

Reports from the Environmental Archaeology Unit, York 98/39, 8 pp.

Report on two further human inhumations from Campanaio, Province of Agrigento, Sicily (site code MO98)

by

Cluny Johnstone

Summary

Two further human skeletons, both assumed to be late Roman or early post-Roman in date, were recovered during the 1998 field season at Campanaio. They were initially recorded in situ and examined in more detail after excavation and cleaning. The burial positions of both individuals were virtually identical (east-west alignment, lying on right side, arms and legs extended) and the same as the skeleton (E328) excavated in the 1997 field season. Skeleton E349 was a male individual, between 25 and 35 years of age and about 182 cm tall. Several pathological conditions were noted, including thalassaemia and a lesion tentatively identified as a metastatic carcinoma. Skeleton E350 was a subadult individual between 12 and 15 years of age.

Keywords: SICILY; CAMPANAIO; LATE ROMAN - EARLY POST-ROMAN; HUMAN REMAINS; INHUMATIONS; SUBADULT; PATHOLOGY; THALASSAEMIA

Author's address:

Palaeoecology Research Services
Environmental Archaeology Unit
Dept. of Biology
University of York
PO Box 373
York YO10 5YW, UK

Prepared for:

Professor Roger Wilson
Dept. of Archaeology
University of Nottingham
Nottingham
NG7 2RD

Telephone: (01904) 433846/ 434487/434475
Fax: (01904) 433850

16th December 1998

Report on two further human skeletons from Campanaio, Province of Agrigento, Sicily (site code: MO98)

Introduction

The site of Campanaio, *commune* of Montallegro (Province of Agrigento), lies on a gently sloping hill facing west towards a small lake. Two inhumation burials were discovered (in Area E) during excavations in September 1998. One grave had been dug through a tile fall associated with the late 5th century AD abandonment phase of a nearby building, the other was stratigraphically at the same level but had no clear dating evidence.

Methods

The remains were excavated by hand trowelling and recorded *in situ* by photography, planning and detailed notes. The height of the adult skeleton was measured whilst still in the ground. The bones were then lifted and washed prior to further detailed recording. Age at death was estimated using the state of epiphyseal fusion, tooth eruption and the dental wear stages developed by Brothwell (1972). Stature was estimated using the formulae of Trotter and Gleser (quoted in Bass 1987).

Results

Skeleton E349

Preservation

The skull, pelvis, and scapulae were poorly preserved and were very fragmentary when lifted; the rest of the bones were reasonably

well preserved.

Description of the inhumation

The skeleton lay on its right-hand side with the head to the west, feet to the east and the face to the south. The left shoulder, upper torso and pelvis were slumped forwards, though this may be the result of decay rather than the original burial position. The middle thoracic vertebrae had collapsed downwards and were displaced. Both arms were extended with the hands on top of each other in front of the pelvic region. The left ulna had been displaced, possibly by the pelvis slumping forward. The legs and feet were fully extended with the left foot and knee on top of the right ones.

Description of the human remains

Cranium and mandible

The cranium was fairly fragmented, particularly the left side of the face and ear region, both in the ground and after excavation. The occipital, parietals and frontal were reasonably intact. The right temporal was fairly complete, the mastoid process was very large, and the zygomatic root extended above the external auditory meatus, which was also large.

The frontal showed a backward-sloping forehead with large brow ridges and no frontal bossing. The nuchal crest was very pronounced (or so far as could be judged from the small intact fragment). The right maxilla was almost complete but the left was more fragmentary. The mandible was

reasonably intact (tooth-row complete), with a pronounced mental eminence and slight gonial flaring (see Table 1 for a list of teeth present). Both dental arcades were large.

Vertebrae

Seven cervical, twelve thoracic, five lumbar and two coccygeal vertebrae were present, although some (mainly the thoracics) were more fragmentary than others.

Sternum and ribs

The sternum was very fragmentary but the end of the sternal body and the manubrium were still recognisable. All the ribs appeared to be present in the ground but fragmented on lifting. The ribs were very robust, up to 18 mm wide, with very robust muscle insertions at the articular ends.

Pectoral girdle

Both clavicles were complete with prominent conoid tubercles. Both scapulae (which fragmented on lifting) had very thick axillary borders and robust muscle insertions, particularly on the acromion and coracoid processes. The right scapula glenoid/acromion area was complete and showed a very deep scapular notch.

Arms

Both humeri were reasonably complete (proximal ends were fragmented), with robust muscle insertions on the upper portion of the shaft anteriorly. Both radii were present and showed very pronounced interosseous crests. The distal third of the left ulna was missing as a result of having been disturbed in the ground, the right ulna was complete. The interosseous crests of both ulnae were pronounced.

Hands

Of the left hand, seven carpals (pisiform missing), all five metacarpals, and five proximal, four middle, and five terminal

phalanges were present. Of the right hand all eight carpals, five metacarpals, and five proximal, four middle, and four distal phalanges were present.

Pelvic girdle

The sacrum appeared whole in the ground but fragmented on lifting; all parts were present and fully fused. Both pelves were complete but very fragile in the ground and fragmented considerably on lifting. The left acetabulum was reasonably complete and very large (as were the femoral heads). In the ground the sciatic notch showed a very narrow angle.

Legs

Both femoral shafts were relatively complete although the ends (particularly proximal) were rather fragmentary. Both patellae were present. The left tibia was reasonably complete, the right one being more fragmented at the proximal end. Both showed very pronounced muscle insertions. Both fibulae were very incomplete with both ends missing.

Feet

For both feet, all eight tarsals, all five metacarpals, and five proximal, three middle and four distal phalanges, and four sesamoids were present (including big toes).

Description of pathologies

Cranium

The structure of the bone of parts of the cranial vault (mostly the parietals and occipital) was severely altered. There was also considerable thickening of the skull as a result of expansion of the diploe between the two surfaces. The exterior surface was normal in appearance but the interior surface was greyish and showed areas of destruction of the surface in some cases forming holes

into the diploe. The skeleton found at the same site in 1997 (Johnstone 1997) displayed very similar pathologies to this individual. However, the lesions on the interior surface of the 1998 individual were less severe, although the thickening was greater in places.

A slight depression surrounded by a large area of new bone growth on the bone surface was noted on the left mandible, about halfway up the posterior edge of the ramus. Both the depression and the new bone growth may have been caused by the presence of a metastatic carcinoma (a secondary tumour) (tentatively identified from a photograph by D. Brothwell pers. comm.).

Oral pathology

Slight supra-gingival calculus deposits were noted on both labial and lingual surfaces of the anterior lower teeth. A very small caries cavity was present on the mesial surface of the upper left 2nd molar. The upper right 2nd molar had been lost some time antemortem as the socket was well remodelled.

Post-cranial pathologies

Eight thoracic vertebra centra fragments showed osteophyte growth, mostly protruding less than 5 mm, but one had an approximately 10 mm extension. Some degree of ossification of the inter-vertebral ligaments was noted, together with osteophytes around the transverse articular facets and on a few costal facets. The middle and lower thoracics were the most severely affected bones.

Osteophyte growth was noted on the lumbar vertebrae on the transverse articular facets together with ossification of the inter-vertebral ligaments. Osteophytes on the centra were restricted to the 4th and 5th

lumbar. The 5th lumbar had a large bony projection on the right, anterior, superior margin which extended 13.5 mm above the surface of the centra. There was also less exaggerated lipping along the rest of the superior border.

The 4th lumbar showed a corresponding lump on the inferior border that 'articulates' with the projection below. This kind of growth is known as a 'parrot beak' osteophyte. The superior border also showed slight osteophyte growth.

The left humerus showed slight marginal lipping on the posterior edges of both epicondyles, though only the lateral epicondyle was affected on the right humerus. The sternal ends of both clavicles and the distal articulation of the 1st metacarpal also displayed marginal lipping.

Skeleton E350

Preservation

Preservation of the long bones was poor and the rest of the skeleton very poor. The pelvis, scapulae and tarsals crumbled into very small fragments upon lifting. All long bone epiphyses were also crumbly and the diaphyses were very light in weight and fragile.

Description of the inhumation

The skeleton lay on its right-hand side with the head to the west, feet to the east and the face to the south. The left shoulder and upper torso were slumped forwards, probably the result of decay rather than the original burial position. The face was also turned slightly downwards. The left arm was extended with the left hand lying on top of the femur. The right arm was extended and

lay against the side with the wrist bent and the hand lying in front of the legs. The legs and feet were fully extended with the feet and knees together on top of each other.

Description of the human remains

Cranium and mandible

The facial area of the cranium was very fragmented, both in the ground and after excavation. The occipital, parietals and temporals were reasonably intact but the basal part of the occipital and the sphenoid were very fragmentary, although pieces were still recognisable. Most of the facial bones (except zygomatics) were too incomplete to recognise. The right maxilla was almost complete but the left was very fragmentary (see Table 2 for a list of teeth present). The mandible was reasonably intact with the tooth-row complete.

Vertebrae

Seven cervical, twelve thoracic and many lumbar vertebrae fragments were present. Most of the spines and arches of the thoracics were broken. The vertebral epiphyses were absent in the ground.

Sternum and ribs

Both the manubrium and at least two parts of the body of the sternum were present and all were very porous and unfused. All the ribs appeared to be present in the ground but this was difficult to determine once excavated as they were very fragmented.

Pectoral girdle

Both scapulae and clavicles were present and complete in the ground. Both scapulae were very fragmented. The left clavicle was complete, the right in two pieces and there were no epiphyses.

Arms

The shafts of both humeri were present and almost complete with parts of all the epiphyses present but unfused. Diaphyses of both radii and ulnae were present and complete (although broken in two or more places). The epiphyses were all unfused and fragments of most of them were present.

Hands

Of the left hand, two very porous carpals, all five metacarpals (epiphyses unfused), and five proximal (epiphyses unfused), three middle, and five terminal phalanges (including the thumb) were present. Of the right hand, all eight very porous carpals, four metacarpals (thumb missing, epiphyses unfused), and four proximal (thumb missing, epiphyses unfused), four middle, and five distal phalanges were present.

Pelvic girdle

The sacrum was very fragmented and fragile, and the constituent vertebrae were not fused together. The pelvis was complete but very fragile in the ground and fragmented considerably upon lifting. The ilium, ischium and pubis were still separate bones on both sides. The acetabulum was very porous, as were the auricular surfaces and pubic symphysis.

Legs

The left femoral shaft was relatively complete, although the ends were rather fragmentary; the right shaft was in two pieces. Both sets of epiphyses were present and unfused. Only the left patella was present and was very porous. The right tibia shaft was reasonably complete, the left one more fragmented. Parts of both sets of epiphyses were present and unfused. Both fibulae were very fragmented with neither epiphysis recognisable.

Feet

In the ground both feet looked reasonably complete but many of the tarsals were so fragile they crumbled upon excavation. Of the right foot, the talus was still recognisable, and all five metatarsals (epiphyses unfused), and four phalanges were present. Of the left foot, the talus and navicular were recognisable, and all five metatarsals (epiphyses unfused), and three phalanges were present.

Description of pathologies and abnormalities

Cranium

Several wormian bones were present in the lambdoid suture. The interior surface of the frontal, particularly on the left-hand side, had a patch of discoloured bone where the preservation was poorer and the two tables of the skull had come apart in places. This is very reminiscent of the condition noted in Skeleton E349 (above) and E328 (Johnstone 1997), although less severe. The separation of the two tables may be a result of taphonomic factors and the immature age of the skeleton, as the condition does not appear to be in such an advanced state in this skeleton as in the other two.

Oral pathology

Linear Enamel Hypoplasia (LEH) lines were noted on all teeth, with the anterior ones displaying one pronounced line and several less pronounced ones. The posterior teeth showed only the less pronounced lines. These seem to indicate periods of stress from approximately 2 to 7 years of age. The pronounced line probably occurred around 2-4 years of age.

Discussion

Sex, age and height determination

Skeleton E349

The various features of the skull (mastoid process, zygomatic root, external auditory meatus, brow ridges, nuchal crest, gonial flaring and mental eminence) and pelvis (sciatic notch and acetabular size) used for sex determination all suggested that this individual was male. All the epiphyses present were fused, indicating an adult. All the 3rd molars had erupted and the degree of attrition suggested an age between 25 and 35 years (after Brothwell 1972).

The height of this individual was measured *in situ* as 173 cm from the left heel to the top of the head whereas the estimated height based on the measurements of the left tibia was 183 ± 4 cm and the right ulna was 190 ± 4.72 cm. The estimation of height from arm bones is less accurate, so the very large estimate of height from the ulna can be discounted; however, the estimate from the tibia is still relatively large in comparison with the height measured *in situ*. This discrepancy may be attributed to shrinkage and disturbance of the skeleton during decomposition causing the *in situ* measurement to be much less than the *in vivo* height. Also, in the ground the legs looked relatively long in proportion to the rest of the body which might provide an alternative explanation.

Skeleton E350

All the epiphyses of this skeleton were unfused, indicating an age less than 15 years. The tooth eruption suggests an age of 15 years \pm 36 months. Overall this individual appears to have been 12-15 years old at death. As a result the subadult age, sex and height estimations were not possible.

Pathology

Skeleton E349

The arthropathies noted in the back, pectoral girdle, and upper arms are unusual for an individual not of advanced years and, as noted in the report on the 1997 skeleton (Johnstone 1997), this is unlikely to be a high-status individual whose toothwear is inaccurately reflecting age. The alternative explanation is that these individuals' livelihoods involved a great deal of physical labour.

The pathological condition of the skull is unusual, and the degree of thickening is certainly abnormal. The destructive bone changes of the inner table and the enlargement of the diploe suggest that this individual may have suffered from anaemia. Given the geographical location of the skeleton (Mediterranean) it is possible that the underlying cause was thalassaemia, a genetic disorder causing anaemia. Thalassaemia is thought to have originated in ancient Greece and is prevalent today in areas once part of the Hellenic Greek empire, including the southern coast of Sicily (Grmek 1991).

Skeleton E350

The LEH lines are an interesting feature of this individual but not unusual. They indicate that periods of stress were suffered by the individual at various ages. LEH lines can be used to give a general picture of periods of poor health in an individual but the specific cause cannot be determined as many factors cause the lines including malnutrition and illness. (See previous paragraph for possible explanation of the cranial pathology.)

Archive

The human remains are stored at the

museum at Heraclea Minoa in Sicily, whilst the paper and electronic records pertaining to this work are stored at the EAU, University of York.

Acknowledgements

The work in Sicily was carried out with the kind permission of, and under the aegis of, the Soprintendenza per I Beni Culturali e Ambientali of Agrigento. The author wishes to thank Professor Roger Wilson for inviting her to be involved in this project, Professor Don Brothwell for advice concerning the pathological conditions, and to Dr Keith Dobney for reading earlier drafts of this report.

References

- Bass, W. M. (1987). *Human osteology; a laboratory and field manual* (3rd ed.). Missouri Archaeological Society.
- Brothwell, D. R. (1972). *Digging up bones*. London: British Museum (Natural History).
- Grmek, M. D. (1991). *Diseases in the ancient Greek world*. Translated by Muellner, M. and Muellner, L. Baltimore and London: The John Hopkins University Press.
- Johnstone, C. (1997). Report on the human skeleton from Campanaio, Province of Agrigento, Sicily (sitecode MO97). *Reports from the Environmental Archaeology Unit, York* 97/43, 6 pp.

Table 1. The dentition of Skeleton E349. P = present, X = antemortem loss, / = postmortem loss, C = caries cavity.

| Right Maxilla | | | | | | | | Left Maxilla | | | | | | | |
|----------------|---|---|---|---|---|---|---|---------------|---|---|---|---|---|---|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| P | X | P | P | P | P | P | P | / | P | P | P | P | P | C | P |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| Right Mandible | | | | | | | | Left Mandible | | | | | | | |

Table 2. The dentition of Skeleton E350. P = present, X = antemortem loss, / = postmortem loss, C = caries cavity, N = not present, U = unerupted

| Right Maxilla | | | | | | | | Left Maxilla | | | | | | | |
|----------------|---|---|---|---|---|---|---|---------------|---|---|---|---|---|---|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| N | P | P | P | / | P | P | P | P | / | P | P | P | P | C | N |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| U | P | P | P | P | P | P | P | P | P | P | P | P | P | P | U |
| Right Mandible | | | | | | | | Left Mandible | | | | | | | |