1887

RUDSTON VILLA - HUMAN BONE REPORT

Justine Bayley
Ancient Monuments Lab.

The skeletons of five adults, one juvenile and nineteen infants, and also several miscellaneous bone groups were examined. The bones were in general in good condition, but some were rather fragmentary.

The age of the adults was estimated from dental wear, epiphyseal fusion and, for males, the appearance of the pubic symphysis. For the juvenile age was estimated by the state of tooth eruption.(1) For the infants a number of factors were considered (see below). Stature was calculated from the formulae of Trotter and Gleser.(4)

The adult burials

MT.FX

These were the well preserved remains of an individual aged 17-25 and probably female, although the skull had several male characteristics.

The skull was metopic and had four Wormian bones in the lambdoid suture and one at lambda. All the teeth had been present although one ($\underline{|8}$) had been lost ante mortem. There were no caries but slight traces of calculus and periodontal disease. Most of the teeth showed slight hypoplasia.

The neural arch on the first segment of the sacrum was incomplete. Maximum stature was 157 cm (5'2").

BL.EK

These were the remains, probably of a male aged 25-30. The right femur head showed distinct distortion, probably due to an arthritic condition. Maximum stature was 166 cm. (5'5½")

The lower jaw showed slight tori mandibulares. The teeth were again in quite good condition with only slight traces of calculus present. Most of them however showed slight signs of hypoplasia. The dental formula was:-

8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
OC														OC	

Key:-

X	=	lost ante mortem	OC	=	occlusal caries
/	=	lost post mortem	La C	=	labial caries
—	=	area missing	A	=	abscess
-	=	tooth but no socket	NP	=	congenitally absent

BA.PL

These were the fragmentary remains of an individual aged 17-20 and possibly female.

The dental formula was:-

NP	LaC														NP
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
NP	OC	LaC												OC	NP
	LaC														

All the third molars were congenitally absent. There were slight traces of hypoplasia on most of the teeth.

RU.ED

The bones were those of a male aged 30-35 and were in good condition. Maximum stature was 166 cm. (5'5½").

The skull had two lambdoid Wormian bones. The dental formula was:-

8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
NP	A	A											A	OC	

Calculus deposits were severe on $\overline{7\,6\,5\,4}|$, probably because of a lack of, or severe infection in the occluding teeth. There were only slight deposits on the rest of the teeth. There was also medium periodontal disease and slight traces of hypoplasia. The two canines had double roots.

There were slight to medium traces of osteo-arthritis, especially at the hip and in the vertebrae.

RU.EK

These bones, which were well preserved, were those of a man in his thirties. Maximum stature was 168 cm (5'6½"). There were slight traces of osteo-arthritis, mostly in the spine.

The fourth cervical vertebra had a double foramen transversarium on the right side and the fifth had double foramina on both sides. The first sacral vertebra was slightly lumbarized.

The skull showed multiple Wormian bones; nine in the lambdoid suture, one at lambda and two in the saggital suture near lambda.

The dental formula is:-

8	7	6	5	X	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8

There are gross calculus deposits on the lingual sides of $\overline{8}|$ and $|\overline{8}$ which has caused a localized periodontal infection around $\overline{8\,7}|$ and $|\overline{7\,8}$. The upper right canine shows some rotation due to the loss of the adjoining premolar.

RA.OY and RA.OJ

These two bone groups were part of the same individual, the skull (RA.OY) having been separated from the long bones (RA.OJ). The remains were those of a juvenile aged 7 - 1 years. The lower lateral premolars $\overline{5}|$ and $|\overline{5}$ were congenitally absent.

Table 1 - Adult skull measurements

	RT.FX	RL.SK	RU.SK
L	183	188	189
B	134	139	133
B'	99	97	92
H'	131	135	151
LB	105	101	113
S_1	131 *	128	133
S_2	134 *	134	134 *
S_3	109 *	116	121 *
S'_1	112.6 *	113.8	117
S'_2	117.7 *	120.7	119 *
S'_3	89.8 *	97.3	104 *
Biast B	106.8	116	112.4
G'H	70.4		
GL	106.9		
G_2	44.8	38.1	
G'_1	52.4	39.1	49.3
O'_1	41.2		
O_2	29.1		
FL	34.7	39.4	36.7
NB	25.0		
NH'	55.7 *		
M_1	118.2		
ZZ	45.7	45.3	45.6
RB'	34.9	33.8	33.4
H_1	38		35.9
M_2H	26	27.8	
CrH	68	70.2	69.8

* Approx. only as skull points ill-defined e.g. by presence of accessory ossicle .

The measurements are defined in Brothwell (1972) or below
M_2H - Height at second molar

The infant burials

Nineteen infant burials were examined. Most of them were fairly complete. The measurements are recorded in Table 2. For the long bones the figure is a maximum length without epiphyses. The ilium was measured from the posterior superior iliac spine to the anterior superior iliac spine (IL.↔) and from the iliac crest to the acetabulum (IL. ↕). These figures are plotted out in diagram 1 and show a considerable spread of sizes.

The ages of the infants were estimated from the state of development of the teeth(3) and from the appearance of the temporal and sphenoid bones. The presphenoidal and postsphenoidal parts of the body of the sphenoid fuse about the eighth month of interuterine life. The tympanic ring fuses to the squamous part of the temporal bone shortly before birth and to the petromastoid part of the bone during the first year.(2)

The state of dentition would seem the most accurate indicator and the unification of the skull bones is added confirmation or, in the cases when the teeth are missing, the only real estimate of age.

In this series size can be seen as complementary to age. The one very premature infant (No. 15) is far smaller than any other and the other two described as 0 - [Nos. 3 and 16] are the next smallest. At the other end of the scale the infant aged at 3 - 6 months [No. 17] is the largest and the two aged 0 - 3 months [Nos. 8 and 10] the next largest. The other infants aged at 0 + [Nos. 18, 19, 14 and 6] are not so consistently large but all tend to fall in the upper part of each diagram.

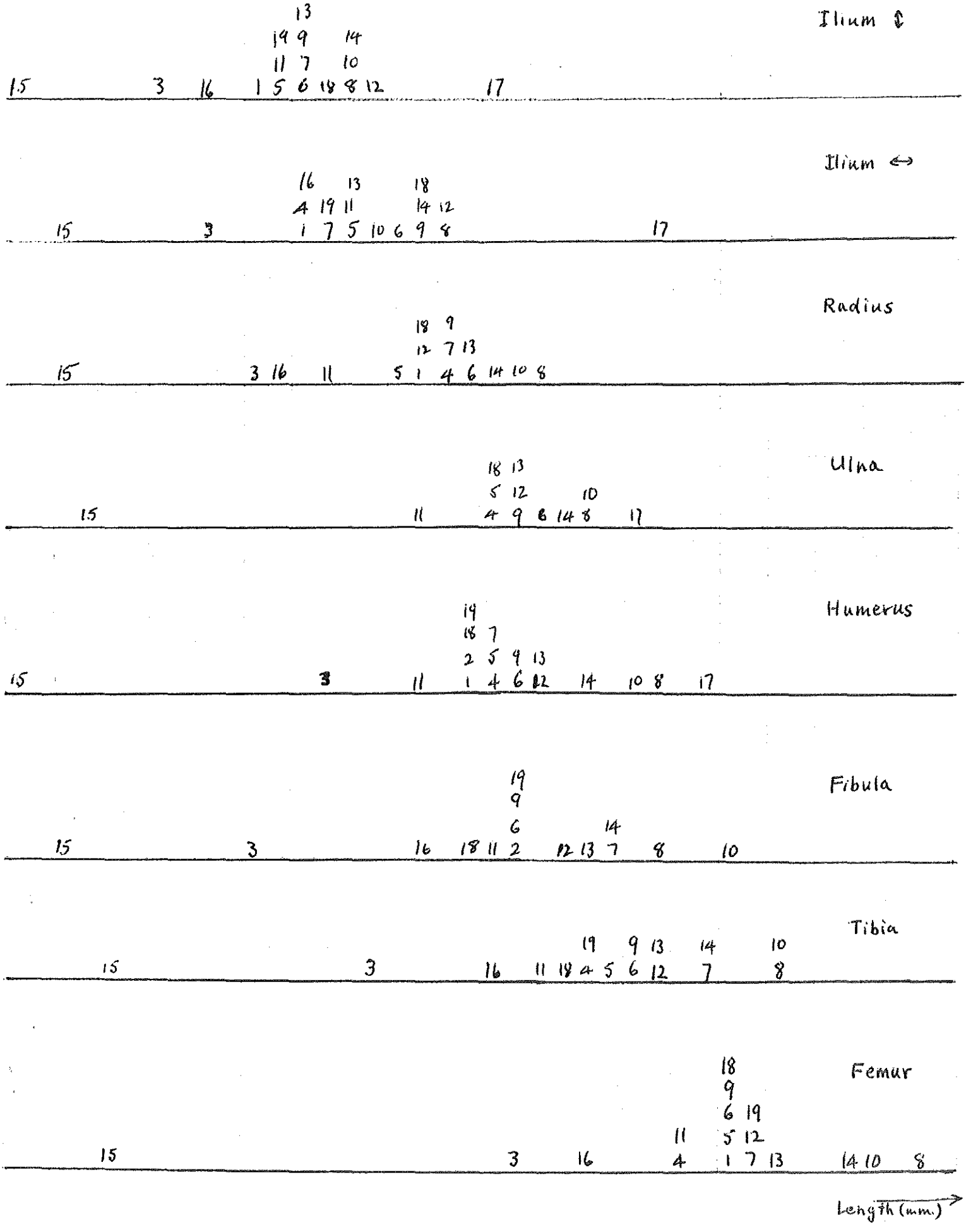
No age estimate was possible for Nos. 1, 2 and 9 as no teeth or indicative skull fragments were present. In No. 7 there were no teeth present and the sphenoid and temporal bones were in disagreement, the petromastoids having fused to the tympanic rings although the two parts of the body of the sphenoid were only partly joined. This was noted again in No. 13, although an age of around birth (0^{+}_{-}) had been estimated from the teeth. This would seem to suggest that the age at which these skull fusions occur are far less precise than is usually stated.

Table 2 - Infant bone measurements

Burial	Age (months)		Femur	Tibia	Fibula	IL.↔	IL.↕	Clavicle	Humerus	Radius	Ulna	Tympanic Rings	Sphenoid	Teeth
1 (RT.FR)		R	75.7			32.3	30.5			52.8				NO
		L							64.9					
2 (RD.AJ)		R			61.2									NO
		L							64.3					
3 (RL.CX)	Prob.0-	R	66.2	55.4	52.0	28.0	26.5		59.0	45.8		Both U	U	YES
		L	66.5	55.6	52.4	28.4	26.4		58.6					
4 (RA.DE)	Prob. 0-	R	73.4	63.8		32.8			65.9	53.9	60.3			YES
		L	73.4	64.7					66.0					
5 (RA.FD)	0±	R	75.3			34.5	31.2	42.6	64.9			F		YES
		L	75.1	65.4					65.1	51.5	60.4			
6 (RA.FU)	0+	R	75.7	66.0	61.5	36.5	32.6	44.1	66.4	54.8	63.0	Both	F	YES
		L	75.6	66.1	62.4	36.5	32.3		66.1	54.6	62.7	F		
7 (RA.KQ)		R	76.2		65.9	33.7	33.0		65.1	53.6		Both F	Partly F	NO
		L		69.5		33.6	32.8		65.8					
8 (RA.KS)	0-3	R	83.4	72.9	67.5	38.1	34.6	44.2	72.5	56.8	64.5	Partly F	F	YES
		L	83.0	72.8	68.0	38.5	35.1	45.6	72.5	57.3	64.3			
9 (RA.LC)	-	R	75.1	66.8	62.0	37.5	32.9	45.4						NO
		L	75.2	67.0	61.4	36.8	32.7		66.4	53.9	61.5			
10 (RU.DE)	0-3	R	81.1	72.6	70.2	35.3	34.0	45.6		56.0	64.2	F	F	YES
		L		71.9	69.9			46.4	71.1	56.4	65.3	Partly F		
11 (RU.EH)	0±	R	72.9	62.2	60.5	34.1	31.6		62.2		57.2	U	F	YES
		L	73.1	62.2					62.8	48.7	57.4	Partly F		
12 (RU.EJ)	0±	R	76.2	68.0	63.6	38.5	35.1		67.6	52.9	61.4	U	F	YES
		L	76.3	67.9		39.0	35.3	45.5	68.0	52.9	61.4	Partly F		
13 (RU.DN)	0±	R	77.7	67.6	64.7	34.5	33.0	45.6	68.1	54.5	62.1	F	Partly F	YES
		L	77.2	67.8	64.6	35.3	32.7	46.0	67.5	54.3	61.8			
14 (RU.-) (RT.FA)	Prob. 0+	R		69.7	65.5			45.7	69.8	55.3		F		YES
		L	80.3	69.5	66.0	37.7	34.2			55.8	63.4			
15 (RU.DO)	Very premature	R	49.2	44.5	42.7	22.6	21.0		45.7	37.0	43.2	U	U	NO
		L	49.6	44.6		22.8	20.8		44.9		42.9			
16 (RU.EN)	0-	R	70.2	60.9	57.2	32.0	28.1			46.5		U	Partly F	YES
		L	69.7	60.0		32.2	28.5							
17 (RS.CY)	3-6	R				45.1	40.5		74.7		66.0	Both F		YES
		L				49.6	41.2							
18 (RS.BY)	0+	R	75.0	64.0	59.7	36.8	33.5		64.9	52.4	61.0	Both F		YES
		L	75.4	63.4	59.8	37.3	33.6		65.0	53.0	60.5			
19 (RS.BZ)	Prob. 0+	R	76.0	64.9	61.6	33.4	30.9		64.9			Partly F	F	YES
		L	76.1	64.8		33.8	31.6		65.0			F		

Key:- 0- = premature
0± = around birth
0+ = a few weeks old
U = Unfused
F = Fused

Diagram 1 - Infant long bone size distribution



Miscellaneous bone groups

On examination only one was found to be human.

RH.BM

These skull fragments were those of an adult. They were severely eroded.

References

(1) BROTHWELL, D. R. (1972) Digging up Bones

(2) DAVIES, D. V. (1967) Gray's Anatomy

(3) McCALL, J. O. and WALD, S. S. (1963) Clinical Dental Roentgenology, 149.

(4) TROTTER, M. and GLESER, G. C. (1958) Amer. J. phys. Anthrop. 15 (79-123)