SaL1	SaB1	SaD1	SaC1	SaAB	SaTB	SaTB'	SaDC	1	2	3	4	5
250	116.6	-	-	134.	32.6	-	-	31.	-	-	87.01	-	26.59
270	132.0	115.6	68.0	144.	-	54.0	-	25.	87.58	46.71	91.67	46.71	18.94
450	106.2	112.0	58.3	113.	30.0	53.4	42.8	19.	105.46	47.68	93.98	74.46	17.89
581	-	-	56.0	-	-	-	-	-	-	-	-	-	-
608	-	-	61.0	-	-	-	-	-	-	-	-	-	-

Results for Post-cranial Metrics - Innominate

Aylesbury, George Street

Number	INNOMINATE								Indices			
	IlB1		InL1		PuL1		IsL1		1		2	
450	155.	160.	206.	203.	71.2	72.0	74.0	74.0	75.24	78.82	96.22	97.30
608	103.	-	-	-	-	-	-	-	-	-	-	-

Results for Post-cranial Metrics - Humerus, Radius, Ulna

Aylesbury, George Street

Number	HUMERUS										RADIUS				ULNA		Brachial Index	
	HuL1		RHD		HuD1		HuD2		HuE1		RaL1		RHD		UlL1		1	
216	-	236.	-	-	-	-	-	-	-	-	-	-	-	-	-	195.	-	-
250	-	334.	-	47.5	-	24.6	-	18.0	68.2	-	257.	254.	25.5	-	274.	-	-	76.05
270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	266.	-	-
306	317.	307.	40.4	40.0	22.4	22.3	17.0	15.6	60.3	58.6	-	-	-	-	-	-	-	-
403	-	-	44.2	-	-	-	-	-	58.0	-	-	-	-	-	-	-	-	-
450	-	-	-	-	-	-	-	-	56.0	-	210.	-	22.0	-	235.	-	-	-
480	-	343.	-	44.0	-	22.5	-	18.5	-	64.0	-	230.	-	25.7	-	264.	-	67.06
608	350.	-	45.0	-	-	-	-	-	66.0	-	-	-	-	-	-	-	-	-
614	-	-	-	-	-	-	-	-	-	62.0	-	-	-	-	-	285.	-	-

Indices

FeE1		1		2		3		4		5		6	
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	72,63	72,95	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	82,35	-	109,15	-	79,55	78,07	18,89	-	10,21	-	-	-
70,7	69,0	71,38	77,44	84,06	89,29	68,49	71,60	16,17	14,61	9,52	-	17,85	17,78
-	70,0	84,69	-	105,38	-	73,68	70,05	15,32	-	8,60	-	-	-
-	71,5	-	85,29	-	109,15	-	72,22	-	20,74	-	10,33	-	15,61
-	-	80,25	-	112,65	-	67,84	-	9,83	-	16,61	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	70,99	-	-	-	-	-	-	-	-	-	-
-	-	-	80,49	-	-	-	-	-	-	-	-	-	-

Results for Post-cranial Metrics - Femur

Aylesbury, George Street

Number	FEMUR																			
	FeL1		FeL2		FHD1		FHD2		FeD1		FeD2		FeD3		FeD4		FeD5		FeD6	
216	-	311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
250	-	-	-	-	52.0	-	-	-	26.0	26.7	35.8	36.6	-	-	-	-	-	-	-	-
270	-	-	-	-	-	49.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
275	467	-	466	-	51.0	-	47.6	-	28.0	-	34.0	-	31.0	-	28.4	-	31.5	32.4	39.6	41.5
450	398	393	396	388	42.2	-	37.7	-	23.2	23.0	32.5	29.7	23.2	22.5	27.6	25.2	25.0	24.2	36.5	33.8
460	470	-	465	-	-	41.2	40.0	-	26.0	-	30.7	-	27.4	-	26.0	-	28.0	28.3	38.0	40.4
480	-	460	-	458	-	49.4	-	47.3	-	29.0	-	34.0	-	32.2	-	29.5	-	26.0	-	36.0
581	411	-	407	-	42.8	42.0	40.0	39.3	26.0	-	32.4	-	27.6	-	24.5	-	27.0	-	39.8	-
608	464	-	-	-	48.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
614	-	-	-	-	-	-	-	-	-	25.7	-	36.2	-	-	-	-	-	-	-	-
617	-	-	-	-	-	-	-	53.2	-	33.0	-	41.0	-	-	-	-	-	-	-	-

Results for Post-cranial Metrics - Tibia, Fibula

Aylesbury, George Street

Number	TIBIA								FIBULA		Indices					
	TiL1		TiD1		TiD2		TiE1		FiL1		1		2		3	
162	414.	413.	-	34.3	-	25.0	-	77.0	405.	404.	-	72.89	-	-	-	-
216	257.	-	-	-	-	-	-	-	250.	250.	-	-	-	-	-	-
275	384.	-	39.0	-	28.3	-	79.0	-	377.	-	72.56	-	-	-	-	-
450	328.	328.	28.6	27.4	22.4	22.0	70.0	68.0	315.	-	78.32	80.29	83.46	-	-	-
460	-	-	33.4	33.4	23.5	23.3	-	-	371.	-	70.36	69.76	-	-	-	-
480	372.	374.	32.7	32.0	22.5	23.0	-	-	357.	-	68.81	71.88	-	-	-	-
581	-	-	33.6	33.4	24.2	23.0	-	-	-	-	72.02	68.86	-	-	-	-

Results for Post-cranial Metrics - Calcaneus, Talus

Aylesbury, George Street

Number	CALCANEUS										TALUS									
	CaL1		CaB1		CaH1		CaL2		CaB2		TaL1		TaB1		TaH1		TaT1		TaT2	
162	-	-	27.8	-	44.4	-	-	-	-	-	51.7	51.3	41.4	44.0	31.7	31.7	30.4	31.2	32.5	32.7
275	84.2	84.0	26.6	27.6	51.0	51.0	52.0	53.3	43.8	43.3	54.6	53.5	46.4	44.2	34.4	33.6	35.9	36.0	35.5	33.6
403	-	-	-	-	-	-	-	-	-	-	47.0	-	37.0	-	31.0	-	31.5	-	27.6	-
450	72.2	70.7	24.5	24.2	39.6	41.0	43.0	44.0	38.6	38.4	50.5	49.7	37.0	39.0	29.3	29.0	28.7	29.0	28.4	27.8
460	-	80.4	-	23.3	-	43.2	-	49.2	-	37.0	51.0	50.5	41.0	40.4	30.6	30.0	26.7	29.0	28.3	29.0
480	84.6	-	24.0	-	45.7	-	52.4	-	41.5	-	54.0	-	41.5	-	34.7	-	31.3	-	34.0	-
507	79.3	77.0	25.0	25.8	45.7	46.0	52.3	52.0	43.0	42.7	57.4	56.4	45.0	46.0	35.0	35.0	33.6	-	33.0	36.3

Results for Post-cranial Morphological Observations - Sternum, Scapula, Vertebrae, Innominate

Aylesbury, George Street

Number	STERNUM		SCAPULA							VERTEBRAE															INNOMINATE			
	1		1		2		3		4	1	2		3		4		5		6		7		8	9	10	11	1		2	
250	0	-	-	-	-	-	-	-	1	2	1	0	0	1	1	1	1	1	1	1	3	2	1	1	-	-	4	-	-	-	-	-
270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	0	0	-	0	-	1
275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	1
306	0	-	0	-	1	-	0	-	2	2	1	1	0	0	0	0	1	1	1	1	3	1	2	2	-	1	-	-	-	-	0	-	-	-
450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	0	0	0	0	1	-
480	-	-	-	-	-	-	-	-	-	-	2	2	1	1	1	2	1	1	1	1	-	3	2	2	-	1	-	-	-	-	-	-	-	0
605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	2	-	-	-	-	-	-	-	-
608	-	-	0	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Results for Post-cranial Morphological Observations - Clavicle, Humerus, Radius, Ulna, Hands

Aylesbury, George Street

Number	CLAVICLE		HUMERUS						RADIUS		ULNA		HANDS			
	1		1		2		3		1		1		1		2	
216	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-
250	3	3	0	0	0	0	0	-	1	1	-	-	-	0	0	-
270	-	-	-	-	-	-	-	-	-	1	-	0	-	-	-	-
275	-	-	-	-	-	-	-	-	-	1	-	-	0	0	0	0
306	-	-	0	1	0	0	0	0	-	-	0	0	-	-	-	-
403	-	-	0	-	0	-	0	-	-	-	-	-	-	-	-	-
450	-	-	1	-	0	-	0	-	-	-	0	-	0	0	0	-
460	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
480	3	3	-	0	-	0	-	0	-	1	-	0	0	0	-	-
608	-	-	0	-	0	-	1	-	-	-	-	-	-	-	-	-
614	-	-	-	0	-	0	-	0	-	-	-	0	-	-	-	-

Results for Post-cranial Morphological Observations - Femur, Patella, Tibia, Feet

Aylesbury, George Street

Number	FEMUR										PATELLA						TIBIA				TALUS				CALCANEUS						FEET			
	1		2		3		4		5		1		2		3		1		2		1		2		1		2		3		1		2	
162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	2	2	0	1	0	-	1	-	-	-	0	0	0	-
216	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
250	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
275	1	-	3	-	0	-	2	-	0	-	-	-	-	-	-	-	0	-	0	0	2	2	0	0	1	1	3	3	1	1	0	0	-	0
403	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	2	2	1	-	0	-	-	-	1	1	-	-	-	-	-	-
450	0	0	-	-	0	-	0	-	0	-	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	0	-	-	-
460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	2	2	0	0	0	0	2	2	1	1	0	-	0	0
480	-	0	-	-	0	-	0	-	0	1	-	-	-	-	-	-	0	0	0	0	1	-	0	-	1	-	1	-	1	-	-	-	-	-
507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	2	2	0	0	0	0	3	3	1	1	-	-	-	0
581	-	-	3	1	-	-	-	-	-	-	-	-	0	0	0	0	1	1	-	-	-	-	-	-	0	0	3	3	-	-	-	-	-	-
608	0	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix 5. Index of Abbreviations - Metric and Morphological Variables

METRICS

Mandible

H1: Symphyseal height
ML: Condyle-symphyseal length
CoCo: Bigonial diameter
W1: Bicondylar width
CrH: Height of ascending ramus
RB: Maximum ramus breadth
RB': Minimum ramus breadth
ZZ: Foramen mentalia breadth
M1/2: Body height at M1/2
M2: Body thickness at M2

Clavicle

ClL1: Maximum length

Sternum

MaL1: Manubrium - length
MaB1: Manubrium - breadth
CoL1: Corpus - length
Index: Sternal index

Scapula

ScL1: Scapula - length
ScB1: Scapula - breadth
ScLg: Length of glenoid fossa

Sacrum

SaL1: Sacrum - length
SaB1: Sacrum - breadth
SaD1: Sacrum - greatest diameter of articular surface
SaC1: Maximum curved length
SaAB: Anterior-posterior breadth of S1
SaTB: Medio-lateral breadth of S1
SaTB': Medio-lateral breadth of S1 (inside annular ring)
SaDC: Depth of curvature

Indices
1: Sacral index
2: Corporo-basal index
3: Curvature index
4: S1 index
5: Depth index

Innominate

IlB1: Iliac breadth
InL1: Innominate length
PuL1: Pubic length
IsL1: Ischial length

Indices
1: Coxal index
2: Ischio-pubic index

Humerus

HuL1: Maximum length
HHD: Maximum diameter of the humeral head
HuD1: Maximum diameter at the mid-shaft
HuD2: Minimum diameter at the mid-shaft
HuE1: Epicondylar breadth

Radius

RaL1: Maximum length
RHD: Maximum diameter of the radial head

Ulna

UlL1: Maximum length

Femur

FeL1: Maximum length
FeL2: Oblique length
FHD1: Maximum diameter of the femoral head
FHD2: Vertical diameter of the femoral head
FeD1: Sub-trochanteric antero-posterior diameter
FeD2: Sub-trochanteric medio-lateral diameter
FeD3: Mid-shaft antero-posterior diameter
FeD4: Mid-shaft medio-lateral diameter
FeD5: Supracondylar antero-posterior diameter
FeD6: Supracondylar medio-lateral diameter
FeE1: Bicondylar breadth

Indices

1: Platymeric index
2: Pilastric index
3: Popliteal index
4: Shaft robusticity index
5: Femoral head index
6: Condylar breadth index

Tibia

TiL1: Maximum length
TiD1: Nutrient foramen antero-posterior diameter
TiD2: Nutrient foramen medio-lateral diameter
TiE1: Bicondylar breadth

Indices

1: Platycnemic index
2: Crural index
3: Intermembral index

Fibula

FiL1: Maximum length

Calcaneus

CaL1: Maximum length
CaB1: Minimum breadth
CaH1: Body height
CaL2: Load arm length
CaB2: Load arm width

Talus

TaL1: Maximum length
TaB1: Talar breadth
TaH1: Body height
TaT1: Trochlear length
TaT2: Trochlear breadth

MORPHOLOGY

Sternum

1: Manubrium-body synostosis
2: Sternal aperture

Scapula

1: Os acromiale
2: Acromion form
3: Acromial facet
4: Shape of suprascapular area

Vertebrae

1: Atlas - facet shape
2: Atlas - posterior bridge
3: Atlas - lateral bridge
4-8: Transverse foramen bridging - cervical vertebrae 3-7
9: Cervical spines (single/double)
10: Sacral hiatus height
11: Accessory sacral facets

Innominate

1: Accessory sacral facets
2: Acetabular crease

Clavicle

1: Sterno-clavicular insertion

Humerus

1: Septal aperture
2: Supracondylar process
3: Medial epicondylar shape

Radius

1: Shape of distal facet

Ulna

1: Olecranon spurs

Hands

1: Metacarpal 3 - separate styloid process
2: Fusion of lunate and triquetral

Femur

1: 3rd trochanter
2: Shape of fovea capitis
3: Allen's fossa
4: Poirier's facet or plaque
5: Trochanteric fossa exostosis

Patella

1: Vastus notch
2: Patella spurs
3: Bipartite patella

Tibia

1: Nutrient foramen position
2: Squatting facets (tibia and talus)

Talus

1: Shape of talar facet
2: Os trigonum

Calcaneus

1: Calcaneal spurs
2: Calcaneal facet - shape
3: Peroneal tubercle

Feet

1: Navicular - accessory bone
2: Bipartite medial cuneiform

Appendix 6. Individual Observations - Pathology

Burial 250

Degenerative Joint Disease: This skeleton had a marked degree of degeneration present at the joints. The area most severely affected was the hips, with the left more involved than the right. On both sides there was destruction of the acetabula and femoral heads with development of osteoporosis and large cyst-like cavities. There was only very slight evidence for marginal lipping. There was no obvious displacement of the bones.

X-ray examination highlighted the changes described above and also failed to reveal any evidence of a fracture, either of the femur or pelvis, or a dislocation of the joint. However it was not feasible to exclude entirely the possibility of a joint dysplasia which had led to this degenerative joint disease in later life (this individual was aged at 50+ years). Further it was felt that since the left side was so much more markedly affected than the right the most probable cause was a trauma or injury of some kind (such as a dysplasia) which had been followed by secondary degenerative joint disease in later life. Plates.

The remainder of the skeleton showed a fair degree of degenerative joint disease with the upper thorax most involved. Most of the changes seen (in particular to the spine) could be attributed to stress and age, often found in individuals of this age and period.

Morphological Anomaly: There was an oval-shaped defect in the left scapula blade immediately lateral to the nutrient foramen (seen from the ventral side). This may or may not have been associated with the apparent complete absence of the suprascapular notch. It was similar in type to one described by Anderson (1968) although in that case the defect was situated in the infraspinous fossa at the root of the spinous process. It was considered that this defect was most probably not productive of pathological symptoms.

Burial 306

Spina Bifida Occulta: Although the sacrum was very broken and only the first sacral vertebra was complete it was clear that this was bifid, there being a gap (11.4mm) in the spinous process. Since the bone was damaged it was impossible to tell to what extent the rest of the sacrum had been involved. It should be stressed that this condition should not be confused with the more severe (and rarer) form of spina bifida (rachischisis). Spina bifida occulta is not generally productive of pathological symptoms.

Congenital Fusion of Vertebrae: There was complete (anterior and posterior) fusion of the axis and third cervical vertebra in this individual. Since there was no evidence for any other changes (eg. loss of height, degenerative joint disease) it was concluded that this was an example of congenital fusion, a condition which is fairly common (El-Najjar and McWilliams 1978). Plate.

Burial 450

Hip Injury: There was evidence for changes to the left hip of this individual. The right side was normal. The left acetabulum was shallower than the right and the surface was roughened. Its area had become expanded and there was evidence for osteoporosis and the development of cyst-like cavities, particularly at the superior margin. Radiographic examination emphasized this last feature and also showed a degree of bony sclerosis. The femoral head was flattened and roughened and there was marked lipping around the rim. The femoral neck also demonstrated a pronounced degree of shortening. There was no evidence for fracture or displacement of either bone, either visually or on x-ray. Possible causes included a minor dysplasia (congenital or traumatic) or Perthes disease. It was considered unlikely in this case that Perthes disease was involved since this mainly affects boys, although it could not be entirely ruled out.

Burial 480

Degenerative Joint Disease: There was some marked osteoarthritis present on this individual, most of which could be attributed to age (50+ years) and stress (eg. occupation). However it was particularly marked at the left elbow and it was suggested that there had probably been an increased degree of stress or even trauma involved here as well.

Burial 608

Injury: There was evidence for three cuts on the cranium of this individual (Plate). Cut A was situated on the right parietal extending four centimetres to the sagittal suture. Although a piece of bone had clearly been removed endocranial examination showed that the cut had not pierced the skull, the hole that was visible was the result of post mortem erosion. The cut was angled slightly in a downward and backwards direction but the shallow nature of the wound suggested that the assailant had been on approximately the same level as the victim. Further unless they were left-handed they must have been on the right side and behind. The sharp edges of the wound indicated both a sharp weapon (eg. sword or axe) and the absence of headgear.

Cut B extended from the left frontal to the right lateral supra-orbital region where its end was lost owing to post-mortem damage to the bone. Cut C was located on the temporal bone close to the point where the sutures of the frontal, parietal, sphenoidal and temporal bones meet. The appearance and angle of both these injuries suggested that in fact they were one and the same cut, therefore they were described together as Cut B. This wound was c.12 centimetres in length, sharp-edged and penetrating the skull. The angle and length of the lesion indicated a long, sharp weapon which had been aimed at approximately the same height as the victim. As with Cut A the signs were that the assailant had been to the victim's right and slightly behind. It seemed likely that the two injuries occurred at the same time, particularly since there was no evidence for healing at either site, and in the absence of other injury or pathology one or other (or both) of these injuries was most probably the cause of death.

Results for Dental Observations - Pathology

Aylesbury, George Street

Number	TOTAL		AM		SOCKETS		W	CARIES					ABSCESS/CYST					IMPACT.		DECID.		P	EH	C
							1	1	2,3	4	5	6	1	2,3	4	5	6	1	2,3	1	2,3	1	1	1
133	-	16	-	-	-	15	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
250	15	16	-	-	16	16	4	3	1,6	4	6	3	2	1,6	1	4	2	-	-	-	-	3	-	3
250	-	-	-	-	-	-	-	-	2,6	4	6	3	-	3,6	1	3	1	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	4,6	3	6	3	-	-	-	-	-	-	-	-	-	-	-	-
306	16	16	-	-	15	16	2	3	3,7	1	1	1	1	3,6	1	4	1	-	-	-	-	2	-	2
306	-	-	-	-	-	-	-	-	3,5	-	6	3	-	-	-	-	-	-	-	-	-	-	-	-
306	-	-	-	-	-	-	-	-	4,8	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-
480	11	9	1	7	12	16	4	1	1,4	-	6	3	-	-	-	-	-	-	-	-	-	3	-	3
Total	42	57	1	7	43	63		7					3					-		-				

Appendix 7. The Disturbed Bone

There was a large quantity of scattered finds of human bone sent in for examination from this site for which detailed analysis could not be justified. However where feasible the material was assessed for identification, sex, age, stature and pathology. The following is a list of the actual observations made, by box and by number, together with the method(s) used (see Appendix 3).

BOX 15.

101A
A fragment of left femur.
Sex: Male: 8
Age: 15-20 years: Epiphyseal union.

101B
Incomplete right humerus, two rib fragments. Probably the same individual.
Sex: Female: 10
Age: Adult
Stature: 1.56m ± .098 c.5'1". Humerus - segment 1.

101C
A second left metacarpal from an adult individual.

101D
Animal bone

101
Animal bone present.
Proximal phalanx (hand) from an adult individual.

101
A mandibular canine tooth from an adult individual.

101
Animal bone present.
A left fifth metatarsal from an adult individual.

110
Animal bone present.
Fragments of pelvis, hand and right clavicle. These could all belong to the same individual (an adult) but do not definitely do so.

113
Animal bone present.
Fragments of left humerus, left femur, left ulna, skull, vertebra and metatarsal.
Sex: ?Male: 10
Age: Adult

116
Animal bone

123
Fragments of tibiae and right clavicle
Sex: Female: Clavicular and tibial length
Age: Adult

Stature: 1.63m ± .0366 c.5'4". Right tibia

125
Fragment of scapula from a juvenile individual.

129
Fragment of right humerus
Sex: Male: 10
Age: Adult
Stature: 1.73m ± .096 c.5'8". Humerus - segment 1.

130
A maxillary premolar tooth from an adult individual.

130
Maxillary first incisor and first molar teeth from an adult individual.

138
Fragments of skull and lumbar vertebra from an adult individual.

140
Maxillary fragment and first molar tooth.
Age: Max. 25 years: Dental wear

146
Skull fragment from an adult individual.

150
Fragments of right femur, left patella and long bone shaft.
Sex: Male: 8
Age: Adult

151
Fragment of right femur from an adult individual.

153
Right hand - metacarpals 1-5.
Sex: ?Female: 3
Age: Adult

BOX 16.

156 500/300
Skull fragment - human

156 600/300
Fragments of skull, radius, femur and tibia. There were a minimum number of three individuals present.
Age: 1 juvenile + 2 adults

156 600/400
Animal bone present.
A mandibular premolar tooth with fragments of hand and foot bones, all from an adult individual.

156 600/600
Animal bone present.
Fragments of a molar tooth, skull and hand and foot bones. Probably not all from the same individual but there was no conclusive evidence for this. All the bones were adult.

AE
Skull fragment, probably from a juvenile individual.

AF
Animal bone

AH
Animal bone

AJ
Femoral fragment from a juvenile individual.

AK
Animal bone

AL
Fragment of lumbar vertebra from an adult individual.

AM
Fragment of right scapula
Sex: Female: 12
Age: Adult

AO
Skull fragment from an adult individual

AP
Animal bone present
Fragments of clavicle, vertebra and rib from an adult individual.

AT
Skull fragment from an adult individual.

AU
Skull fragment from an adult individual.

AV
Fragment of right ulna from an adult individual.

AW
Skull fragment from an adult individual.

AX
Fragment of thoracic vertebra from an adult individual.

AY
12th thoracic vertebra - complete
Sex: ?Male: 3
Age: Adult

AZ
Skull fragment from an adult individual

BA
Fragment of tibial shaft from an adult individual.

BB
Two rib fragments from an adult individual.

BC
Tibial fragment from a juvenile individual.

156 600/700
Animal bone present.
A maxillary premolar tooth from an adult individual.

156 600/700
Fragments of skull and hand and foot bones. Probably not all from the same individual but there was no conclusive evidence for this. All the bones were adult.

156 700/200
Animal bone present.
Fragments of skull, left humerus and a left first metacarpal.
There were a minimum number of two individuals present - an adult and a juvenile.

156 700/300
Animal bone present.
Fragments of femur, ulna, teeth and hand and foot bones.There were a minimum number of two individuals present.
Sex: ?Male: 3 (adult only)
Age: Juvenile + adult

156 700/400
Fragment of right humerus
Sex: Male: 10
Age: Adult
Stature: 1.73m ± .096 c.5'8". Humerus - segment 1.

156 700/600
Animal bone present
Mandibular fragment.
Age: 30-35 years: Dental wear

156 700/700
Animal bone present
Fragments of skull, teeth, patellae and left femur.
Sex: ?Male: 3
Age: Adult

156 800/300
Fragments of skull and hand from an adult individual.

156
Animal bone present.
Fragments of skull and hand from an adult individual.

BOX 17. No. 156.

AA
A maxillary first molar tooth - human.

AB
Animal bone

AC
Animal bone

AD
Fragment of atlas vertebra.
Age: <6 years: Skeletal ossification

BD
Fragment of left humerus from a juvenile individual. This was not the same individual as BC.

BE
Fragment of right radius from an adult individual.

BF
Fragment of left tibia from an adult individual.

BG
Fifth right metatarsal from an adult individual.

BH
Right humerus - complete
Sex: Male: 10
Age: Adult
Stature: 1.85m ± .0405 c.6'1". Humerus

BJ
Rib fragment from an adult individual.

BK
Rib fragment from an adult individual. This could be the same individual as BJ.

BL
Sacral fragment from an adult individual.

BM
Rib fragment from an adult individual.

BN
Fragment of left radius from an adult individual.

BO
Pelvic fragment
Sex: Male: 2
Age: 20-24 years: Pubic symphysis

BP
Mandibular fragment
Age: 20-25 years: Dental wear.

BR
Rib fragment from an adult individual

BS
Rib fragment from an adult individual

BOX 18.

158 600/300
Animal bone present
Skull fragments from a juvenile/sub-adult individual

160 Z00/200
Animal bone

162
F: Thoracic vertebra from an adult individual

G: Phalanx (hand) from an adult individual
H: Rib fragment from an adult indivdual
J: Vertebral fragment from an adult individual
K: First right metacarpal from an adult individual
L: Scapula fragment - human
O: Hand - medial phalanx from an adult individual
P: Rib fragment from a juvenile individual
R: Foot - first proximal phalanx from an adult individual
S: Right trapezoid from an adult individual
T: Animal bone
U: Rib fragment from an adult individual
V: Fragment of left ulna from an adult individual
X: Animal bone
Y: Left patella from an adult individual
Z: Right talus from an adult individual

167 600/300
Fragments of tibia and fibula from an adult individual

168 600/300
Animal bone present
Humeral shaft fragment from an adult individual

173 600/200
Animal bone

184 600/300
Fragments of pelvis and hand from an adult individual

184 600/300
Fragments of teeth and humerus. There were a minimum number of two individuals present - an adult and a juvenile.

190 700/200
Animal bone present
Skull fragment from an adult individual

191 700/200
Animal bone present
Phalanges from the hands and feet of an adult individual.

194 700/200
Animal bone present
Fragments of skull, rib and metacarpal from an adult individual

195 700/200
Skull fragment from an adult individual

196 700/200
Animal bone present
Fragments of pelvis, radius, ulna, humerus and femur, probably all from the same individual.
Sex: Male: 2,8
Age: Adult
Stature: 1.77m ± .0432 c.5'10". Right ulna

BOX 19

203 500/400
Animal bone

214 Z00/300
Animal bone present
Various fragments - human
Sex: Male: 3
Age: Adult

215 Z00/300
Maxillary first molar and long bone shaft from an adult individual.

218 Z00/300
Animal bone present
Various fragments - human - minimum number of three individuals: two juveniles and one adult.

219 Z00/300
Animal bone

220 Z00/300
Animal bone present
Fragments of humerus, femur, clavicle, hands and feet.
Sex: ?Male: 3
Age: Adult

221 500/200
Animal bone

223 500/300
Animal bone

235 Z00/300
Animal bone present
Fragments of right clavicle, vertebrae, femur, patella and skull. The right clavicle corresponded with that from 220 and it was therefore suggested that the bones came from the same individual.
Sex: Male: Femur - Bicondylar breadth
Age: Adult
Stature: 1.74m ± .093 c.5'8". Femur - segment 4

236 Z00/300
Animal bone present
Fragments of skull, tibia and fibula.
Sex: ?Male: 3
Age: Adult

246 500/300
Rib fragment - human

BOX 20

252 Z00/300
Fragments of humerus, ulnae, patella, femur, ribs, hands and mandible. There were a minimum number of two individuals present.
Age: Both adult

254 500/200
Skull fragments from an adult individual

255 500/200
Animal bone present

Fragments of skull, teeth, femur and ulna.
Sex: ?Male: 3
Age: Adult

257 500/200
Animal bone

272 600/200
Fragments of skull and metacarpal from an adult individual

274 600/300
Fragments of hands and feet. There were a minimum number of two individuals present - an adult and a juvenile.

275 600/300
Fragments of patella and phalanges. There were a minimum number of two individuals present - an adult (probably male) and a juvenile.

277 600/300
Animal bone present
Skull fragment from an adult individual

278 600/300
Animal bone present
Fragments of skull, femur, tibia and feet. There were a minimum number of two individuals present - an adult and a juvenile (not the same as the one in 275).

281 500/200
Animal bone

283 500/400
Skull fragments - human

284 500/400
Skull fragment - human

289 600/300
Skull fragment from an adult individual.

282 BOXES 20,21,22

Animal bone present
282 was listed as a "reburial pit". The material was examined for the minimum number of individuals, sex, age, stature and pathology. It was found that there were a minimum number of nine individuals present (based on the fragments of right femur).
Sex: 5 males, 4 unknown
Age: 8 adults, 1 juvenile
Stature: It was possible to assess this for four femora only.
1.82m ± .0327 c.5'11"
1.63m ± .0327 c.5'4"
1.72m ± .088 c.5'8"
1.70m ± .088 c.5'7"

BOX 23

300 600/300
Animal bone present
Fragments of ulna, radius, scapula, femur and ribs. There were a

minimum number of two individuals present - both adults.

302 600/200
Animal bone present
Skull fragment - human

305 700/300
Animal bone

308 600/300
Fragments of skull, rib and vertebra from an adult individual.

310 600/500
Animal bone present
Fragments of skull, teeth, hands and fibula. There were a minimum number of two individuals present - an adult and a juvenile.

317 500/200
Animal bone present
Skull fragment - human

319 500/200
Animal bone

320 500/300
Fragments of skull, mandible, vertebrae, scapula and metatarsal.
Sex: Female: 3
Age: 20-25 years: Dental wear

322 500/500
Fourth right metatarsal from an adult individual.

323 700/500
Animal bone present
Fragments of mandible and metacarpal from an adult individual.

324 700/500
Fragment of femoral shaft from an adult individual.

349 700/300
Animal bone present
Fragments of tibiae, fibula, femur, teeth and hands.
Sex: Female: 3
Age: Adult

350 700/400
Third right metatarsal from an adult individual.

351 700/400
Fragments of skull, ulnae, radii, femora, tibiae and hands and feet. There were a minimum number of two individuals present.
Sex: Female: 3 (adult only)
Age: 20-25 years: Dental wear. Juvenile.

354 600/300
Fragments of skull and scapula. There were a minimum number of two individuals present - an adult and a juvenile.

358 600/400
Proximal phalanx from the hand of an adult individual.

BOX 24

361 700/400
Animal bone present
Fragments of skull and mandible
Age: 7-10 years: Dental development

362 700/400
Fragments of skull, mandible, ribs and hands and feet from an adult individual.

364 600/400
Animal bone present
Fragments of skull from an adult individual

367 700/400
Three fragments from an adult individual

371 700/400
Fragments of humeri, ulnae, radii, ribs, pelvis and femur.
Sex: ?Male: 8,10
Age: Adult
Stature:(assumed male): 1.68m ± .0432 c.5'6"

373 600/400
Animal bone present
Clavicular fragment from an adult individual

374 700/400
Fragments of radius, vertebra, rib and metacarpal from an adult individual.

378 600/400
Animal bone present
Fragments of skull from an adult individual

382 700/300
Humeral fragment from an adult individual.

385 (not listed)
Fragments of fibula, rib and tooth from an adult individual.

387 600/200
Animal bone present
Fragments of skull and femur from an adult individual.

392 600/200
Animal bone

396 600/200
Animal bone present
Fragments of skull, tibia, ribs, ulna, radius and fibula
Sex: ?Male: 3
Age: Adult

397 600/200
Animal bone present
Fragments of vertebrae, ulna and hand from an adult individual.

BOX 25. No. 381 600/300

Animal bone present
This sample contained the remains of a minimum number of 4 individuals - three adults and a juvenile. The adults were probably two males and a female. It was suggested that the larger of the two males probably equated with the skeletal remains listed as Burial 445 as did the juvenile. Therefore an absolute minimum number of two individuals was indicated.

BOX 26. No. 395.

Animal bone present
This sample contained the remains of a minimum number of three individuals - two adults and a juvenile. One of the adults was a male and the other probably a female. One of the adults had a suggested age of 30-35 years and the juvenile was aged at 10-12 years.

BOX 27.

408 600/400
Fragments of femur, rib and metacarpal.
Sex: Male: Femur - Bicondylar breadth
Age: Adult
Stature: 1.65m ± .088 c.5'5".

410 700/400
Animal bone present
Fragments of skull, clavicle and left humerus
Sex: Female: 10
Age: Adult

413 700/400
Animal bone present
Fragments of skull, tooth, vertebra, ulna, radius, fibula, patella and hands and feet from an adult individual.

414 700/400
Fragments of skull, vertebra, metacarpal and metatarsal from an adult individual. There was no evidence to suggest that this was the same individual as 413.

415 700/400
Fragments of fibula and metacarpal from an adult individual.

426 700/300
Animal bone present
Fragments of skull, sternum, clavicles, scapula, ribs, vertebra, humerus, ulnae, femur, patellae and fibula. There were a minimum number of three individuals present.
Sex: ?Male, ?Female: 3
Age: Two adults and one juvenile (less than 12 years).

428 500/500
Animal bone

430 700/400
Skull fragment from an adult individual.

431 600/300

Animal bone present
Fragments of skull, vertebra, scapula, femur, patella and hands and feet. There were a minimum number of three individuals present.
Sex: ?Male, ?Female: 3
Age: Two adults and one juvenile (less than 12 years).

433 500/500
Foot bone from an adult individual.

435 600/300
Rib fragments from an adult individual

437 400/200
Skull fragment from an adult individual.

439 700/400
Fragments of mandible and epiphysis. There were a minimum number of two individuals present - a juvenile and an adult.

BOX 28

442 600/500
Animal bone present
Fragments of teeth and left clavicle.
Sex: Female: 3
Age: Adult

445 600/300
Animal bone

447 800/300
Animal bone present
Fragments of skull, scapula, left clavicle, ribs, vertebra and right ulna.
Sex: Female: 1,3
Age: Adult
Stature: 1.73m ± .043 c.5'8".

451 600/200
Animal bone present
Fragments of humerus, femur and metacarpals. There were a minimum number of two individuals present.
Sex: Male, -: 3
Age: Adults

452 600/200
Animal bone present
Fragments of radius, rib and metacarpal from an adult individual.

453 700/200
Animal bone present
Fragments of skull and mandible.
Age: 30-35 years: Dental wear.

454 600/300
Animal bone present
Fragments of skull, sternum, rib, pelvis, radius, femur, tibia and fibula. There were a minimum number of three individuals present.
Sex: Male, ?Male, Juvenile: 2,3

Age: 7-8 years, 25-30 years, adult: Dental development and wear
Stature: (Assessed for one adult only): 1.66m ± .033 c.5'5".

BOX 29

455 600/200
Animal bone present
Fragments of skull, right radius and ulna, metacarpal and metatarsal.
Sex: Male: 8
Age: Adult
Stature: 1.71m ± .088 c.5'7"

456 600/200
Animal bone present
Fragments of lumbar vertebra, femur and hand from an adult individual.

457 600/200
Animal bone present
Fragments of skull and fibula from an adult individual.

458 600/200
Animal bone present
Fragments of right ulna and metatarsal from an adult individual.

459 600/300
Fragments of hand and epiphysis. There were a minimum number of two individuals present - an adult and a sub-adult.

460 800/300
Animal bone present
Fragments of patella, rib and hand from an adult individual.

461 600/300
Animal bone present
Fragments of ulna, vertebra, pelvis, humerus, rib, femur and feet. There were a minimum number of two individuals present.
Sex: Male, juvenile: 8,11
Age: Juvenile, adult

462 700/200
Animal bone

467 600/300
Second left metacarpal from a juvenile individual.

476 600/200
Right hamate from an adult individual.

478 600/400
Fragments of skull, scapula and vertebra from an adult individual.

482 600/200
Animal bone present
Fragments of skull, rib, right clavicle and humerus.
Sex: Female: 11
Age: Adult

485 800/300

Patella from an adult individual. This bone almost certainly belonged to Burial 460.

487 Z00/200
Animal bone present
Fragments of skull, tooth and right clavicle from an adult individual.

BOX 30

488 Z00/200
Animal bone present
Fragments of femur, patella, mandible, fibula and foot.
Sex: Female: 8
Age: Adult

490 600/200
Fragments of femur and skull from an adult individual.

496 600/200
Animal bone present
Fragments of skull, ribs, pelvis, sacrum, ulnae, radius and femur from an adult individual.

501 Z00/200
Animal bone present
Fragments of pelvis, sacrum, ulna and hands. There were a minimum number of two individuals present.
Sex: Male, -: 3
Age: 20-25 years, adult: Dental wear

503 Z00/300
Fragments of femur, teeth and foot. There were a minimum number of two individuals present - a juvenile and an adult.

504 Z00/300
Fragments of skull and metatarsal from an adult individual.

BOX 31

505 Z00/300
Animal bone present
Fragments of skull, mandible, ribs, clavicle, pelvis, scapula, humerus, femur, radius and hands and feet. There were a minimum number of two individuals present.
Age: Juvenile, 20-25 years: Dental wear

506 Z00/300
Two hand phalanges from an adult individual.

509 Z00/300
Animal bone present
Fragments of vertebrae, ribs, scapula, humerus and femur. There were a minimum number of two individuals present.
Sex: Female, Male: 8
Age: Adult
Stature: (Female) 1.58m ± .010 c.5'2"

512 Z00/400
Animal bone present
Fragments of skull, vertebra, humerus and left ulna. There were

a minimum number of two individuals present.
Sex: Female, Male: 3,11
Age: Adult
Stature: (Male) 1.83m ± .0432 c.6'0"

513 Z00/400
Animal bone present
Fragments of skull, vertebrae, ribs, radius, feet and patella from an adult individual.

BOX 32

514 Z00/300
Fragments of skull, vertebrae, pelvis, left humerus, long bones and hands and feet.
Sex: Male: 2,6,14
Age: Adult

515 Z00/300
Animal bone present
Fragments of skull, teeth and phalanges from an adult individual.

516 Z00/400
Animal bone present
Fragments of skull, humerus and phalanges
Sex: Male: 10
Age: Adult

517 Z00/400
Two vertebral fragments from an adult individual.

520 Z00/400
Animal bone present
Fragments of ribs, vertebrae, clavicle, pelvis, humerus, radius and ulna. There were a minimum number of two individuals present - both adults.

524 600/400
Fragment of metacarpal - human.

529 Z00/200
Fragment of left clavicle from an adult individual

530 Z00/400
Fragments of vertebrae, pelvis, sacrum, tibia, fibula and hands from an adult individual.

537 600/400
Animal bone present
First right metacarpal from an adult individual.

540 Z00/500
Animal bone

541 600/400
Animal bone

551 Z00/300
Maxillary lateral incisor from an adult individual.

563 Z00/400

Animal bone present
Fragments of clavicle, scapula, ribs, vertebrae, humerus and femur.
Sex: Male: 8
Age: Adult

BOX 33

571 600/600
Animal bone present
A large sample of human bone fragments representing most parts of the skeleton. There were a minimum number of four individuals present - three adults and one juvenile.

579 (not listed)
Animal bone present
Fragments of humerus shaft and metacarpals from an adult individual.

580 700/400
Two foot bones from an adult individual.

585 700/300
Animal bone

587 600/300
Second right metatarsal from an adult individual.

591 400/200
Animal bone present
Skull fragment from an adult individual.

BOX 34

596 500/200
Animal bone present
Fragments from most of the upper skeleton, legs missing.
Sex: Male: 10,12
Age: 20-25 years: Dental wear
Stature: 1.79m ± .0405 c.5'11"

598 (not listed)
Animal bone present
Fragments of skull, left humerus and pelvis.
Sex: Male: 2,10
Age: 50+ years: Pubic symphysis

603 700/400
Two vertebral fragments from an adult individual.

604 800/300
Animal bone present
Fragments of scapula, rib, humerus, femur, tibia, ulna and hands.
Sex: Female: 8,10,12
Age: Adult

605 800/300
Fragment of sternum from a juvenile individual.

611 (not listed)
Animal bone present

Fragments of skull, metacarpal and phalanx from an adult individual.

BOX 35

609 800/300
Animal bone present
Fragments of scapula, ribs, vertebrae and pelvis. There were a minimum number of two individuals present - both adult (much of the bone could have come from Burial 608).

617 600/600
Fragments of skull, mandible and tibia.
Sex: ?Female: 1
Age: 30-35 years: Dental wear

617 600/700
Animal bone present
Fragments of skull, scapula, pelvis, sacrum, vertebrae, arms and femur. There were a minimum number of four individuals present.
Sex: Female, Male, Two juveniles: 2,8
Age: Two juveniles and two adults. One adult was aged at 30-50 years.
Pathology: There was some evidence for fusion of a number of thoracic vertebrae (pathological) but with so little evidence it was not possible to make any further comment.

BOX 36

699 500/500
Animal bone present.
Fragments of sacrum, pelvis, femur and tibia. There were a minimum number of two individuals present - a juvenile and an adult.

BOX A/B

Extra bone extracted from the animal bone sample.

Mediaeval gully 253
252: Fragment of talus and unidentified human bone from a juvenile individual.

Mediaeval pit 259
235: Fragments of skull, ribs, vertebra, scapulae, humerus and foot from an adult male individual.

Mediaeval pit 337
302: Fourth and fifth left metatarsals from an adult individual.
312: Fragments of skull and pelvis from an adult individual - this could be the same as 302.

Mediaeval pit 370
122: Fragment of skull and scapula from an adult, possibly female.

Mediaeval pit 381
436: Fragments of skull, ribs, vertebrae, scapula, radius and humerus. There were a minimum number of three individuals present. These were a juvenile, an adult male and an adult female.

Mediaeval pit 397

396: Fragments of skull, vertebrae, ribs, ischium and femur from an adult individual. The femur had a healed fracture of the shaft which had led to displacement of the bone on either side of the break and to shortening of the affected limb.

495: Fragments of humerus, scapula and tibia from an adult individual.

Mediaeval pit 440

392: Fragments of rib and foot from an adult individual.

Mediaeval pit 484

431: Fragments of rib, vertebrae, pelvis, ulna, humerus, femur and foot. There were a minimum number of two individuals present - an adult and a juvenile.

454: Fragments of pelvis and metacarpal from an adult individual

461: Fragments of scapula, ribs, vertebra, ulna, femur and calcaneus. There were a minimum number of two individuals present - a juvenile and an adult male.

Mediaeval pit 529

220: Fragments of skull, thoracic vertebra, pelvis and foot from an adult individual.

Mediaeval pit 567

566: Vertebral fragment from an adult individual.

Mediaeval pit 622

456: Fragments of vertebra, pelvis and scapula from an adult male individual.

Mediaeval pit 628

281: Two fragments of human skull.

317: Fragment of humerus from an adult individual.

Mediaeval pit 637

451: Fragments of rib and long bone shaft from an adult individual.

458: Second left metatarsal and phalanx from an adult individual

469: Animal bone

480: Fragments of rib, clavicle, sternum, scapula, femur and scaphoid from an adult individual.

482: Scapula fragment from an adult individual

Mediaeval pit 639

462: Animal bone

Bibliography

Acsadi G. and NemesKeri J.: A History of Human Life Span and Mortality. Akademiai Kiado, Budapest. 1970.

Anderson J.E.: The Development of the Tympanic Plate. National Museum of Canada. Bulletin no.180. Contributions to Anthrop. Part I. 1960.

Brooks S.T.: Skeletal age at death: The reliability of cranial and pubic age indicators. Am.J.Phys.Anthrop.13:567-597. 1955.

Brothwell D.R.: The Palaeopathology of Early British Man: an essay on the problems of diagnosis and analysis. J.Roy.Anthrop.Inst. 91:318-344. 1961.

Brothwell D.R.: Digging Up Bones. 3rd ed. British Museum (Natural History). 1981.

Courville C.B.: War wound of the cranium in the Middle Ages. Bull.Los Angeles Neurol. Soc. 30:27-33. 1965.

El-Najjar M.Y. and McWilliams K.R.: Forensic Anthropology. Charles C. Thomas, Illinois. 1978.

Flander L.B.: Univariate and multivariate methods for sexing the sacrum. Am.J.Phys.Anthrop.49:103-110. 1978.

Gilbert B. Miles and T.W. McKern: A method for ageing the female os pubis. Am.J.Phys.Anthrop.38:31-38. 1973.

Giles E.: Discriminant function sexing of the human skeleton. In Stewart T.D.(ed.): Personal Identification in Mass Disasters:99-109. Washington, National Museum of Natural History. 1970.

Hanihara K. and Suzuki T.: Estimation of age from the pubic symphysis by means of multiple regression analysis Am.J.Phys.Anthrop.48:233-40. 1978.

Houghton P.: The relationship of the pre-auricular groove of the ilium to pregnancy. Am.J.Phys.Anthrop.41:381-390. 1974.

Krogman W.M.: The Human Skeleton in Forensic Medicine. Charles C. Thomas, Illinois. 1962.

Manchester K. and O.E.C. Elmhirst: Forensic aspects of an Anglo-Saxon injury. Ossa 7:179-188. 1980.

McKern T.W.: Estimation of skeletal age: from puberty to about 30 years of age. In Stewart T.D.(ed.): Personal Identification in Mass Disasters: 41-56. Washington, National Museum of Natural History. 1970.

McKern T.W. and Stewart T.D.: Skeletal Age Changes in Young American Males, Analyzed from the Standpoint of Age Identification. Environmental Protection Res. Div.(Quatermaster Res. and Div. Center, U.S.Army, Natick, Mass.) Tech.Rep.EP-45. 1957.

Miles A.E.W.: The dentition in the assessment of individual age in skeletal material. in Brothwell D.R.(ed.): Dental Anthropology, 191-209. Pergamon Press. 1963

Moorrees C.F.A., Elizabeth A. Fanning and E.A. Hunt Jr.: Formation and resorption of three deciduous teeth in children. Am.J.Phys.Anthrop.21:205-213. 1963.

Olivier G.: Practical Anthropology. Charles C. Thomas, Illinois. 1969.

Olivier G. and H. Pineau: Nouvelle determination de la taille foetale d'apres les longueurs diaphysaires des os longs. Ann.Med.Leg.40:141-144. 1960.

Phenice T.W.: A newly developed visual method of sexing the os pubis. Am.J.Phys.Anthrop.30:297-301. 1969.

Putschar Walter G.J.: The structure of the human symphysis pubis with special consideration of parturition and its sequelae. Am.J.Phys.Anthrop.45:589-594. 1976.

Schour I. and M. Massler: The development of the human dentition J.Am.Dent.Assoc.28:1153-60. 1941.

Schranz D.: Age determination from the internal structure of the humerus. Am.J.Phys.Anthrop.17:273-277. 1959.

Steele D. Gentry: Estimation of stature from fragmentary remains of long limb bones. In Stewart T.D.(ed.): Personal Identification in Mass Disasters:85-97. Washington National Museum of Natural History. 1970.

Steele D. Gentry: The estimation of sex on the basis of the talus and calcaneus. Am.J.Phys.Anthrop.45:581-588. 1976.

Stewart T.D.: Identification of the scars of parturition in the skeletal remains of females. In Stewart T.D.(ed.): Personal Identification in Mass Disasters:127-135. Washington,National Museum of Natural History.1970

Stewart T.D.: Essentials of Forensic Anthropology. Charles C. Thomas, Illinois. 1979.

Suchey Judy M., D.V. Wiseley, R.F. Green and T.T. Noguchi: Analysis of dorsal pitting in the os pubis in an extensive sample of modern American females. Am.J.Phys.Anthrop.51:517-540. 1979.

Thieme F.P. and Schull W.J.: Sex determination from the skeleton Hum.Biol.29:242-273. 1957.

Todd T.W.: Age changes in the pubic bone.I.The male white pubis Am.J.Phys.Anthrop.3:285-334. 1920.

Trotter M.: Estimation of stature from intact long limb bones. In Stewart T.D.(ed.): Personal Identification in Mass Disasters:71-83. Washington, National Museum of Natural History. 1970.

Ubelaker D.H.: Human Skeletal Remains. Aldine, Chicago. 1978.

Washburn S.L.: Sex differences in the pubic bone. Am.J.Phys.Anthrop.6:199-208. 1948.

Acknowledgements

I should like to thank Alison Locker for her help in sorting and identifying the animal bone.

List of Plates

1. Skeleton 250: Posterior view of innominates to illustrate hip arthritis. Left bone to the right of the photograph.

2. Skeleton 250: Anterior view of femora to illustrate arthritis. Left bone to the right of the photograph.

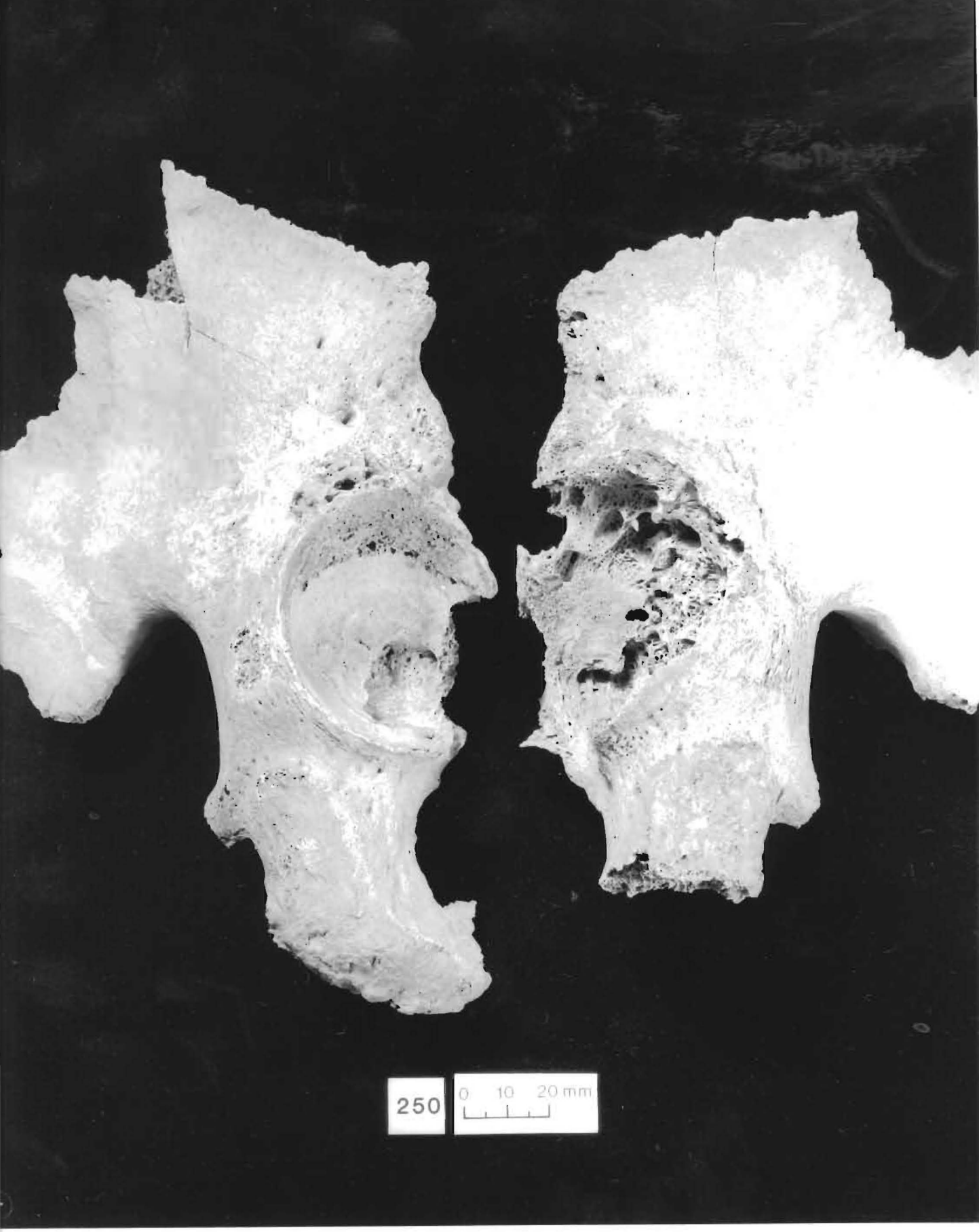
3. Skeleton 250: Anterior view of left scapula with fractured neck.

4. Skeleton 250: Medial view of left scapula with fractured neck.

5. Skeleton 450: Probable joint dysplasia of the left hip with associated arthritis.

6. Skeleton 608: Superior view of skull showing cuts on the right parietal and frontal bones.

7. Skeleton 306: Anterior view of congenital fusion of axis and third cervical vertebra.



1. Skeleton 250: Posterior view of innominates to illustrate hip arthritis. Left bone to the right of the photograph.

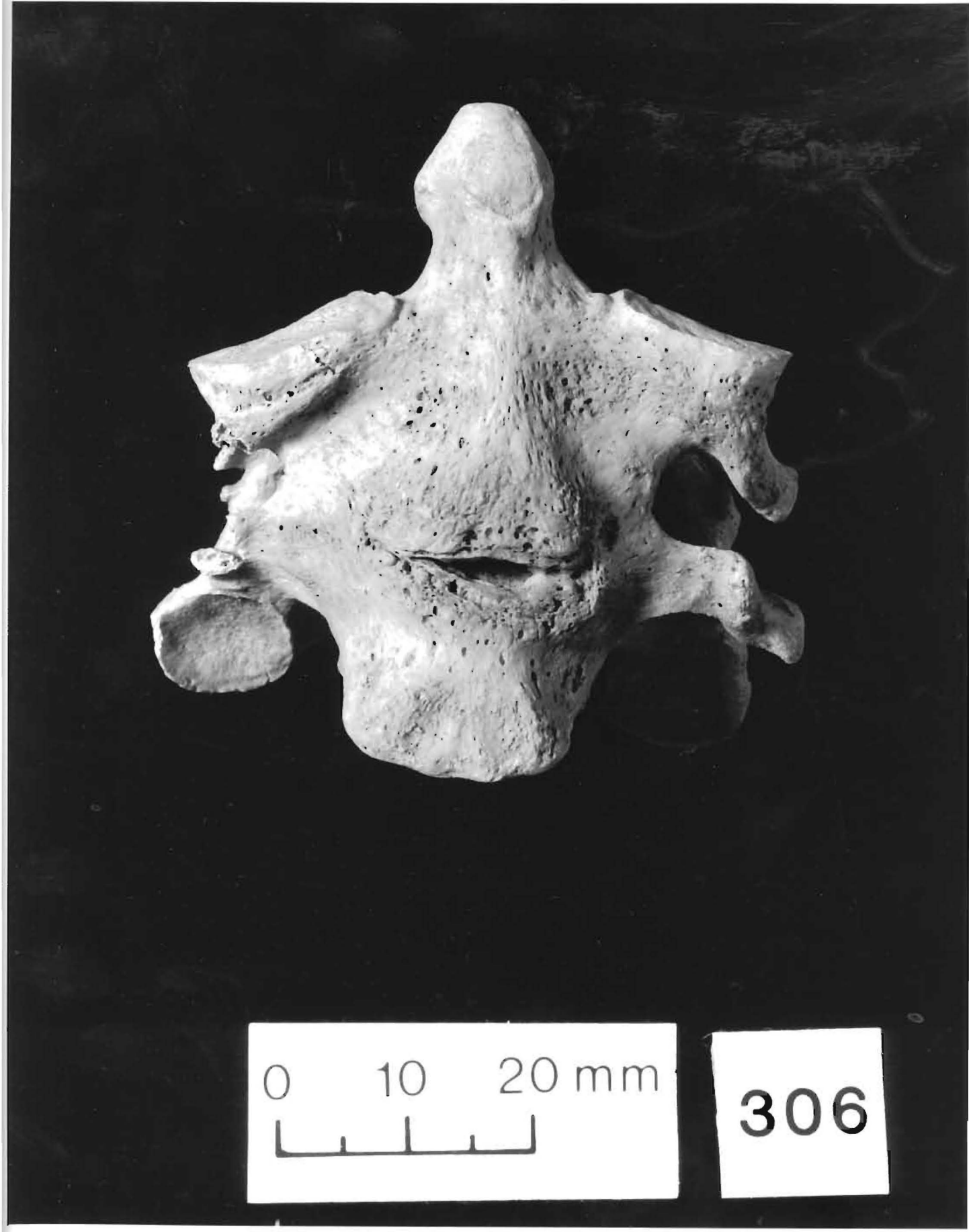
2. Skeleton 250: Anterior view of femora to illustrate arthritis. Left bone to the right of the photograph.

3. Skeleton 250: Anterior view of left scapula with fractured neck.

4. Skeleton 250: Medial view of left scapula with fractured neck.

5. Skeleton 450: Probable joint dysplasia of the left hip with associated arthritis.

6. Skeleton 608: Superior view of skull showing cuts on the right parietal and frontal bones.



7. Skeleton 306: Anterior view of congenital fusion of axis and third cervical vertebra.