

1. Introduction

This report contains the results of the osteological analysis of human remains recovered during the excavations carried out at Gramer House, Mancetter, Warwickshire (Site Code: EWA 7456). The excavation was carried out by Worcestershire Historic Environment and Archaeology Service during May 2005, for which a report is under construction.

A total of 7 graves were excavated, (contexts [174], [192], [197], [199], [201], [203] & [208]), although the majority of these yielded no human bone preserved well enough to allow osteological analysis. One articulated inhumated human skeleton, however, referred to as context [173] was recovered from the site. All the graves were thought to be late Saxon or early Medieval in date from the associated pottery recovered from the features. The graves were orientated in an East-West alignment with the head to the west end of the grave, which is typical of Christian burials from this period. The analysis of the human remains from context [173] can be found in Part One of this report.

Animal bone was recovered from a number of features (contexts [102], [109], [196], [207]). The results of this analysis are presented separately in Part Two.

The osteological analysis of the human remains aims to provide a detailed inventory of the skeletal and dental material recovered, the condition of the bone present, completeness of the skeletons and to provide, where possible, the age, sex and stature of the individuals recovered. Any evidence of pathological changes is also noted.

2. Methods and Process

The skeletal material was analysed according to the standards laid out in the guidelines recommended by the British Association of Biological Anthropologists and Osteologists in conjunction with the IFA (Guidelines to the Standards for Recording Human Remains, Brickley and McKinley (eds) 2004) as well as by English Heritage (Human Bones from Archaeological Sites: Guidelines for producing assessment documents and analytical reports, Centre for Archaeology Guidelines, 2002).

- Recording of the material was carried out using the recognised descriptions contained in Standards for Data Collection from Human Skeletal Remains by Buikstra and Ubelaker (1994). Copies of the recording forms used are contained in Appendix A of the report.
- The material was analysed macroscopically and where necessary with the aid of a magnifying glass for identification purposes. Where relevant, digital photographs have been used for illustration.

- The material was analysed without prior knowledge of associated artefacts so that the assessment remained as objective as possible.

2.1. Reasons for the Analysis

Osteological analysis was carried out to ascertain:

- Condition of bone present
- Completeness of the skeleton
- Inventory of the skeletal material
- Sex Determination
- Age Assessment
- Non-metric Traits
- Stature
- Skeletal Pathology
- Dental Pathology

PART 1: Human remains from Gramer House, Mancetter, Context [173]

1.1 Condition of the Bone Present

1.1.1. Introduction

The condition of the bone was assessed macroscopically and recorded according to the categories and descriptions referred to by Brickley and McKinley (2004).

1.1.2. Observations

The preservation of the human bone contained in context [173] was found to be varied, being graded from 2-5 (Brickley and McKinley 2004) although overall, the surface of the bones were thought to be in 'fair' condition (Buikstra and Ubelaker 1994). Whilst some of the bone cortex had surfaces that were reasonably intact, others were abraded by water and root action, rendering the surfaced unobservable. All the bone recovered was, however, extremely fragmented.

1.1.3. Results

The bone recovered from Skeleton [173] was found on the whole to be in fair condition, although condition of the bone was very varied and the remains were extremely fragmentary.

1.2 Completeness of Skeletons

1.2.1 Introduction

This is a guide to the overall completeness of the individual's skeletal remains and is calculated according to the percentage of the bones present in relation the total number of bones in a complete human skeleton. This is gauged through an assessment of the amount of material representing different areas of the body. A complete skeleton comprises of:

Skull = 20%

Torso = 40%

Arms = 20%

Legs = 20%

1.2.2 Observations

Only a small proportion of skeleton [173] was recovered due to preservation conditions. Only a few fragments from each area of the body survived. The total weight of the fragments was 130g.

1.2.3 Results

Skeleton [173] was estimated to consist of less than 10% of its original skeletal content and falls into the <25%+ category (Buikstra and Ubelaker 1994) of completeness.

1.3 Inventory of Skeletal Material

1.3.1 Introduction

An inventory of the skeletal material was recorded in tabular form on Sheet B (contained in the appendix). Each bone has been recorded as being absent or present. The long bones are recorded according to the presence or absence of the proximal, middle and distal sections and also the proximal and distal joint surfaces. The percentage of completeness of the bones of the axial skeleton

(with the exception of the spine) is recorded in categories of > 75%, 75-50%, 50-25% and <25%. This detailed recording is necessary to understand the nature of the preservation of the skeletal material and any constraints that the condition of material may put on the ensuing analysis. From the perspective of future research, a detailed inventory also allows an accurate calculation of prevalence rates of pathological conditions such as fractures and joint diseases and should prove more fruitful for future reassessment should the skeletal material be reinterred.

1.3.2 Observations

Observations of material present were noted on recording sheet B contained in the appendix.

1.3.3 Results

The inventory of skeleton [173] reveals how little bone was recovered. The lack of completeness of this skeleton severely restricted the results of the osteoarchaeological analysis, especially assessment of any pathological changes. Only seven zyapophyseal lower thoracic/lumbar joint surfaces, a small fragment of one acetabular surface and two distal joint surfaces of two hand phalanges were observable, making it impossible to assess the presence of many joint diseases.

1.4 Age Assessment

1.4.1 Introduction

There are a number of techniques available for assessing the age of both adult and juvenile remains. The age of juveniles can be accurately assessed by observing the stage of development of skeletal growth, dental eruption and tooth formation. The assessment of adult remains is based on the changes observed in particular joints in the body, namely the auricular surface, pubic symphysis and costal rib ends. These changes are consistent with the ageing of the skeleton but fall into broad age ranges. These categories are Young Adult (20-34 years), Middle Adult (35-49 years) and Old Adult (50+ years) (Buikstra and Ubelaker 1994). Cranial suture closure and dental attrition are generally not considered reliable techniques for age estimation. However, due to the limited amount of bone recovered from this skeleton and the presence of one observable molar tooth surface, dental attrition using methods from Miles (1962) and Brothwell (1981) were employed in order to gain a tentative insight into the age at death of this individual.

1.4.2 Observations

The remains of skeleton [173] were severely depleted of skeletal material and it was not possible to apply any of the morphological techniques to assess the age at death of the individual represented. None of the epiphyses of the long bones survived intact and, therefore, it was not possible to make any observations

regarding epiphyseal fusion. However, three teeth crowns did survive and the wear of these crown surfaces was observed in order to make a limited assessment of the age of this individual. Dental attrition can only be used as a rough guide as to the age of death due to cultural factors, such as the amount of grit in the diet of the individual and also biomechanical factors such as whether an individual chews on one particular side of the mouth or if certain teeth are absent, forcing an individual to chew on the only teeth present.

The two tooth crowns observed were that of a lower second premolar and a lower 1st molar. The canine was identified as being from the right side and the 1st molar from the left. The premolar was observed to have only a little wear, with moderate cusp removal and was graded as category 2 (Buikstra and Ubelaker 1994). The 1st molar was observed to have been worn flat with complete removal of all cusps and small areas of dentine exposure were present. This wear was graded as category 4 (Buikstra and Ubelaker 1994).

1.4.3 Results

Analysis of the surviving tooth crowns revealed that this individual was unlikely to be a juvenile or an older adult. The tooth crowns were worn, indicating not only that the teeth had erupted but also had been used to a significant degree. The age of eruption for a lower second premolar is generally between 10 and 11 years of age and 6 years of age for a 1st lower molar (Smith 1991). However, the wear was generally slight on both teeth, and was estimated to fall into the young adult (20-34 years) age group using the Miles (1962) and Brothwell (1981) dental attrition charts (Buikstra and Ubelaker 1994). This analysis is, however, extremely limited and should only be considered as a tentatively suggested age assessment

1.5 Sex Determination

1.5.1 Introduction

Techniques employed to determine of the biological sex of adult skeletal remains are well established and are largely based upon an assessment of the morphological features exhibited by the skull and the pelvis. These features reflect the sexual dimorphism displayed between males and females and develop as the individual matures. These features are, therefore, not observably marked during adolescence and there are no reliable techniques for determining the sex of juvenile remains, except for DNA analysis. Sex determination is relatively accurate, some researchers reporting a success rate of 95% of known in tests on known sex samples (Phenice 1969). Techniques generally used include descriptive methods, metric analysis and discriminant functions depending on the completeness of the skeletal material.

1.5.2 Observations

There were no morphological features surviving that may have indicated the sex of skeleton [173] and the fragmentary nature of the skeletal material prevented any metric analysis being undertaken.

1.5.3 Results

The sex of this individual was recorded as ‘unobservable’ due to the lack of skeletal evidence present.

1.6. Non-Metric Traits

1.6.1 Introduction

Non-metric traits are morphological features that occur both in bone and dentition. These features have no functional purpose and occur in some individuals and not in others. The origins of non-metric traits have now been shown to be highly complex, each having its own aetiology and each being influenced to differing extents by genetics, the environment, age and sex of the individual and by physical activity. Generally, the analysis of these traits requires a large sample size. Non-metric traits have been recorded for these skeletons in order to allow future comparisons with findings from other late medieval assemblages in the Worcestershire area.

1.6.2 Observations

Observations were noted on recording sheet I (contained in the archive). The potential analysis of the presence or absence of non-metric traits was dictated by the state of preservation of the skeletal remains.

1.6.3 Results

Unfortunately, none of the anatomical locations of the non-metric traits assessed were present and, therefore, all non-metric traits were marked as ‘unobservable’.

1.7 Stature and Metric Analysis

1.7.1 Introduction

Stature of adult individuals can be reconstructed from measurements of long bones of the skeleton. Since the long bones of adolescents have not yet fully developed it is not possible to provide an estimate of stature for juveniles. Stature is the result of many factors including genetics and environmental influences, such as malnutrition and poor health. Height can be used as an indicator of health status and there is a wide range of literature on the relationships between height, health and social status.

1.7.2 Observations

None of the long bones of skeleton [173] were complete and no measurements could be taken.

1.7.3 Results

Due to the lack of data, no estimation of stature could be made.

1.8 Skeletal Pathology

1.8.1 Introduction

Palaeopathology is the study of diseases of past peoples and can be used to infer the health status of groups of individuals within a population as well as indicate the overall success of the adaptation of a population to its surrounding environment. Pathologies are categorised according to their aetiologies; e.g. congenital, metabolic, infectious, traumatic, neoplastic etc. Any pathological modifications to the bone are described. The size and location of any lesion is also noted. Distribution of lesions about the skeleton should be noted to allow diagnosis. A differential diagnosis for any pathological lesions should be provided.

1.8.2 Observations

Only a seven zyapophyseal lower thoracic/lumbar joint surfaces, a small fragment of one acetabular surface and two distal joint surfaces of two hand phalanges were observable from the skeletal material. None of these joint surfaces exhibited any pathological changes associated with any joint diseases. No pathological changes were observed on any of the other bone fragments.

1.8.3 Results

The palaeopathological analysis was very limited due to the under-representation of the bones recovered from skeleton [173]. However, it was observed that no joint disease was present on the very few joint surfaces that were present, which may corroborate the potential age of death of this individual. It may have been expected that an older individual would have exhibited some form of degenerative joint disease or osteoarthritis in this area of the spine; however, this inference, again, is very subjective and not conclusive.

1.9 Dental Pathology

1.9.1 Introduction

Dental pathologies recorded can provide a wide range of information. For example, calculus, caries, abscesses and periodontal disease may be indicative of

poor oral hygiene, infection or high sugar intake. Enamel hypoplasia is the product of defective enamel growth and is linked to poor nutrition and health status during childhood. Congenital abnormalities can also be noted such as those that are genetic in origin or those that are the result of pathologies such as syphilis.

1.9.2 Observations

Skeleton [173] had a total of three observable tooth crowns present. These had no roots. No alveolar bone, either belonging to the maxilla or the mandible, was present. Only a very limited analysis of dental health could be undertaken and only the presence or absence of caries, calculus and enamel hypoplasia could be assessed.

1.9.3 Results

Skeleton [173] exhibited no caries or enamel hypoplasia in the teeth present. The canine is thought to be one of the teeth that is most susceptible to any cessation of development (Goodman & Armelagos 1985). Since there were no hypoplastic defects on this canine, it is unlikely that there were any serious defects in any of the other teeth. This could indicate that the individual did not suffer any sustained periods of malnutrition, serious febrile diseases or any other pathological conditions (Hillson 1986). No caries were present, indicating that at, least during childhood, the individual's diet was low in sugar (Roberts and Manchester 1997). A small amount of calculus was observed on the lingual surfaces of the canine and the premolar resulting from failure to remove the build up of plaque on the teeth (Roberts and Manchester 1997). The amount of calculus observed was very slight and it would appear that, generally, from the limited evidence available for scrutiny, that the individual's oral hygiene was good.

10. Conclusion

The table below summarises the findings of the osteological analysis of skeleton [173] :-

	Skeleton [173]
Condition	Varied (2-5); on the whole fair but heavily fragmented.
Completeness	<10% (<25%)
Age	20-34? (Young Adult?)
Sex	Unobservable
Stature	Unobservable
Skeletal Pathology	None
Dental Pathology	Slight Supragingival Calculus.

- *The results of the osteoarchaeological analysis indicate that the remains of skeleton [173] were those of an adult, whose age at death was possibly between 20-34 years. The results of the analysis were severely impeded by the lack of skeletal material recovered due to the preservation conditions present on site. It is possible to say that no joint disease was present in any of the few zygapophyseal joint of the lower spine and that of those tooth crowns present, none exhibited any serious dental diseases. The lack of enamel hypoplastic defects on the canine crown may suggest that this individual did not suffer any major disturbances to development during childhood.*

PART 2: Faunal remains from Gramer House, Mancetter.

2.1 Introduction

A limited number of faunal remains were uncovered in association with the excavation of a burial site at Gramer House in Mancetter, undertaken by Worcestershire Historic Environment and Archaeology Service during May 2005. The contexts analysed were [102], [109], [196], [207]. Contexts [196] and [207] are the fills of two graves [197] and [208] whilst context [102] was the layer of subsoil. Context [109] is believed to represent an area of post-medieval disturbance to the site.

2.2 Method

The remains were identified using reference materials and identification guidelines by Schmid (1972) and Hillson (1996). Age estimations were determined from Silver (1969) and Grant (1982)

2.3 Preservation

The preservation of the remains was very poor and extremely friable with a yellowish white colour. The bones did not display any evidence of weathering, such as cracking or warping and were probably buried shortly after disposal.

2.4 Results

The results of the analysis have been summarised in table 1 below, showing the presence of domesticated species including cattle and a medium sized dog. The fusion of the long bones and the wear on the molar suggested that the cattle were at least 6 months [196] and 3.5 years of age [102] whilst the dog was at least 1 year at death [102]. None of the remains displayed any cut marks or other signs of butchering though the poor preservation may have obscured any such findings.

Site/context	Latin name	Common name	Element	Age	Side	Comments	
EWA 7456-102	<i>Bos taurus</i>	Cattle	Prox	Tibia	>3,5-4 yrs	Left	-
EWA 7456-102	<i>Canis familiaris</i>	Dog	Compl.	Radius	>1 yrs	Left	ML=166mm
EWA 7456-109	Large mammal	-	Fragm.	Rib	-	-	-
EWA 7456-109	Large mammal	-	Fragm.	Mandible	-	-	-
EWA 7456-109	Large mammal	-	Fragm.	Mandible	-	-	-
EWA 7456-109	Med. Mammal	-	Fragm.	Long bone	-	-	-
EWA 7456-196	<i>Bos taurus</i>	Cattle	Compl.	Maxillary M1	Stage C*	Right	Minimal wear
EWA 7456-196	<i>Bos taurus</i>	Cattle	Fragm.	Premolar (p2)	-	-	-
EWA 7456-196	Large mammal	-	Fragm.	Maxillary	-	-	-
EWA 7456-207	Mammal	-	Fragm.	Fragments	-	-	-

Table 1: Identification of faunal remains from Gramer House, Mancetter

- Grant 1982

2.5 Discussion

The remains uncovered from the excavation of Christian burials [197] and [208] are likely to be intrusive to the burials. It is unclear whether they were incorporated into the soil prior or post to the burials, but are likely represent remains of residual domestic refuse rather than deliberately deposited funerary goods. It is also likely that the faunal remains recovered from subsoil layer [102] and from the deposit resulting from post-medieval material disturbance [109] also represent domestic refuse.

3. Gramer House, Mancetter : Discussion and Conclusion

Seven features interpreted as being graves were excavated at the site of Gramer House. Unfortunately, the preservation conditions on site did not allow the recovery of much human skeletal material and, thus, the potential of the osteoarchaeological analysis was severely restricted. However, the nature and layout of the features suggest very strongly that these features were indeed graves. The majority of the graves were located outside a post-Roman boundary ditch running on a similar alignment, which itself is thought likely to be associated with the site of Mancetter Manor House, dating to around 1330AD. One grave lies within the area enclosed by the boundary ditch, respecting its alignment. The burials, therefore, may well be contemporary with or predate the ditch. They are likely to be associated with the site of the nearby Church of St. Peter. The present building dates to the 12th century, although it is possible that an earlier building may have existed.

The nature of the burials, being aligned East-West and being unfurnished with grave goods of any kind would suggest that they were Christian burials. Christian burials dating to the Roman period tend to be found with some form of grave goods or personal items, represented by hobnails or articulated animal remains, though this is not necessarily true in all cases. Rural Roman burial sites of this scale tend to be located alongside contemporary roads, outside an area of local settlement. The animal bone found associated with these features was disarticulated and minimal, leading to the conclusion that these were not deposited as part of a burial rite but were possibly specimens that have become incorporated into the grave fill through post-depositional taphonomic factors, such as soil movement (through tree root disturbance or animal and worm burrowing etc.) or were residual from prior domestic activity on site. The funerary evidence gathered here suggests a date more likely to be of the late Saxon period at the earliest and has parallels to other sites from this date, such as the cemetery at Whitby Headland. Here, graves were aligned east-west, contained very few finds and were associated with the nearby Abbey (<http://www.eng-h.gov.uk/projects/whitby/wahpsae/update01/update01.htm#a3>). Unfortunately, no conclusive evidence has yet been recovered from Gramer House to give a clearer idea of the date of the burials.

Analysis of the one human skeleton to be sufficiently recovered for assessment revealed that the individual was most probably a young adult. The sex of this individual could not be determined due to a lack of physical evidence. No

skeletal pathology was observed although slight supragingival calculus was found to be present on the few tooth crowns that had survived. The preservation of the skeletal material was on the whole fair and it may be possible that a radiocarbon date could be obtained from some of the better preserved bone to confirm the date of the deposition.

4. Acknowledgements

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THE ARCHIVE

Type	No	Type	No
Skeleton Recording Form A	1		
Skeleton Recording Form B	1		
Skeleton Recording Form D	1		
Skeleton Recording Form E	1		
Skeleton Recording Form I	1		

Skeleton Recording Form J	1		
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Appendix

Recording Sheets for Skeleton [173]