



---

## Northamptonshire Archaeology

The Whitehall Farm Burials

(Graves 3 to 8),

Nether Heyford,

Northamptonshire



Harriet Anne Jacklin

January 2005

Report 05/005

---

**Northamptonshire Archaeology**

2 Bolton House  
Wootton Hall Park  
Northampton NN4 8BE

w. [www.northantsarchaeology.co.uk](http://www.northantsarchaeology.co.uk)

t. 01604 700493/4

f. 01604 702822

e. [sparry@northamptonshire.gov.uk](mailto:sparry@northamptonshire.gov.uk)



## STAFF

Project Manager      Stephen Young BA  
Text                      Harriet Anne Jacklin BA, MA  
Human Bone            Harriet Anne Jacklin BA, MA

## QUALITY CONTROL

	Print name	Signed	Date
Checked by	Pat Chapman		
Verified by	Andy Mudd		
Approved by	Andy Chapman		

## **CONTENTS**

### **1 INTRODUCTION**

### **2 METHODOLOGY**

- 2.1 Age**
- 2.2 Sex**
- 2.3 Stature**
- 2.4 Robusticity**
- 2.5 Platymeria and Platycnemia Index**
- 2.6 Cranial Morphology and Facial / Cranial Index**
- 2.7 Post Cranial Morphology and Post Cranial Metrics**
- 2.8 Pathology and Dental Health**

### **3 RESULTS**

- 3.1 Summary Table**
- 3.2 Grave 3**
- 3.3 Grave 4**
- 3.4 Grave 5**
- 3.5 Grave 6**
- 3.6 Grave 7**
- 3.7 Grave 8**

### **4 DISCUSSION**

### **5 APPENDIX**

- 5.1 Human Bone Catalogue**
- 5.2 Post Cranial Morphology**
- 5.3 Post Cranial Metrics**
- 5.4 Cranial Morphology**
- 5.5 Cranial Metrics**
- 5.6 Human Anthropometrics – Descriptions of metric short hand**

### **BIBLIOGRAPHY**

## **1 INTRODUCTION**

The human remains submitted for analysis comprised material recovered from six graves (3-8). However, four of these six bone groups contained small quantities of human bone from one or more individuals. These remains have been analyzed and included in the report. See Appendix 5.1.

Lacking any information on the relative location of these burials and whether there was any intercutting graves, it has not been possible to attempt to locate these stray bones to the other excavated individuals, although this might be possible, or to provide an alternative explanation of their presence. The present report is therefore limited to the osteological analysis of the bones present.

In addition, numerous individual bags of human bone recovered during field walking were also submitted for analysis. The bag labels are already marked with basic bone identifications and no further analysis has been attempted given the fragmentary nature of the material and the lack of any spatial information that might provide possible groupings or relationships. However, it has been noted that the field walking collection does contain some obvious bone groups, such as clusters of rib bones or vertebrae and some quite substantial portions of individual long bones. This is a clear indication that much of the material, while plough disturbed, was still semi-articulated or at least clustered and therefore had not been displaced to any great extent from its original location. Accurate plotting of this material could therefore be used to study the broader distribution of burials and the extent and the organization of the cemetery. From such an analysis it might also be possible to provide some estimate of the minimum number of burials present and the relationship of these to the excavated graves.

## **2 METHODOLOGY**

The osteological analysis of the human remains from Whitehall Farm, Nether Heyford (ASC Graves 3–8 2004) follows standard accepted methodologies employed in studies of this nature, as described by Bass (1987) and Brothwell (1981). A metrical record of all of the bones present can be found in Appendix 5.1 and a description of the metric shorthand/biometric symbols used during analysis can be found in Appendix 5.6. Where

possible, broken bones were fitted back together for the purpose of measuring, though this only occurred in instances where the joins were very close and inaccuracy was deemed to be negligible. These measurements were used in the diagnosis of age, sex, stature, build and skeletal form.

## **2.1 Age**

The criteria on which each individual was aged depended largely on the nature of the bones available. Where possible a range of criteria were employed, the results obtained being combined to produce an average (most likely) age for the individual. Skeletal methods based on bone maturation, in terms of linear growth (Maresh 1955, Ubelaker 1981 and White 1991). Analysis of the pelvis; the pubic symphysis, and the articular surface (Lovejoy et al 1985 and White 1991) and stages of ossification (Krogman 1964, Brothwell 1981 and White 1991) were employed alongside dental methods, which assessed stages of tooth development (White 1991) and subsequent wear (Bass 1987).

## **2.2 Sex**

Sex determination was similarly based upon various criteria, an average being accepted wherever possible. The most reliable criteria, based upon cranial and pelvic morphology and long-bone head dimensions, afforded greatest weight. Classifications of sexes were based upon levels of diagnostic certainty. Individuals for whom no sexing technique could be used have had to be regarded as indeterminate sex; as is the case for the juveniles found, for whom sex determination is not recommended. Cox and Mays (2000;12) explain that although skeletal morphological changes differ from an early age, they do not reach a high enough level for a reliable determination of sex until after the pubertal modifications have taken place.

## **2.3 Stature**

Estimations of living stature were calculated whenever the relevant bones were available for measuring. In the presence of a complete femur and fibula no other metrics were sought (since these are believed to yield the most accurate estimation of stature). However, whenever a femur and fibula were not available or were broken/incomplete, alternative long-bone measurements were sought, ideally using estimations of stature obtained from the

measurements of several long-bones. Calculations were processed using the standard regression equations described by Trotter and Gleser (1952 & 1958).

#### 2.4 Robusticity

The Robusticity index expresses the relative size of the shaft of the femur. Measurements of the left and right femurs can provide information on which leg was used more prominently. The Robusticity index can also indicate trauma in the legs if one leg is much thinner than the other. Unfortunately a Robusticity index could only be produced for Grave 7 using the following formula in Bass (1987).

$$\text{Robusticity Index} = \frac{\text{Anterior-posterior} + \text{Mediolateral diameter of midshaft} \times 100}{\text{Bicondylar (physiological) length}}$$

#### 2.5 Platymeria and Platycnemia Index

The Platymeria and Platycnemia index for each individual was calculated where possible using the following formula in Brothwell (1981). The Platymeria and Platycnemia index relate to the degree of flattening of the femur and the tibia and is believed to be related to the effect of the muscles on the bone during movement, for example, during different occupations involving particular uses of the legs. The index can also help indicate whether the individual suffered from nutritional deficiencies.

$$\text{Platymeria Index} = \frac{\text{FeD1} \times 100}{\text{FeD2}}$$

$$\text{Platymeria Index} = \frac{\text{TiD2} \times 100}{\text{TiD1}}$$

#### 2.6 Cranial Morphology and Facial/Cranial Index

The cranial and facial index is used to investigate genetic relationships. It is suggested by Mays (1998) that differences in the facial and cranial index can be influenced by gender, deformation, disease, diet and climate. Unfortunately, due to the fragmentary nature of the surviving cranial bone of the individuals featured in this report, the cranial index could only be calculated for Grave 7 using the following formula in Brothwell (1981).

$$\text{Cranial Index} = \frac{\text{Maximum skull breadth} \times 100}{\text{Maximum skull length}}$$

Dolichocephalic ( $x - 74.99$ ) = narrow headed

Mesocephalic ( $75 - 79.99$ ) = medium headed

Brachcephalic ( $80 - 84.99$ ) = broad headed

Hyperbrachcephalic ( $85 - x$ ) = very broad headed

The facial index could not be established for any of the individuals due to the fragmentary nature of the evidence.

The surviving cranial material for Grave 3, 4, 5, 6 and 8 was so fragmented that the researcher was also unable to distinguish any non metric cranial traits, and has only been able to look at their presence / absence on Grave 7.

See Appendix 5.4 – 5.5 for details of the cranial morphology and cranial metrics for Grave 7.

## 2.7 Post Cranial Morphology and Post Cranial Metrics

Post cranial non-metric traits have also been recorded for each individual where possible. The analysis of non-metric traits can provide evidence of genetic variability and can indicate genetic relations between individuals.

See Appendix 5.2 – 5.3

## 2.8 Pathology and Dental Health

The majority of human disease and trauma affect only the soft tissues of the victim (rarely causing death) and consequently are very rarely preserved in archaeological specimens, although there are certain conditions that leave an indelible mark on the human skeleton.

The diagnosis of any trauma, pathological conditions and dental health, follows accepted works by Ortner & Putschar (1981) White (1991), Aufderheide & Rodriguez-Martin (1998) and Roberts & Manchester (1995).

### 3 RESULTS

#### 3.1 Summary table

<i>Grave</i>	<i>Age (years)</i>	<i>Sex</i>	<i>Stature</i>
<b>3</b>	6 to 8	Not applicable	Not applicable
<b>4</b>	25 to 35	Possible female	Not applicable
<b>5</b>	45+	Male	174m
<b>5 additional bones</b>	30 - 35	Possible female	Not applicable
	Juvenile	Not applicable	Not applicable
<b>6</b>	7 to 10	Not applicable	Not applicable
<b>6 additional bones</b>	3 to 5	Not applicable	Not applicable
	3 to 5	Not applicable	Not applicable
<b>7</b>	25 to 35+	Male	166.5m
<b>8</b>	6 to 10	Not applicable	Not applicable

#### 3.2 Grave 3

**Age** - 6 to 8 years

**Sex** - Not applicable

**Stature** - Not applicable

**Robusticity** – Not applicable

**Platymeria and Platycnemia Index** – Not applicable

**Cranial Index** – Not applicable

**Pathology** - No visible signs of pathology

**Dental Health** - Good

Unfortunately only a small fragment of the upper left maxilla has survived. The surviving teeth show no signs of caries, calculus or hypoplasia lines on the teeth ( hypoplasia lines are a result of disturbances in the enamels development which is caused by illness and poor health – close investigation of these lines can indicate at which age the onset occurred).

**Additional Bones** – See Appendix 5.1

#### 3.3 Grave 4

**Age** – 25 - 35 years

**Sex** – Possible female

**Stature** - Not applicable

**Robusticity** – Not applicable

**Platymeria Index** – Not applicable



**Platycnemia Index** - Mesocemia (Left tibia)

**Cranial Index** – Not applicable

**Pathology** – Schmorl's Nodes

The individual suffered from two separate cases of Schmorl's nodes affecting the lumbar and thoracic vertebrae. A Schmorl's node is a crater like depression occurring either on the anterior or posterior surface, mostly toward the dorsal side, of vertebral bodies. These are caused by herniation or prolapse of inter-vertebral disk tissue, forming ectopic deposits of nucleus pulposus material in the neighbouring vertebral bodies. It has been suggested that trauma and or strenuous activity, especially in adolescence, and metabolic and degenerative disorders may contribute to the formation of Schmorl's nodes.

**Dental health** - Fair

The individual had a relatively good state of dental health with no cavities and only mild calculus. Unfortunately the maxilla and the mandible were so fragmented that the researcher has been unable to tell whether the individual suffered from abscesses or periodontal disease. Periodontitis is an infection of the alveolar bone and the soft tissues of the mouth and is related to poor dental hygiene. The condition is recognized by the recession of the alveolar bone from around the base of the teeth, which, in the most extreme cases, can lead to the loosening and eventual loss of teeth.

**Additional Bones** – See Appendix 5.1

### 3.4 Grave 5

**Age** – 45+ years

**Sex** – Male

**Stature** – 174m approx

**Robusticity** – Not applicable

**Platymeria Index** – Platymeria

**Platycnemia Index** - Mesocemia

**Cranial Index** – Not applicable

**Pathology** – Schmorl's Nodes / Osteophytes

The individual suffered from a Schmorl's node affecting the fifth lumbar vertebrae and Grade 1 Intermittent osteophytes affecting the second cervical and the third lumbar vertebrae (Classification in Brothwell 1981:51). Osteophytes are commonly seen as an age related pathology and are indicative of early onset of a variety of joint diseases, most commonly spinal osteoarthritis.

**Dental Health** - Fair

The teeth of the individual in Grave 5 are very worn due to increasing age and a coarse diet. The surviving teeth bear no signs of caries and only mild calculus is visible.

**Additional Bones** – Relating to two further individuals. See Appendix 5.1

### 3.5 Grave 6

**Age** – 7 to 10 years (approx)

**Sex** – Not applicable

**Stature** – Not applicable

**Robusticity** – Not applicable

**Platymeria and Platycnemia Index** - Not applicable

**Cranial Index** – Not applicable

**Pathology** – Not applicable

**Dental health** – Not applicable

**Additional Bone** – Relating to two further individuals. See Appendix 5.1

### 3.6 Grave 7

**Age** – 25 to 35+ years

**Sex** – Male

**Stature** – 166.54m approx

**Robusticity** – No strong preference for either leg

**Platymeria Index** – Platymeria

**Platycnemia Index** - Mesocemia+

**Cranial Index** – Dolchocrany ( narrow headed)

**Pathology** - Schmorl's Node

The individual's second lumbar vertebra is affected by a Schmorl's node.

**Dental health** – Good

The individual exhibits a good state of dental health with no signs of caries, abscesses or periodontal disease and only mild calculus.

### 3.7 Grave 8

**Age** – 6 to 10 years

**Sex** – Not applicable

**Stature** – Not applicable

**Robusticity** – Not applicable

**Platymeria and Platycnemia Index** - Not applicable

**Cranial Index** – Not applicable

**Pathology** – Not applicable

**Dental Health** – Not applicable

#### **4 DISCUSSION**

The group of individuals analyzed comprises both males and females ranging in age from infants aged between 3 and 5 years up to adults aged 45+ years.

Due to the fragmentary nature of the surviving bone no pathological clues have been found to indicate their causes of death. The surviving remains show evidence of heavy lifting / strenuous activity using the back (indicative by Schmorl's nodes) and age related pathology (osteophytes). The dental health of the surviving material is relatively fair with no signs of caries on the surviving dentition and only mild calculus and age related attrition which is indicative of a coarse diet which little sugar.

## 5 APPENDIX

### 5.1 Human Bone Catalogue

<b>Grave 3</b>			
	<b>Left</b>	<b>Right</b>	<b>Unsided</b>
<i>Sternum</i>	-	-	-
<i>Manubrium</i>	-	-	Present
<i>Clavicle</i>	-	-	-
<i>Scapula</i>	-	-	-
<i>Ribs</i>	-	-	3 fragments
<i>Humerus</i>	-	-	-
<i>Radius</i>	-	-	-
<i>Ulna</i>	-	-	-
<i>Carpals</i>	-	-	-
<i>Metacarpals</i>	-	-	-
<i>Phalanges (hand)</i>	-	-	-
<i>Pelvis</i>	-	-	-
<i>Femur</i>	-	1 fragment	-
<i>Patella</i>	-	-	-
<i>Tibia</i>	-	1 fragment	-
<i>Fibula</i>	-	-	-
<i>Tarsals</i>	-	-	-
<i>Metatarsals</i>	-	-	-
<i>Phalanges (foot)</i>	-	-	-
<i>Skull</i>	-	Fragments	-
<i>Mandible</i>	-	Fragments	-
<i>Cervical Vertebrae</i>	-	-	-
<i>Thoracic Vertebrae</i>	-	-	-
<i>Lumbar Vertebrae</i>	-	-	-
<i>Sacrum</i>	-	-	-

<b>Additional Bone - Grave 3</b>	<b>Age</b>	<b>Sex</b>	<b>Measurements taken</b>
<i>1 canine (dc1) - possibly related to Grave 3</i>	-	-	-
<i>1 molar</i>	-	-	-
<i>1 molar root</i>	-	-	-
<i>1 intermediate foot phalange</i>	-	-	-

THE WHITEHALL FARM BURIALS 2004 (GRAVES 3 TO 8),  
NETHER HEYFORD, NORTHAMPTONSHIRE

---

<b>Grave 4</b>			
	<b>Left</b>	<b>Right</b>	<b>Unsided</b>
<i>Sternum</i>	-	-	-
<i>Manubrium</i>	-	-	-
<i>Clavicle</i>	Fragmented	Fragmented	-
<i>Scapula</i>	Fragmented	Fragmented	-
<i>Ribs</i>	17 fragments	11 fragments	-
<i>Humerus</i>	No proximal end	No proximal end	-
<i>Radius</i>	-	No distal end	-
<i>Ulna</i>	No distal end	No distal end	-
<i>Carpals</i>	-	-	-
<i>Metacarpals</i>	-	-	-
<i>Phalanges (hand)</i>	-	-	-
<i>Pelvis</i>	-	Fragment	-
<i>Femur</i>	No distal end	No distal end	-
<i>Patella</i>	-	-	-
<i>Tibia</i>	Almost complete	Shaft only	-
<i>Fibula</i>	Fragments	Fragments	-
<i>Tarsals</i>	2 (fragmented)	6 (fragmented)	-
<i>Metatarsals</i>	-	4 (fragments)	-
<i>Phalanges (foot)</i>	-	-	-
<i>Skull</i>	-	-	Fragments
<i>Mandible</i>	Badly preserved	Fragments	-
<i>Cervical Vertebrae</i>	-	-	6
<i>Thoracic Vertebrae</i>	-	-	10
<i>Lumbar Vertebrae</i>	-	-	4
<i>Sacrum</i>	-	-	-

<b>Additional Bone - Grave 4</b>	<b>Age</b>	<b>Sex</b>	<b>Measurements taken</b>
<i>Left ulna - proximal end only</i>	-	-	-

THE WHITEHALL FARM BURIALS 2004 (GRAVES 3 TO 8),  
NETHER HEYFORD, NORTHAMPTONSHIRE

<b>Grave 5</b>			
	<b>Left</b>	<b>Right</b>	<b>Unsided</b>
<i>Sternum</i>	-	-	-
<i>Manubrium</i>	-	-	-
<i>Clavicle</i>	Present	-	-
<i>Scapula</i>	Fragments	Fragments	-
<i>Ribs</i>	8 fragments	8 fragments	-
<i>Humerus</i>	Fragments	Fragments	-
<i>Radius</i>	Fragments	-	-
<i>Ulna</i>	Present	-	-
<i>Carpals</i>	7	6	-
<i>Metacarpals</i>	4	4	-
<i>Phalanges (hand)</i>	8	11 (fragments)	-
<i>Pelvis</i>	Fragments	Fragments	-
<i>Femur</i>	Present	Present	-
<i>Patella</i>	-	-	-
<i>Tibia</i>	Present	Present	-
<i>Fibula</i>	Present	Present	-
<i>Tarsals</i>	7	6	-
<i>Metatarsals</i>	5	4	0
<i>Phalanges (foot)</i>	-	-	5
<i>Skull</i>	-	-	Fragments
<i>Mandible</i>	-	-	Fragments
<i>Cervical Vertebrae</i>	-	-	3 (fragmented)
<i>Thoracic Vertebrae</i>	-	-	6 (fragmented)
<i>Lumbar Vertebrae</i>	-	-	3
<i>Sacrum</i>	-	-	Fragments

<b>Additional Bone - Grave 5</b>	<b>Age</b>	<b>Sex</b>	<b>Measurements taken</b>
<i>Maxilla - Right side only</i>	Adult	-	-
<i>Pelvis - Fragments (includes pubic synthesis)</i>	30 - 35 approx	Possible female	-
<i>Sacrum - S1 and S2 only - Very small</i>	Juvenile	-	-
<i>Rib fragment</i>	Juvenile	-	-
<i>Right humerus</i>	Adult	-	See Appendix 5.3
<i>Right femur</i>	Adult	-	See Appendix 5.3
<i>Left femur</i>	Adult	-	See Appendix 5.3

THE WHITEHALL FARM BURIALS 2004 (GRAVES 3 TO 8),  
NETHER HEYFORD, NORTHAMPTONSHIRE

---

<b>Grave 6</b>			
	<b>Left</b>	<b>Right</b>	<b>Unsided</b>
<i>Sternum</i>	-	-	-
<i>Manubrium</i>	-	-	-
<i>Clavicle</i>	-	-	-
<i>Scapula</i>	-	-	-
<i>Ribs</i>	-	-	-
<i>Humerus</i>	Present	-	-
<i>Radius</i>	-	-	-
<i>Ulna</i>	-	-	-
<i>Carpals</i>	-	-	-
<i>Metacarpals</i>	-	-	-
<i>Phalanges (hand)</i>	-	-	-
<i>Pelvis</i>	-	-	-
<i>Femur</i>	Present	-	-
<i>Patella</i>	-	-	-
<i>Tibia</i>	-	-	-
<i>Fibula</i>	-	-	-
<i>Tarsals</i>	-	-	-
<i>Metatarsals</i>	-	2	-
<i>Phalanges (foot)</i>	-	-	-
<i>Skull</i>	-	-	Fragments
<i>Mandible</i>	-	-	-
<i>Cervical Vertebrae</i>	-	-	-
<i>Thoracic Vertebrae</i>	-	-	-
<i>Lumbar Vertebrae</i>	-	-	-
<i>Sacrum</i>	-	-	-

<b>Additional Bone - Grave 6</b>	<b>Age</b>	<b>Sex</b>	<b>Measurements taken</b>
<i>Left femur</i>	3 - 5 years	-	-
<i>Left tibia</i>	3 - 5 years	-	-
<i>Left tibia</i>	3 - 5 years	-	-
<i>Right femur (not related to left femur)</i>	3 - 5 years	-	-
<i>Fibula (shaft only)</i>	Infant	-	-

THE WHITEHALL FARM BURIALS 2004 (GRAVES 3 TO 8),  
NETHER HEYFORD, NORTHAMPTONSHIRE

---

<i>Grave 7</i>			
	<b>Left</b>	<b>Right</b>	<b>Unsided</b>
<i>Sternum</i>	-	-	-
<i>Manubrium</i>	-	-	-
<i>Clavicle</i>	Fragments	Fragments	-
<i>Scapula</i>	Fragments	Fragments	-
<i>Ribs</i>	8 fragments	12 fragments	-
<i>Humerus</i>	Present	Present	-
<i>Radius</i>	Present	No proximal end	-
<i>Ulna</i>	Present	Present	-
<i>Carpals</i>	-	-	-
<i>Metacarpals</i>	2	4	-
<i>Phalanges (hand)</i>	3	8	-
<i>Pelvis</i>	Fragments	Fragments	-
<i>Femur</i>	Present	Present	-
<i>Patella</i>	-	-	-
<i>Tibia</i>	Present	Present	-
<i>Fibula</i>	Present	Present	-
<i>Tarsals</i>	5	6	-
<i>Metatarsals</i>	5	5	-
<i>Phalanges (foot)</i>	1	1	-
<i>Skull</i>	-	-	Almost complete
<i>Mandible</i>	-	-	Almost complete
<i>Cervical Vertebrae</i>	-	-	Fragments
<i>Thoracic Vertebrae</i>	-	-	12
<i>Lumbar Vertebrae</i>	-	-	5
<i>Sacrum</i>	-	-	Fragments



THE WHITEHALL FARM BURIALS 2004 (GRAVES 3 TO 8),  
NETHER HEYFORD, NORTHAMPTONSHIRE

---

<b>Grave 8</b>			
	<b>Left</b>	<b>Right</b>	<b>Unsided</b>
<i>Sternum</i>	-	-	-
<i>Manubrium</i>	-	-	-
<i>Clavicle</i>	-	-	-
<i>Scapula</i>	-	-	-
<i>Ribs</i>	-	-	1 fragment
<i>Humerus</i>	-	-	-
<i>Radius</i>	-	-	-
<i>Ulna</i>	-	-	-
<i>Carpals</i>	-	-	-
<i>Metacarpals</i>	-	-	-
<i>Phalanges (hand)</i>	-	-	-
<i>Pelvis</i>	Unfused	-	-
<i>Femur</i>	Unfused	Distal end only	-
<i>Patella</i>	-	-	-
<i>Tibia</i>	Almost complete	No distal end	-
<i>Fibula</i>	Shaft only	fragments	-
<i>Tarsals</i>	-	-	-
<i>Metatarsals</i>	-	-	-
<i>Phalanges (foot)</i>	-	-	-
<i>Skull</i>	-	-	-
<i>Mandible</i>	-	-	-
<i>Cervical Vertebrae</i>	-	-	-
<i>Thoracic Vertebrae</i>	-	-	-
<i>Lumbar Vertebrae</i>	-	-	-
<i>Sacrum</i>	-	-	-

## 5.2 Post Cranial Morphology

<b>Grave 4</b>	<b>Present / Absent</b>
<b>Sternum</b>	
<i>Manubrio-corpae synostosis</i>	Not applicable
<i>Sternal aperture</i>	Not applicable
<b>Scapula</b>	
<i>Os acromiale</i>	Not applicable
<i>Suprascapular area</i>	Not applicable
<b>Vertebrae</b>	
<i>Atlas - posterior bridge</i>	Not applicable
<i>Atlas - Lateral bridge</i>	Not applicable
<i>Sacrum - Level of open hiatus</i>	S5
<i>Accessory sacral / iliac facets</i>	Not present
<i>Lumbo- sacralisation of vertebrae</i>	Not present
<b>Humerus</b>	
<i>Septal aperture</i>	Left - present/ right - absent
<i>Supracondylar process</i>	Left and right - not present
<b>Femur</b>	
<i>Third trochanter</i>	Not applicable
<i>Allen's fossa</i>	Not applicable
<i>Poirier's facet / plaque</i>	Not applicable
<b>Patella</b>	
<i>Vastus notch</i>	Not applicable
<i>Bipartite patella</i>	Not applicable
<b>Tibia</b>	
<i>Squatting facets</i>	Not applicable
<b>Talus</b>	
<i>Os trigonum</i>	Not applicable
<i>Talar facet</i>	Not applicable
<b>Calcaneus</b>	
<i>Calcaneal facet</i>	Not applicable

THE WHITEHALL FARM BURIALS 2004 (GRAVES 3 TO 8),  
NETHER HEYFORD, NORTHAMPTONSHIRE

---

<b>Grave 5</b>	<b>Present / Absent</b>
<b>Sternum</b>	
<i>Manubrio-corpae synostosis</i>	Not applicable
<i>Sternal aperture</i>	Not applicable
<b>Scapula</b>	
<i>Os acromiale</i>	Not applicable
<i>Suprascapular area</i>	Not applicable
<b>Vertebrae</b>	
<i>Atlas - posterior bridge</i>	Not applicable
<i>Atlas - Lateral bridge</i>	Not applicable
<i>Sacrum - Level of open hiatus</i>	Not applicable
<i>Accessory sacral / iliac facets</i>	Not applicable
<i>Lumbo- sacralisation of vertebrae</i>	Not applicable
<b>Humerus</b>	
<i>Septal aperture</i>	Left and right – not present
<i>Supracondylar process</i>	Left and right - not present
<b>Femur</b>	
<i>Third trochanter</i>	Not present
<i>Allen's fossa</i>	Not present
<i>Poirier's facet / plaque</i>	Not present
<b>Patella</b>	
<i>Vastus notch</i>	Not applicable
<i>Bipartite patella</i>	Not applicable
<b>Tibia</b>	
<i>Squatting facets</i>	Not present
<b>Talus</b>	
<i>Os trigonum</i>	Left and right - not present
<i>Talar facet</i>	Left and right - not present
<b>Calcaneus</b>	
<i>Calcaneal facet</i>	Left and right - not present

THE WHITEHALL FARM BURIALS 2004 (GRAVES 3 TO 8),  
NETHER HEYFORD, NORTHAMPTONSHIRE

---

<b>Grave 7</b>	<b>Present / Absent</b>
<b>Sternum</b>	
<i>Manubrio-corpae synostosis</i>	Not applicable
<i>Sternal aperture</i>	Not applicable
<b>Scapula</b>	
<i>Os acromiale</i>	Not applicable
<i>Suprascapular area</i>	Not applicable
<b>Vertebrae</b>	
<i>Atlas - posterior bridge</i>	Not applicable
<i>Atlas - Lateral bridge</i>	Not applicable
<i>Sacrum - Level of open hiatus</i>	S5
<i>Accessory sacral / iliac facets</i>	Not applicable
<i>Lumbo- sacralisation of vertebrae</i>	Not present
<b>Humerus</b>	
<i>Septal aperture</i>	Left - present/ right - absent
<i>Supracondylar process</i>	Left and right - not present
<b>Femur</b>	
<i>Third trochanter</i>	Left and right - not present
<i>Allen's fossa</i>	Left and right - not present
<i>Poirier's facet / plaque</i>	Left - not applicable/ right - present
<b>Patella</b>	
<i>Vastus notch</i>	Not applicable
<i>Bipartite patella</i>	Not applicable
<b>Tibia</b>	
<i>Squatting facets</i>	Not present
<b>Talus</b>	
<i>Os trigonum</i>	Left and right - not present
<i>Talar facet</i>	Left and right - not present
<b>Calcaneus</b>	
<i>Calcaneal facet</i>	Left and right - not present

The post cranial non metric traits above can be found illustrated in pictorial form in Brothwell (1981; 98-99).

THE WHITEHALL FARM BURIALS 2004 (GRAVES 3 TO 8),  
NETHER HEYFORD, NORTHAMPTONSHIRE

---

**5.3 Post Cranial Metrics**

<i>Grave</i>	<i>Femur</i>															
	<i>FeL<sub>1</sub></i>		<i>FeL<sub>2</sub></i>		<i>FeD<sub>1</sub></i>		<i>FeD<sub>2</sub></i>		<i>FHD<sub>1</sub></i>		<i>FeD<sub>3</sub></i>		<i>FeD<sub>4</sub></i>		<i>FeE<sub>1</sub></i>	
	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R
<b>3</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>4</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>5</b>	-	-	-	-	29.71	29.81	36.48	36.85	48.9	49.03	-	-	-	-	-	-
<b>5 additional bone</b>	44.5	44.4	43.6	42.8*	23.04	21.93	30.86	30.53	46.05	-	27.83	-	27.9	-	-	-
<b>6</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>7</b>	44.3	43.3	42.3	42.1	23.71	24.41	36.81	38.84	47.51	47.8	28.16	28.1	28.6	31.1	76.1	76.49
<b>8</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<i>Grave</i>	<i>Tibia</i>								<i>Fibula</i>	
	<i>TiL<sub>1</sub></i>		<i>TiD<sub>1</sub></i>		<i>TiD<sub>2</sub></i>		<i>T<sub>1</sub>E<sub>1</sub></i>		<i>FiL<sub>1</sub></i>	
	L	R	L	R	L	R	L	R	L	R
<b>3</b>	-	-	-	-	-	-	-	-	-	-
<b>4</b>	36.7	-	29.8	-	20.53	-	-	-	-	-
<b>5</b>	39.4	39.2	38	36	24.97	23.99	77.21	78.42	38.1	-
<b>6</b>	-	-	-	-	-	-	-	-	-	-
<b>7</b>	35.2	35.2	32.5	30.9	22.51	23.29	-	-	34.7	34.7
<b>8</b>	-	-	-	-	-	-	-	-	-	-

<i>Grave</i>	<i>Humerus</i>						<i>Radius</i>		<i>Ulna</i>	
	<i>HuL<sub>1</sub></i>		<i>HHD</i>		<i>HuE<sub>1</sub></i>		<i>RaL<sub>1</sub></i>		<i>ULL<sub>1</sub></i>	
	L	R	L	R	L	R	L	R	L	R
<b>3</b>	-	-	-	-	-	-	-	-	-	-
<b>4</b>	-	-	-	-	-	-	-	-	-	-
<b>5</b>	-	-	-	-	61.17	63.74	-	-	28.3	28.5*
<b>5 (additional bone)</b>	-	31.4	-	44.7	-	57.4	-	-	-	-
<b>6</b>	-	-	-	-	-	-	-	-	-	-
<b>7</b>	32.7	33.3	-	49.1	65.63	-	24.6	-	-	27.5
<b>8</b>	-	-	-	-	-	-	-	-	-	-

Please see Appendix 5 6 for explanation of metric shorthand used above.

#### 5.4 Cranial Morphology

<i>Grave 7</i>	<b>Present / Absent</b>
<i>Wormian bones:</i>	
<i>Coronal</i>	R - present / L - absent
<i>Sagittal</i>	A - present / P - absent
<i>Lambdoid</i>	R - present / P - absent
<i>Inca B</i>	Absent
<i>Metopism</i>	Absent
<i>Parietal notch B</i>	R - absent / L - absent
<i>Torus Mandib</i>	R - absent / L - absent
<i>Palativus</i>	Absent
<i>Maxillaris</i>	R - absent / L - absent
<i>Parietal foram</i>	R - absent / L - absent
<i>Sup. Orb. Fora</i>	R - present / L - present
<i>Bregmatic bone</i>	Absent
<i>Lambda bone</i>	Absent
<i>Occipito-temporal suture wormian bones</i>	R - absent / L - absent
<i>Asterionic bone</i>	R - absent / L - present
<i>Os japonicum</i>	Not applicable

The cranial non metric traits above can be found illustrated in pictorial form in Brothwell (1981; 91-99).

#### 5.5 Cranial Metrics

<i>Grave 7</i>	<b>Measurements (mm)</b>
Glab.occip.L (L)	19.4
Max.bi-parietal.B (B)	13.6
Basio-breg.HT (H)	14.4
Facial breadth (GB)	-
Max.zygom.B (J)	-
Condyle Length (Cyl)	-
Ramus B (least) (RB <sub>i</sub> )	37.16
Bi-gonial breadth (GoGo)	10.57
Max proj.L.mandib (ML)	-

The cranial measurements above are described and illustrated in Brothwell (1981; 82-83).

## 5.6 Human Anthropometrics - Descriptions of Metric Shorthand

### *Femora*

- FeL<sub>1</sub> Maximum length  
FeL<sub>2</sub> Oblique/Physiological length  
FeD<sub>1</sub> Minimum anterior-posterior diameter (below the lesser trochanter)  
FeD<sub>2</sub> Minimum transverse diameter  
FHD<sub>1</sub> Maximum head diameter  
FeD<sub>3</sub> Anterior-posterior diameter at the mid-shaft  
FeD<sub>4</sub> Transverse diameter at the mid-shaft  
FeE<sub>1</sub> Bicondular width

### *Tibiae*

- TiL<sub>1</sub> Maximum length  
TiD<sub>1</sub> Minimum anterior-posterior diameter (at nutrient foramen)  
TiD<sub>2</sub> Minimum anterior-posterior diameter (at nutrient foramen)  
T<sub>1</sub>E<sub>1</sub> Bicondular width

### *Fibula*

- Fil<sub>4</sub> Maximum length

### *Humeri*

- HUL<sub>1</sub> Maximum length  
HHD Maximum head diameter  
HUE<sub>1</sub> Epicondular width

### *Raii*

- RaL<sub>1</sub> Maximum length

### *Ulnae*

- ULL<sub>1</sub> Maximum length  
Phys.L Physiological length

Most of the measurements described above are illustrated in pictorial form in either Brothwell (1981; 77-87) or Bass (1987; 70-80).

## 6 BIBLIOGRAPHY

- Aufderheide, A C, and Rodriguez-Martin, C, 1998 *The Cambridge Encyclopedia of Human Paleopathology*, Cambridge
- Bass, W M, 1987 *Human Osteology, A Laboratory and Field Manual*, Missouri Archaeological Society
- Brothwell, D R, 1981 *Digging Up Bones*, British Museum
- Cox, M, and Mays, S, 2000 *Human Osteology in Archaeology and Forensic Science*, Greenwich Medical Media Limited, London
- Krogman, W M, 1962 *The Human Skeleton in Forensic Science*, Charles C Thomas, Illinois
- Lovejoy, C O, Meindl, R S, Pryzbeck, T R, and Mennsforth R P, 1985 *Chronological Metamorphosis of the Articular Surface of the Ilium. A New Method for Determination of Skeletal Age at Death*, American Journal of Physical Anthropology, Vol **68**, 15-29
- Maresh, M, 1955, *Linear Growth of Long Bones of Extremities from Infancy through Adolescence*, American Journal of Diseases of Childhood, Vol **89**
- Mays, S, 1998 *The Archaeology of Human Bones*, London, Routledge
- Ortner, D J, and Putschar, G J, 1985 *Identification of Pathological Conditions in Human Skeletal Remains*, Smithsonian Contributions to Anthropology, Vol **28**, Washington, D C
- Roberts, C A, and Manchester, K, 1995 *Archaeology of Disease*, Alan Sutton
- Trotter, M, and Gleser, G C, 1952 *Estimation of Stature from American Whites and Negroes*, Journal of Physical Anthropology, Washington, Vol **10**, 463-514
- Trotter, M, and Gleser, G C, 1958 *A Revaluation of Estimation of Stature taken during Life and Long Bones after Death*. Journal of Physical Anthropology, Washington, Vol **16**, 79 - 123
- Ubelaker, D H, 1989 *Human Skeletal Remains: Excavation, Analysis and Interpretation*, Second Edition, Smithsonian Contribution to Anthropology
- White, T D, 1991 *Human Osteology*, Academic Press