ANCIENT MONUMENTS LABORATORY

REPORT

1495

SERIES/No ENVIRONMENTAL

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TITLE St Albans 1966-68. Human skeleton report (Inhumations)

AHR Rpor 1495

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ST ALBANS 1966-68

HUMAN SKELETON REPORT
(INHUMATIONS)

The preservation of the bones received for study was very poor. They were friable and extremely eroded. Only eroded fragments of skull or long bone shafts were remaining from many of the burials. The preservation of the archaeologically earlier bones was generally better than that of the later.

The poor preservation often made it difficult to assess age and sex with any certainty. Further difficulty was caused by erosion of the dentine of many teeth, so that only the enamel crowns remained. Due to this, it was difficult to decide if unworn teeth had erupted or not.

The large number of extremely fragmentary bones made it difficult to assess the number of individuals represented. As the teeth are usually better preserved than the bones, it was decided to arrive at a minimum number of individuals by counting the number of mandibular first molars (right side). This gave a minimum number of fourteen individuals; five immature, nine adults. By consideration of the teeth and bones present in each burial, in relation to age and sex, this number was increased by the addition of three adults. There were also the remains of six new-born infants. Therefore, the total minimum number of individuals was estimated at 23. Of these, five were thought to be Iron Age, ten Romano-British, and seven Saxon. The actual number of individuals present was probably much higher, but it is not possible to establish this on the surviving anatomical evidence. Remains which were considered to represent a separate individual are marked by an asterisk on the following list. The skeletons are also listed under the relevant archaeological periods.

The age of the individuals was estimated mainly by the degree of dental attrition* although other factors (eg the degree of osteo-arthritis and fusion of the epiphyses), were taken into account where applicable. A numerical classification of molar wear is given at the side of the dental formulae*. The key for the dental formulae is as follows:-

X	=	ante-mortem loss	V	=	unerupted	C	= Caries:-
/	=	post-mortem loss	O	=	erupting	OC	= occlusal
NP	=	not developed	——	=	area missing	Lab	= labial
A	=	abscess	ℓ	=	tooth only	L	= lingual
E	=	pulp exposure			(socket missing)	MC	= mesial
						DC	= distal
						S	= severe (roots only remain)

* As in "Digging up Bones" D R Brothwell 1972

IRON AGE SKELETONS

* SB/LN and SB/LN (91) Juvenile, about 8 years

Fragments of incomplete skull (including petrous bones and teeth), vertebrae, metacarpal, and long bone shaft (including shaft of an immature femur). The dental formula is:-

							(3)	(4)	(5)		(7)
6	~~6~~	d	~~6~~	2	1	12	c	d	~~6~~	6	
~~6~~	~~6~~	d	c	2	1	12	~~6~~	d	•	~~6~~	
	(4)	(3)					(3)	(4)	(5)		(7)

The mid-shaft region of the femur is swollen, the resulting shape suggesting the presence of a healed fracture. No evidence of inflammation of the bone was observed

SB/LN (92) Sub-adult, 13-18 years

Fragments of scapula, clavicle, humerus, radius, and ulna (from the left side); femora; right tibia; few fragments of pelvis, ribs, and vertebrae. The epiphyses of the heads and greater trochanters of the femora are unfused. A mandible fragment (left side), with an unerupted third molar, and an upper left second incisor with slight wear are also present.

SF/FE (35) Adult, probably male, age about 17-25 years

The skull is fairly complete on the right side (8 measurements were possible; these are listed on the following table). The sagittal suture is partly obliterated; the coronal and lambdoid sutures are still open. The remainder of the body is represented by fragments of vertebrae (mainly cervical), ribs, scapulae, clavicle, humeri, femora, right tibia, bones from the hands and feet, and eleven teeth. The dental formula is:-

													OC MC			
8	7	6	5	4	3	2	1	~~1~~	2	~~3~~	4	~~5~~	6	——	M_1	= 2+
															M_2	= 2
——	——	——	——	——	——	——	——	——	——	——	——	——	——	——	M_3	= 1

There is slight alveolar bone recession associated with very slight calculus. Some of the vertebral bodies may display slight arthritic lipping.

* AA/EJ (20) and SJ/GD (72) Adult male 17-25 years

The bones are fragmentary, but most of the body (except the left femur and some bones from the hands and feet) is represented. The skull vault is fairly complete. Skull and long bone measurements are listed in the following tables. The dental formula is:-

OC													DC				
8	7	6	5	4	3	2	1	1	2	3	4	5	6	~~7~~	~~8~~	M_1	= 3+
																M_2	= 2+
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8	M_3	= 2

There are slight calculus deposits and very slight alveolar bone recession. There is a medium degree of orbital osteoporosis. The femora (particularly the right) are platymeric.

* SF/FG (36) Adult female 25-35 years

Fragments of skull vault, mandible, palate, atlas, axis, clavicle, scapulae, right humerus, pelvis, femora, left tibia, fibula and tarsus. Skull and long bone measurements are listed in the following tables. The dental formula is:-

—	—	—	—	—	3	2	—	—	—	3	4	—	—	—	—
8	7	6	5	4	3	2	~~1~~	1	2	3	4	5	—	~~7~~	—
NP (?)	DC	DC	SC A E												

M_1 = 4+
M_2 = 4

There is slight calculus and medium alveolar bone recession. Hypoplasia of the enamel is slight on all teeth, and medium on the lower canines.

* SB/LU BIV and SB/LT Adult, probably male, probably over 25 years old

Fragments of skull, ribs, pelvis, femur, tibia, a fifth metatarsal, and long bone shafts. There is a fragment from the left side of the palate with the second and third molars in position. The wear is, M_2 = 5, M_3 = 2+. The sex is suggested to be male, owing to the large development of the frontal sinus and supra-orbital area. The fragment of right femur is platymeric.

* SF/DJ (26) Female, probably over 40 years old

Most of the skull, palate and mandible; skull measurements are listed in the following table. The post-cranial bones consist of a few fragments of scapulae, humerus, pelvis (both sides), left femur, tibiae, and the axis. The dental formula is:-

—	—	—	—	4	3	2	1	—	—	—	—	5	6	7	—
~~8~~	~~7~~	~~6~~	~~5~~	4	3	~~2~~	~~1~~	~~1~~	~~2~~	3	4	5	~~6~~	~~7~~	~~8~~
or NP							(or	am)				MC			or NP

M_1 = 7
M_2 = 4+

Anterior teeth worn almost to the roots

There is alveolar bone recession, which varies from a slight to a medium degree.

SJ/AT (10) Adult female

Fragments of pelvis (both sides), femora, tibiae, one patella, and skull. The sagittal suture is open. Two measurements of the femur are listed in the following table. The individual was adult, but there are no signs of old age.

IRON AGE SKELETONS - SKULL MEASUREMENTS

(E = estimated measurements)

	AA/EJ (♂)	SF/FE (♂)	SF/FG (♀)	SF/DJ (♀)
Maximum length (L)	182	183(?)	-	182(?)
Max parietal breadth (B)	146	-	-	-
Min frontal breadth (B')	105	-	-	94
Basio-bregmatic height (H')	129	-	-	115 (??)
Basion-nasion (LB)	96	-	-	97
Frontal arc (S_1)	121	123(?)	-	125
Parietal arc (S_2)	132	127	124	-
Occipital arc (S_3)	120	-	108	-
Frontal chord (S'_1)	105	108	-	108
Parietal chord (S'_2)	118.5	114	107.8	-
Occipital chord (S'_3)	97.5	-	92.1	-
Biasterionic breadth (BiB)	113(?)	-	-	99.7
Nasion-alveolar point (G'H)	-	73E	-	-
Foraminal length (FL)	39.0	-	-	33.4
Foraminal breadth (FB)	-	-	-	26.9
Nasal height (NH')	-	55E	-	-
Simotic chord (SC)	-	-	-	7.2
Bi-dacryonic chord (DC)	-	12(?)	-	-
Bi-condylar width (W1)	128(?)	-	-	-
Bimental breadth (ZZ)	42.4	-	-	43.4
Least ramus breadth (RB')	35	-	-	-
Sagittal height mandible (H1)	32.8	-	30(?)	-
Max mandible length (ML)	107.5	-	-	-
Length left ramus (RL)	68.5	-	-	-
Ht at 2nd molar (M_2H)	31.9	-	29.9E	-
Condyle length (CYL)	22.9	-	-	-
Coronoid height (CH)	71	-	-	-
Mandibular angle (ML)	119°	-	-	-

LONG BONE MEASUREMENTS

	AA/EJ (IA) ♂	SD/B(1) (♀) (ROMAN)	SF/FG (♀) (IRON AGE)	SJ/AT (♀) (IRON AGE)
Min ant-post diam femur (FeD_1)	26.4	—	23.5(?)	21.9
Transverse diam femur (FeD_2)	42.8	—	34.8	34.5
Max ant-post diam tibia (TiD_1)	30.2	29.2	34.4	—
Transverse diam tibia ($Ti D_2$)	25.8	21.2	23.4	—
Max length femur. (FeL_1)	443(?)	—	—	—

ROMANO-BRITISH SKELETONS

Infants

The preservation of the infant skeletons was generally better than that of the adults. The age at death was estimated by consideration of the general size, and development of the bones and dentition. Measurements are listed in the following chart.

* SF/EE (31) New-born infant

Fairly complete skeleton, lacking a few vertebrae and some bones of hands and feet. Eight deciduous teeth are present (4 incisors, 2 canines and 2 molars). One minor abnormality was observed; there is a double entry of the nutrient foramen on the right tibia. The child may have survived for a short time after birth.

* AA/GY (30) New-born infant

Fairly complete but fragmentary skeleton, lacking left scapula; right clavicle; some skull, vertebrae, ribs, and bones from the hands and feet. Four deciduous teeth (3 incisors and 1 molar) are present. Death probably occurred at about the time of full-term birth.

* AA/HF(31) New-born infant

Incomplete skull, ribs, vertebrae, humeri, ulnae, radius, pelvis, femora, tibiae, and one tooth (the lower left lateral deciduous incisor). Death probably occurred at about the time of birth.

* SL/EN (1) New-born infant

Fairly complete skeleton, lacking some of the skull, ribs, vertebrae, pelvis, bones from hands and feet, and the right clavicle. One tooth is present; a deciduous lower (left) lateral incisor, with most of the enamel crown formed. The child probably died at about the time of full-term birth. Very slight orbital osteoporosis was noted.

* SS/HB(2) New-born infant

Incomplete skeleton; thorax, lower limbs, and one ulna only. Death probably occurred at, or possibly shortly before, full-term birth.

SX/DN

One rib, comparable in size to a new-born child's rib.

SF/FA

Two fragments of skull vault. Thickness comparable to that of a new-born or slightly older child.

SS/KV New-born infant

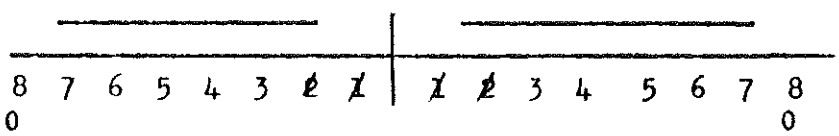
Fragments of incomplete skull, clavicles, scapula, right humerus, ulnae, radii, femora, few ribs and vertebrae, three bones from the hands or feet, two deciduous teeth (one lower incisor, one first molar). Slight porosity of the interior wall of the orbit near the molar (on both sides) was observed. Death probably occurred at about the time of birth.

SX/GT (49)

One upper and one lower molar with virtually no wear. It is not possible to tell if the teeth had erupted, due to the unusual conditions of preservation described above.

* AL/EA (30) Sub-adult, about 16-20 years

Mandible fragments with twelve teeth are present. The dental formula is:-



$M_1 = 2+$

$M_2 = 2$

Most teeth (particularly the canines) have slight hypoplasia of the enamel. There is no alveolar recession or calculus deposits.

AL/DZ (30) AL/DU(30) AL/EC(30) and AL/DY(30)

From the same grave as AL/EA(30). Long bone shaft fragments, including a mid-shaft humerus fragment from either a female, or a sub-adult individual.

* SD/B(1) Adult, possibly female, 17-25 years

Few mandible fragments; right clavicle, scapula, humerus, radius, and ulna; some vertebrae, ribs, tarsals and metatarsals; left tibia. The dental formula is probably:-

$M_2 = 2$

The canine has very slight hypoplasia of the enamel. Two long bone measurements are listed in the table.

ROMANO-BRITISH INFANTS-MEASUREMENTS

	SS/KV		SS/HB		SL/EN		AA/HF		AA/GY		SF/EE	
	l	r	l	r	l	r	l	r	l	r	l	r
Ex-occipital (max. dimension) *	25.5	26.3	-	-	29.0	28.3	-	-	-	-	28.4	27.9
Mandible (max. measurement from condyle to chin)	-	-	-	-	52(?)	-	-	-	-	-	-	-
Clavicle (max. length)**	-	-	-	-	46.0	-	-	-	-	-	-	-
Humerus (max. length) **	-	-	-	-	55.3	53.1	-	68.2	(66.0		66.9	65.5
Ulna (max.length) **	-	-	-	-	60(?)	60(?)	-	61.5(?)	-	-	62.3	-
Radius (max.length) **	-	-	-	-	52.3	53.5	-	53.7	-	-	-	-
Femur (max.length) **	-	-	67.7(?)	-	77.5	77.0	72.0	72.6(?)	-	-	77.8	77.0
Tibia (max.length) **	-	-	-	-	69.3	70.0	67.3	68(?)	-	-	-	69.4
Fibula (max.length) **	-	-	-	-	64.2	64.7	-	-	-	-	-	65.8(?)
Ilium (max.height) ***	-	-	28.5(?)	29.8(?)	33(?)	35(?)	-	-	-	-	34.2	33.7
Ilium (breadth) ****	-	-	33(?)	33.1(?)	34.7	34.0	-	-	-	-	-	36.4

**Maximum length of shaft, without epiphyses.

* Maximum measurement from the most anterior part of the ex-occipital (a small bony projection anterior to the condyle) to the posterior part of the lateral margin.

*** Maximum measurement from the acetabular region to the iliac margin, taken at right angles to the breadth measurement.

**** Maximum measurement from the anterior superior spine to the posterior superior spine of the ilium.

* SD/B1 (2) and SD/B(2) Female 17-25 years

Fragments of incomplete skull, mandible, ribs, vertebrae, pelvis, femora; left scapula, one patella; distal ends of tibiae and fibula; some feet bones. The dental formula is probably:-

Right	Left	
— 7 ————————	——— 5 6 7 8 (MC)	M_1 = 2
8 (labC) 7 ~~6~~ ~~5~~ ~~4~~ 3 ~~2~~ 1	— 3 ~~4~~ 5 6 7 ~~8~~	M_2 = 2
		M_3 = 1

One lower molar is present which is probably from another individual

* AS/AW (6) Adult male 17-20 years

Fragments of incomplete skull, mandible, atlas, axis, humerus, pelvis, femora, and teeth. The epiphysis at the head of the femur is almost fused, but is still visible. The dental formula is:-

Right	Left	
8 _ 6 ————————	———————— 6 (DC) 7 8	M_1 = 4
8 (OC) 7 6 (lab C) 5 ————————	————————5 6 7 8	M_2 = 2+
		M_3 = 2

There is slight alveolar recession, associated with medium calculus deposits.

* AL/DV (30) Adult 35-45 years

In grave with AL/EA (30). Fragments of incomplete skull, including right petrous bone, and nine loose teeth. Due to the heavy wear, it was difficult to assign all of the teeth to their correct side. However, the dental formula is probably:-

Right	Left	
————————————————	— 3 4 - 6 7 -	M_1 = 5+
8 7 ————————3 ———	—3 -4 ————————	M_2 = 4+
		M_3 + 4

Most teeth display slight hypoplasia of the enamel.

AL/DW (30) AL/DY (30), and AL/DX(30)

Fragments of long bone shafts and proximal end of left ulna. From same grave as AL/DV (30).

SD/BW(6)

Few skull fragments with open lambdoid and sagittal sutures.

SAXON SKELETONS

SH/CT AND SH/CW (26)

A few skull and rib fragments. Not necessarily human. If human, probably juvenile.

AV/BG (13)

A few fragments of unworn molar teeth (crowns only). Possibly unerupted.

SH/CZ(30) Juvenile

Five loose teeth (crowns only). Dental formula:-

	5 6 7
	4 7 (? side)

The teeth are unworn, and may have been unerupted.

* SH/CR (25) Adolescent, probably 10-16 years

The crowns of nine teeth. Dental formula:-

7 6 — 4 3 — 1	1 2 ——— 6 7

M_1 = 2
M_2 = 1

The anterior teeth display slight wear. M_2 may have been unerupted.

* SH/CQ (25) Adolescent, probably 12-17 years

In the same grave as SH/CR(25) and SH/CP (25). A few fragments of long bone shaft, and teeth. Dental formula:-

7 6(MC) 5 4 3 ———	— 2 3 4 5 6 7
7 6 5 4 3 2 —	———

M_1 = 2+
M_2 = 1

M_2 probably had not erupted long before death. There is slight hypoplasia of most teeth, particularly 6 7

*SY/AY (16) Adolescent, probably 12-19 years

Skull fragments (including petrous bones) and teeth (crowns only). The dental formula is probably:-

	4 5 6 7-

M = 2
M_2 = 1

The molars have only three cusps; one cusp is congenitally absent.

* SY/BG (23) Probably 16-25 years old

Unidentifiable tooth fragments, one lower first or second molar (wear = 2+), and a second or third molar (wear = 2).

* SH/CP (25) Adult possibly male probably 17-25 years

In grave with SH/CR (25) and SH/CQ (25). Fragments of skull, femora, and teeth. Dental formula:-

				5	4	3	2	1	1	2	3	4	5		
		6	5	4	3										
		?													

M_1 = 2+

There is slight hypoplasia of the enamel of $\overline{6}|$. The sex was assessed by the large development of the frontal sinus and supra-orbital region.

* SH/CW(27) Adult, probably 17-25 years

Skull fragments, including left petrous and temporal bones, teeth (crowns only). Dental formula:-

												DC			
-	7	6	5	4	-	2	1	1	2	3	4	5	6	-	8
-	7	6	5	4	3	2	1	1	2	3	-	5	-	7	8

M_1 = 3
M_2 = 2
M_3 = 2

Most teeth display slight hypoplasia of the enamel.

* SZ/BR (3) Adult, probably 17-25 years

Tooth fragments, including lower first and second molars, (both sides), and a lower premolar. Wear M_1 = 3, M_2 = 2+

AM/CH(1) Adult probably 17-25 years ? Saxon

Few fragments of skull, femur, tibia, humerus, scapula, five teeth. Dental formula:-

					5										
-	7										4	5			8
	MC											DC			

M_2 = 2+
M_3 = 2

There is very slight hypoplasia of the enamel.

*SH/CH (22) Adult probably 20-30 years

A few skull and teeth fragments. Dental formula:-

												6			
8													6	7	8

M_1 = 3+
M_2 = 3
M_3 = 2+

SH/BP (11) Adult

A few skull fragments (including petrous bones). The coronal and sagittal sutures were almost obliterated in the region of the bregma.

SY/AX (20), SH/CL (23), SZ/BS (3)

All consist of a few skull fragments only. SY/AX (20) fragments probably from an adult.

SH/CN (26)

A few skull fragments (including petrous bones),

SY/AZ (17) SY/BB (11) SY/BA (14) SZ/BU (7)

All consist of unidentifiable fragments (mainly long bone shafts). Not necessarily human.

ARCHAEOLOGICAL PERIOD UNCERTAIN

SB/LJ Adult possibly 17-25 years

Lower first molar and a vertebra fragment. Wear M_1 = 3

SB/LV BIV

A mid-shaft tibia fragment and a few unidentifiable long bone fragments.

SB/LX BIV Adult female probably more than 30 years old ? Iron Age

Fragments from the lower half of the body (pelvis, lumbar and thoracic vertebrae, femora, left tibia and fibula fragments, one tarsus) of an adult female. Three lumbar vertebrae display a medium degree of osteo-arthritic lipping.

DISCUSSION

The small number of individuals from each archaeological period invalidates statistical analysis of the results. However, several general observations may be made. These are discussed below.

Preservation

It is interesting to note that the preservation of the bones from the earlier archaeological periods was better than that of the later. Some of the Iron Age skeletons were fairly complete; in contrast, only the teeth were preserved from most of the Saxon burials. This is probably due to variations in the burial environment, and seems unlikely to be due to any intrinsic quality of the bones themselves.

Sex

There does not appear to be any particular sexual bias in the results. In the Iron Age, there were 3 males (2 questionable), and 3 females; Romano-British, 1 male, 2 females (1 questionable); Saxon, 1 male (questionable).

Age

The Iron Age skeletons show a fairly wide age distribution; one child, two adolescents, two young adults, two aged 25-35, one over 35.

It is interesting to note that all 6 infant burials were probably Romano-British in date. This does not seem likely to be due to variations in infant mortality; probably there is a cultural explanation (eg differing burial practices). The other Romano-British skeletons are fairly young - three adolescents, one young adult, one over 35 years.

The Saxon skeletons seem to be biased towards the younger age groups- four under 20, five aged 17-25, one individual 25-35 years old.

Dental Health

The frequency of caries and ante-mortem tooth loss was as follows:-

	No of teeth examined	No of teeth + caries	Approx % affected	No of sockets examined	No of teeth lost a.m.	Approx % a.m tooth loss
Iron Age	97	7	7%	109	8 (all from one individual)	7%
RB	49	5	10%	40	0	0%
Saxon	92	4	4%	NONE	NONE	NONE

The frequency of caries is in keeping with general trends usually observed for these periods. The frequencies of ante-mortem tooth loss are not very useful, due to the poor preservation of tooth sockets, particularly in the later periods.

It is interesting to note that the frequency of caries is fairly high in all three periods, despite the young age of many of the individuals.

The degree of alveolar recession and calculus deposits (shown in brackets) were assessed as shown below:-

	None	Slight	Medium	Severe
Iron Age	3(4)	2(3)	2(0)	0(0)
RB	2(4)	1(0)	0(1)	0(0)

In the Iron Age, enamel hypoplasia was assessed as slight in four cases and medium in one (canines only); In the Romano-British period, hypoplasia was slight in two cases (canines); Saxons, hypoplasia was slight in three cases, (in two of these it was most marked on the first molars).

Only one dental abcess was observed, in an Iron Age mandible. The lack of evidence is probably due partly to the poor preservation, and partly the young age of many of the skeletons.

Pathology and Injuries

Very little evidence was obtained, mainly due to the poor preservation. One possible healed fracture of the femur of an Iron Age child was observed. A medium degree of orbital osteoporosis was observed in one Iron Age individual, and very slight orbital osteoporosis in two Romano-British infants. Only one definite example of arthritic lipping was observed, in the lumbar vertebrae of an Iron Age (?) skeleton. Two Iron Age individuals displayed platymeria of the femora, and one tibia was platycnemic.

Non-metrical variants

The only information obtained regarding discontinuous traits was from the Iron Age skeletons:-

> No wormian bones, inca bones, parietal notch bones, metopism, torus auditivus, torus palatinus, or maxillary torus were observed. Two out of the three mandibles showed slight mandibular tori. The parietal foramena were preserved in three skulls. In all of these, the foramen was present on one side only (two left, one right).

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