# CATALOGUE OF BURIALS Katherine Gruspier

Forum II Burials

JUVENILES

## Burial 1B

Burial: Extended on its back, right upper body turned over onto the left side, head SW.

Age: 13 to 16 years (epiphyseal union).

Inventory: Complete.

*Pathology: Dental:* Slight wear, slight calculus on all teeth but mandibular anterior teeth which display extensive calculus on both aspects. Caries in maxillary right PM1 and PM2 (crowns destroyed), maxillary. left M2 (occlusal), right mandibular m2 (interstitial mesial), and left mandibular M1 (mesial buccal ).

Hemopoietic: Cribra of both orbits, porotic, moderate and healed.

Infection: Both medial tibiae, distal ends display woven lamellar bone, reactive and active, diffuse periostitis.

Developmental: Both second metacarpals have proximal epiphyses. Both 5th metatarsals have unfused scale epiphyses.

## **Burial 3**

Burial: No information available.

Age: 3.5 to 5.5 years (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Complete except for frontal and toes.

*Pathology: Dental:* Moderate wear and calculus on both arcades. 2 fractures on the buccal aspect of maxillary right first deciduous molar. Right mesial permanent incisor has two large hypoplastic lines. Large occlusal caries in the mesial pit of the mandibular permanent left first molar (erupted).

Developmental: Both first metacarpals have anomalous distal epiphyses - one is fusing.

# Burial 4

Burial: Extended on back, right arm flexed over manubrium, left arm flexed over abdomen. Head WSW.

Age: 14 to 18 years (dental calcification and epiphyseal union).

Inventory: Complete but for maxilla, and right ischium.

*Pathology: Dental: Mandible:* Slight to moderate calculus, slight wear, small occlusal caries of left PM2, m1 and m2, right m2. Slight hypoplasia of canines, enamel fracture of right I1, slight distal rotation of canines, and right medial incisor pushed lingually, while left is pushed labially (labial crowding).

Developmental: Spina bifida of S1, double spinous process, defect is to the left.

# Burial 5

Burial: Extended on back, right arm crossed over chest, head NW.

Age: 7.5 to 9.5 years (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Complete to mid thorax, with right lower arm.

Pathology: Dental: Slight wear, heavy calculus on mandibular anterior teeth. Fractures on deciduous maxillary right second molar and permanent mandibular right lateral incisor. Two tiny caries on occlusal surface of permanent first

mandibular molar.

*Hemopoietic*: Both orbits display slight healed porosity. Slight porosity is also present on the parietals and crossing onto the occipital, healed.

# **Burial 8**

Burial: Extended on back, head NE.

Age: 3 to 8 months (dental calcification).

*Inventory*: Left hemi mandible, portion of sphenoid, few thoracic arches and rib fragments, left clavicle. *Pathology*: None seen.

## **Burial 9**

*Burial:* Extended on back, arms down side of body with right slightly flexed inward, head NW (double inhumation with Burial 10).

Age: 4 to 6 years (dental calcification, dipahyseal length, epiphyseal union).

Inventory: Complete except for left arm.

Pathology: Dental: Slight wear on all teeth, a single occlusal/interstitial caries on maxillary left first molar.

Hemopoietic: Porous cribra in the left orbit, healed.

Infection: Porotic lamellar reaction on the medial midshaft of the left tibia, diffuse, slight and healing.

## **Burial 10**

Burial: Extended on back, arms down sides, head NW (double inhumation with Burial 9).

Age: 3 to 6 years (dental calcification and diaphyseal length).

Inventory: Complete except for feet.

Pathology: Dental: Slight wear and calculus, fracture of mesial left mandibular first molar.

*Hemopoietic*: Cribra orbitalia of both orbits, porosity with coalescence of foramina, mixed reaction of healing and active lesions - moderate.

Infection: Medial aspect of the right tibia displays porotic cortex - healed lamellar reaction, diffuse.

"Vermicular" bone covers the entire inner table of the occipital, it is thickened and sclerotic - similar to Burial 47.

# Burial 15

Burial: Extended on back, head SW.

Age: 13 to 20 years (dental calcification).

Inventory: Skull, few ribs, left scapula and clavicle.

*Pathology: Dental:* Slight to moderate calculus, slight wear, hypoplastic lines faint on molars and mandibular canine. Mandibular I2 right is rotated disto-lingually, 45 deg.

*Hemopoietic*: Cribra of both orbits is characterized by coalescing foramina with increased thickness, severe and a mixture of active and healing.

# Burial 16

Burial: Extended on back, head W.

Age: 16 to 19 years (epiphyseal union).

Inventory: Left arm and ribs, hands, sacrum, left hip and leg plus incomplete foot, right proximal femur and fibula.

Pathology: Infection: Left tibia displays, sclerotic reaction of periosteum, with porosity and striations on medial aspect, bone is thickened at midshaft.

## Burial 17

Burial: Extended on back, right arm over abdomen, left arm slightly flexed with hand in pelvis, head NW.

Age: 8 to 12 years (dental calcification and epiphyseal union).

Inventory: Complete except for ischia and pubes, few hand and foot bones only present.

Pathology: Dental: Slight wear and calculus. Slight hypoplasia on maxillary canines. Left lateral maxillary incisor is rotated 45 deg.

Hemopoietic: Slight, healed porous only cribra in both orbits.

Developmental: Sternal bodies are prematurely fused, and also to the manubrium. Sternal aperture present.

### Burial 21

Burial: Extended on back, arms down sides of body, head SW.

Age: 8 to 12 years (dental calcification, diaphyseal length, epiphyseal union).

Inventory: cranium minus face, left hemi-mandible, spine to T8, left ribs and arm minus radius.

*Pathology: Dental:* Slight calculus and wear, hypoplasia on anterior mandibular teeth in the form of 3 or 4 faint lines, 45 deg rotation of left medial mandibular incisor, and left mandibular second premolar, both mesio-lingually.

Hemopoietic: Left parietal at occipital (over lambdoidal suture) displays circumscribed area of slight healed porosity.

### Burial 22

Burial: Extended on back, head W.

Age: 10 to 15 years (epiphyseal union and diaphyseal length comparison to others in population).

Inventory: Skeleton minus skull, left arm, left hip, and feet.

*Pathology:* Arthritis: inferior articular facets of T11 are extremely porotic and misshapen, exhibiting subchondral destruction of the facet. T12 superior articular facets are pinched to form a groove for the porotic T11 facets. Right inferior articular facet of T12 is also porotic. This localized arthritic degeneration was likely caused by trauma.

### **Burial 23**

Burial: Extended on back, head SW.

Age: 1 to 2.5 years (diaphyseal length and comparison to others in sample, epiphyseal union).

*Inventory*: Axial skeleton, basi-occipital, right clavicle, right distal humerus, right lower arm plus few metacarpals, left proximal humerus and lower arm, ilia and fragment. of left ischium.

Pathology: None seen.

### **Burial 25**

Burial: Extended on back, arms flexed with hands in pelvis, head SE.

Age: 1.5 to 3 years (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Skull, axial skeleton, both arms without hands, right hip and proximal femur.

Pathology: Dental: very slight wear and calculus on both arcades.

Hemopoietic: Both orbits display severe, active cribra orbitalia, coalescing foramina with increased thickness. Porotic hyperostosis is also severe, active and healed with coalescing foramina with increased thickness at; right half of the

frontal, anterior to the coronal, left half of the frontal anterior to the coronal (circular circumscribed lesions), right parietal along the lambdoidal (also circular), left parietal in same position as right (circumscribed), and a diffuse area posterior to the previously mentioned affectation of the right parietal, but crossing the lambdoidal and spreading onto the occipital. The diplöe is thickened. Generalized anemic condition.

*Infection*: Left ulna, circumscribed area of reactive woven bone that is sclerotic, on the distal half between the posterior and interosseous crests.

### Burial 27

Burial: Extended on back, arms crossed over chest, left above right, head SW.

Age: 10 to 13 years (diaphyseal length and epiphyseal union compared to others in population).

Inventory: C3 to proximal tibiae, minus proximal humeri, right pubis and ischium and left pubis.

*Pathology: Trauma:* Left radius displays a Colles fracture at the distal end. It is well healed but with a lateral curving deformity. Sequelae include noticeable underdevelopment of the radius, ulna and metacarpals on that side, with disuse atrophy and osteopenia.

#### Burial 28

Burial: Extended on back, arms down sides of body, head NW.

Age: 1 to 2.5 years (dental calcification, diaphyseal length, epiphyseal union).

*Inventory*: Left half of skull, upper ribs, lower thoracics and lumbars, right pectoral girdles, humeri and fragments of lower arms and metacarpals, left femur, part of sacrum and left pubis.

Pathology: None seen.

#### **Burial 33**

*Burial:* Extended on back, right arm down side, head NE. *Age:* 6 to 18 months (diaphyseal length compared to others in sample). *Inventory:* Complete to knees (?). *Pathology:* None seen.

### **Burial 36**

Burial: Extended on back, right arm at side?, head SW.

Age: Newborn (metrical comparison to others in the sample).

*Inventory*: Right arm, right and left ilia and femora, proximal tibia, few rib, vertebral and metacarpal fragments. *Pathology: Infection*: All long bones, ribs and vertebral bodies are covered in diffuse, active, woven bone periostitis. This suggests a systemic infection.

### Burial 39B

*Burial:* No information. Found with Burial 39A. *Age:* Birth to 6 months (single tooth calcification and length of left humerus). *Inventory:* Left hemi-mandible, left humerus, portion of proximal, right ulna, right pubis. *Pathology:* None seen.

*Burial:* Extended on back, legs slightly flexed to the right, arms crossed over chest, head E. *Age:* 1 to 2 years (dental calcification, long bone lengths). *Inventory:* Complete except for left arm, left side of skull and mandible and Os coxae. *Pathology:* None seen.

# Burial 43

Burial: Extended on back, head SW.

Age: Birth to 6 months (long bone length).

Inventory: T1 to sacrum, right and left partial lower arms, right and left lower limbs, minus feet.

Pathology: Infection: Few ribs display thickened (cancellous) and porotic (cortical) sternal ends - slight, but pathological nonetheless.

# Burial 45

Burial: Extended on back, right arm straight and hand over pelvis, head SW.

Age: 9 to 14 years (dental calcification and diaphyseal comparison to others in population).

Inventory: Cranium and mandible minus face, axial skeleton and right hip, both arms and right hand.

Pathology: Dental: Slight wear and calculus. Mandibular right second premolar has a small enamel fracture, mesially.

## Burial 47

Burial: Extended on back?, head SW.

Age: 3 to 6 years (dental calcification).

Inventory: Skull fragments, left clavicle and scapula, spine down to mid thoracic, few left rib ends.

*Pathology: Dental: Maxilla:* Occlusal caries occur on many of the deciduous teeth, in one case with an ante-mortem fracture of half of the tooth. Hypoplastic defects are present in the form of large circular caries on both deciduous canines, and a hypoplastic line on the permanent left canine crown. *Mandible:* Canines and molars are affected by occlusal and interstitial caries. Both deciduous first molars bear several hypoplastic pits on the buccal and lingual surfaces. The right deciduous canine has a large circular caries on its buccal surface also. It would appear that these teeth were affected by a developmental upset that resulted in defects of the enamel, causing a propensity for caries to develop more rapidly.

*Infection:* The left parietal, inner table at parietal boss exhibits an area of sclerotic, "worm eaten" bone. It is a localized resorptive lesion, with spicules of bone left behind in the channels edged by sclerotic bone.

# Burial 49

*Burial:* Extended on back, right arm down side, head NE. *Age:* 5 to 8 years (comparison with others in population). *Inventory:* Right half of a skeleton. *Pathology:* Insufficient time to analyze.

# Burial 51

*Burial:* Extended on back, but lying slightly on its left side, arms down side of body, head W. *Age.* 4 to 6 years (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Complete except for right ulna and feet.

Pathology: Dental: Slight wear and slight calculus on both arcades. Enamel fracture of deciduous mandibular left mesial incisor.

*Hemopoietic*: Active cribra orbitalia, moderate to severe at the lateral corners, coalescing foramina with increased thickness. Porotic hyperostosis on glabella, both greater wings of sphenoid and spreading onto the temporals, here it is porotic only and active.

*Infection*: 5 upper to mid ribs display diffuse, raised woven bone periostitis extending from the head to the sternal end, on their inner aspects. This is suggestive of an acute pulmonary infection of the left lung.

# **Burial 54**

Burial: Extended on its back, arms down sides, head W. Feet and legs on bedrock, postholes at head and foot of skeleton.

Age: 2 to 2.5 years (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Complete.

Pathology: Hemopoietic: healing cribra orbitalia in both orbits, coalescing foramina with increased thickness.

Developmental: C1 is fused to the occiput at the spinous process. C2 and C3 fused together at posterior arch (two separate arches not discernible).

## Burial 55

Burial: Extended on back, arms down sides of body, head W.

Age: 10 to 15 years (epiphyseal union).

*Inventory*: Complete but for skull, cervicals, clavicles, left scapula and humerus, right humerus and proximal ulna and radius, left lower leg, and both feet, also, most of left hand.

Pathology: Developmental: epiphyseal union is slightly more advanced on the right side of the body than the left.

# Burial 57

*Burial:* Extended on back, head SW. *Age:* 2.5 to 4 years (Diaphyseal length). *Inventory:* Right leg and foot, left lower leg and foot. *Pathology:* None seen.

# Burial 62

Burial: Disturbed, head NW. *Age*: 7 to 12 years (?) (comparison of size to others in population). *Inventory*: Few right ribs, fragments of thoracic vertebral arches, fragments of sternal body. *Pathology*: None seen.

# Burial 67

*Burial:* Extended on back, head W. *Age:* 1.5 to 2.5 years (diaphyseal length and comparison to others in sample). *Inventory:* Left humerus, scapula and clavicle, single tooth. *Pathology:* None seen.

*Burial:* Extended on back, arms along sides, head 30 deg (information in field notes). *Age:* 1 to 2 years (dental calcification). *Inventory:* Complete. *Pathology:* None seen.

## Burial 72

Burial: Extended on back, head NW.Age: 10 to 15 years (diaphyseal length comparison to others in population).Inventory: Right lower leg and foot, left foot (partial).Pathology: Developmental: 5th metatarsals both have "scale" epiphyses, unfused.

# Burial 73

*Burial:* No information. *Age:* 6 to 18 months (dental calcification). *Inventory:* Portion of skull, thorax, right ilium, right clavicle, humerus and partial ulna. *Pathology:* None seen.

## Burial 82

*Burial:* No information. *Age:* 6 to 7 years (?) (comparison of metatarsal length to others in population). *Inventory:* 2 partial feet. *Pathology:* None seen.

## **Burial 85B**

*Burial:* No information, troweled out with 85A. *Age:* 1.5 to 2.5 years (single tooth calcification). *Inventory:* left and right ischium and pubis, fragment of frontal, fragment of cervical arch, few teeth. *Pathology:* None seen.

## Burial 87

Burial: Extended on back, left arm slightly flexed with hand in pelvis, head NW.
Age: 5 to 7 years (dental calcification and diaphyseal length).
Inventory: Complete but for most of face, thorax, humeri and pectoral girdles, fight radius and hands.
Pathology: Dental: Central upper incisors both display two slight hypoplastic lines.
Hemopoietic: Cribra of left orbit, porosity with coalescence of foramina, no thickening, appears to be healing. Right parietal near lambdoid displays porosity only, and is slight, healing.

## Adults

# **Burial 1A**

Burial: Extended on back, arms crossed over the chest, head SE. Grave was cut through a wall.

Age: 30 to 40 years (pubic symphysis and auricular surface morphology, cranial suture closure, dental wear).

Sex: Female.

Inventory: Complete except for the sternum and some foot phalanges.

*Pathology: Dental: Maxilla*: No caries or hypoplasia. Slight calculus and slight wear. Moderate to sever alveolar resorption, increasing on the posterior arcade. The right M3 is congenitally absent. The left PM2 is congenitally absent, and the right PM2 is much reduced in size. The left PM1 has rotated 90° distally to largely fill the gap of the missing PM2. Tooth rotation is also seen with the right premolars. Mandible: Wear and calculus moderate. No caries or hypoplasia. Alveolar resorption is moderate and ubiquitous. The right PM2 is rotated 90° mesially. The left incisors are rotated distally. The wear is uneven, molars being more worn on the buccal surface, and more worn in general than the incisors. The wear pattern is reflected in the maxilla.

Infection: Both tibiae exhibit healed striate periosteal new bone on the medial aspects.

*Arthritis*: C2 superior articular facet is slightly lipped. C7 and C8 display slight lipping of the anterior bodies. L4 displays moderate lipping of the superior body aspect.

Left first metatarsal exhibits porosity of the distal pedal aspect, continuing onto the articular surface, indicative of cartilaginous destruction.

Developmental: The left upper limb is noticeably (and quantifiably) smaller than the right.

## Burial 2

Burial: Extended on back, head W.

Age: 24 to 32 years (pubic symphysis).

Sex: Male.

Inventory: Left hip, leg and ankle, right leg and ankle.

*Pathology:* Infection: Both fibulae display extensive striated, sclerotic new bone, concentrated in the area of the interosseous crest, and extending to the anterior aspect at midshaft, where the bone is thickest. Patches of striated new bone and vascular impressions are visible on the posterior aspect of the shafts, where the changes extend proximally. Right tibia displays slight, striated sclerotic new bone along the medial aspect.

*Arthritis*: Left hip has an acetabulum that is rimmed with osteophytic new bone growth. The superior articular surface is very porotic with smooth-walled pits into the bone. The left hip displays and overgrowth of arthritic lipping of the inferior aspect of the acetabular rim.

Right and left patellae both display slight lipping around the superior-lateral articular facets.

The right tibia exhibits a small area of porosity on the distal articular surface, at the postero-lateral corner.

The left navicular displays a very porotic articular surface surrounded by lipping on its inferior aspect. Nothing normally articulates with the bone in this position, so it is possible that it may have been bipartite, with arthritic changes to the joint. The right cuboid shows porosity of the navicular articular facet.

Burial: Extended on back, right arm crossed over abdomen, head W.

Age: 25 to 35 years (auricular surface, dental wear).

Sex: Male.

Inventory: Complete except for the skull, right humerus, left lower arm and some hand and foot bones.

*Pathology: Dental: Mandible:* A tiny occlusal caries is seen on left M3, and a small interstitial one on left M1. A periapical abscess is seen around right M1, with alveolar resorption exposing the mesial root of M1 and the distal root of PM2. Calculus is heavy on the anterior dentition, with concomitant alveolar resorption there, and on the distal alveolus. Wear is slight to moderate. Hypoplastic lines are slight and double on the canines.

*Infection:* Both tibiae display striated new bone on their medial aspects. The left has a plaque of sclerotic periosteal bone located on the disto-lateral aspect.

The left fibula is thickened with layers of sclerotic new bone, the top most layer being striated and porotic, between the interosseous and posterior margins.

*Arthritis:* C1 and C2 display lipping and porosity around the right articulating facets. C3 exhibits deeply porotic superior articular facets. C4 displays complete destruction of the superior anterior body aspect due to destruction of the disc. C6 and C7 display pitting of the articular facets. T1 to T5 also display pitting of the articular facets, increasing in severity to extreme porosity and lipping. The rib articular facets are similarly affected though not as severely. The arthritic changes are more pronounced on the right side. T6 to T12 display slight pitting and porosity of the articular surfaces. T9 to T12 display osteophyte formation with porosity of the bodies, increasing in severity as they move inferiorly, and more pronounced on the right side. L3 to L5, although fragmentary continue to display lipping body destruction and osteopenia.

The right ulna displays a small circular area of pitting and porosity, indicative of cartilage breakdown anterior to the styloid process.

The right patella exhibits slight lipping around the medial facet, with a circumscribed subchondral defect of the lateral facet, which is large and pitted.

The left 1st metatarsal and both proximal articular surfaces of the proximal phalanges of the 1st toe exhibit circumscribed subchondral defects and some lipping, indicative of cartilaginous breakdown.

The left ribs display slight porosity and lipping around the head articular facets.

*Developmental:* The right and left ischia display circumscribed areas of smooth walled small pits. These may be indicative of cartilaginous breakdown, but appear similar to other ischial defects in this population sample ("Weaver's Bottom").

The anterior superior iliac spine of the left Os coxa is overdeveloped, protruding laterally from the crest.

The arch of the first sacral segment is not fused, indicating incomplete spina bifida.

# Burial 7

Burial: Extended on back, arms crossed over abdomen with hands in the pelvis, head W.

Age: 25 to 35 years (late fusing epiphyses, pubic symphysis, auricular surface, dental wear).

Sex: Male.

*Inventory*: Most of skull (upper face missing), spine except for C1 and C3 to C5, left ribs and clavicle, lower arms (few hand bones only), hips, left leg minus patella and most of the foot.

*Pathology: Dental:* Upper and lower dentition exhibit malocclusion and uneven wear. *Maxilla:* Calculus, moderate to severe wear. Hypoplastic lines on mesial incisors. Abscess at right M1 has resorbed the alveolus for 2 cm, only the mesial root of the tooth remains. Left M1 has an identical abscess. Small interproximal caries on the mesial aspect of

left M2. Third molars congenitally absent. *Mandible:* Wear is less severe than maxilla. Calculus is moderate to heavy on lingual surfaces. 1 hypoplastic line on incisors. Right incisors slightly rotated (I1 mesio-distally and I2 in the opposite direction). Right M1 displays a large apical abscess around each root apex. Crown fragment and distal root remain. Large interproximal caries of right M2, root exposed. Alveolar resorption severe around both teeth.

Trauma: T7 to T12 exhibit very large Schmorl's nodes.

L1 and L2 exhibit shallow and small Schmorl's nodes on both aspects of each of the bodies.

*Arthritis*: C2 displays slight lipping of the dens facet. C6 has slight crushing of the anterior inferior body. T1 displays similar crushing as C6, but on the superior body aspect. T4-T6 exhibit slight porosity of the articular facets. T7 to T12 exhibit crushing and porosity of the anterior body aspects, increasing in severity inferiorly. There was obvious breakdown of the disc in life. All of the aforementioned vertebrae also display bone spicules forming into the spinal canal.

*Developmental:* The left parieto-mastoid suture is prematurely fused, with no sign of a causative traumatic incident, therefore it was likely genetic in origin.

The left ischial tuberosity presents somewhat as an unfused epiphysis; islands of dense bone interspersed by subchondral sclerotic pits ("Weaver's Bottom").

Both hips display enhanced pectineal lines, culminating in a tubercle at the ilio-pectineal eminence.

The left fibula has a small bone spur just inferior to the proximal end, on the proximal aspect.

## Burial 11

Burial: Extended on back, hands in pelvis, head NW.

Age: 35 to 45 years (pubic symphysis and auricular surface morphology).

Sex: Male.

Inventory: Complete except for skull and mandible.

Pathology: Trauma: T10 to 12 exhibit large Schmorl's nodes.

L1 to L5 all display Schmorl's nodes on the superior body surfaces.

Infection: The right fibula exhibits circumscribed areas of thickened sclerotic bone along the posterior aspect.

*Arthritis:* The T1 exhibits slight lipping of the inferior body. The T2 is similarly affected with the addition of the superior body aspect. T3 exhibits fissures around the outer edge of the anterior centrum, perhaps indicating disc herniation. T7 and T8 have a moderate osteophyte on the right side, T8 and T9 exhibit a larger one, also on the right side. T7 to T12 exhibit progressively more deformed articular facets, with bone spicule formation in the spinal canal. The T7 to T10 vertebrae exhibit porosity and lipping of the demi-facets. T10 to T12 display lipping and porosity of the anterior body aspects. L4 exhibits lipping around the superior body, with a moderate osteophyte on the right side. The left radius and ulna exhibit slight lipping around the distal articular facets.

The left and right clavicles exhibit porosity of the lateral articular facets.

The right ulna has porosity and lipping around the lateral lip of the coronoid process.

Virtually all of the rib tubercle facets are porotic and lipped.

One proximal pedal phalange has slight lipping of the disto-pedal articular area.

The right fifth metatarsal exhibits destruction of the distal articular surface, appearing as a porous, sclerotic mixed reaction that gives the appearance of the articular facet having been dislocated and enlarged on the pedal aspect.

A second finger, proximal-middle interphalangeal joint has undergone arthritic, and possibly traumatic and or septic changes. The articulating surfaces are destroyed, and appear porotic and misshapen. Erosion can be seen distal to the joint, and an osteophyte has formed on the dorsal aspect, with slight lipping on the palmar aspect. The joint was fused

at a 135° posterior flexion. The changes to this joint and the fifth metatarsal appear very similar to those seen in rheumatoid arthritis, but the lack of an expected skeletal distribution does not support this as a possible diagnosis. *Developmental:* The right clavicle exhibits a costal tuberosity that is much enlarged and presents as a fossa.

# Burial 12/14

Burial: Extended on back, right arm flexed up onto chest, head SW.

Age: 40 to 45 years (auricular surface morphology).

Sex: Female.

*Inventory*: Right arm and scapula without hand, some left hand bones, T12, few lumbars and ribs, partial right hip, and right femur only.

Pathology: Arthritis: The T12 exhibits porosity and lipping of the left demi-facet.

A couple of lower ribs show porosity and lipping of the head articulations, in accordance with the observed vertebral change.

The right shoulder exhibits slight lipping around the inferior articular surface of both bones.

The right Os coxa displays slight lipping around the acetabulum.

# Burial 13

Burial: No information (very incomplete), head E.

Age: 25 to 45 years (dental wear, cranial suture closure).

Sex: Female.

Inventory: Skull (face incomplete), mandible and C1 to C6 (fragmentary) only.

*Pathology: Dental: Mandible*: Right teeth from PM2 distally remain. The crowns of PM2 and M1 are destroyed from wear with an abscess and alveolar resorption in the area (the teeth were no longer held in the jaw by bone). Alveolar resorption continues around M2. An interstitial caries is seen on the mesial aspect of M2. Deep grooves are apparent at the buccal CEJ of M2 and M3, and on M3 the grooving has progressed to a caries. Wear and calculus on these teeth is slight.

*Tumors:* The mandible has been almost entirely destroyed, leaving the distal portion (from PM) on the right, and only the ramus on the left. The remaining bone on the left displays very slight reactive periosteal new bone, bark-like, in a thin layer. The affected edges of the remaining bone appear smoothly scalloped. The right half of the mandible displays no periosteal new bone. The complete destruction of most of the mandible appears to have been caused by a lytic process with a possible secondary infection. A primary carcinoma of the mandible or metastatic spread is the most likely explanation. The skeleton is largely incomplete, so no other bones remain to test the metastases hypothesis. It is also possible that this destruction was solely caused by infection although one would expect to see more sclerotic bone formation.

*Arthritis:* C4 exhibits porosis of the superior anterior body, with a moderate osteophyte on the inferior body. C5 displays slight porosity of both inferior and superior body aspects.

*Developmental:* The skull is grossly asymmetrical, with the right frontal appearing pushed to the left, and all features on the right side located more distally than the left. The morphological traits of the right side of the skull (particularly those used for sex determination) are much larger.

The spinous process of C5 is curved to the right and points superiorly, with concomitant deformity of the sacral canal.

Burial: Extended on back, right lower arm flexed up so that right fingers rested on right clavicle. Head W.

*Age:* 35 to 45 years (dental wear, pubic symphysis morphology, auricular surface morphology, dental loss and arthritis). *Sex:* Female.

Inventory: Complete except for skull, wrist bones, left hand bones, some foot bones, the left ulna and sternum.

*Pathology: Dental: Mandible:* Teeth are extremely worn, and attrition is uneven. All molars but the right M1 lost antemortem, with sockets remodeled. Calculus is moderate. Interstitial caries are seen on mesial right M1, mesial left canine, and distal left PM2. A large cervical caries is on left PM1. Alveolar resorption is ubiquitous.

Trauma: There is a crush fracture to T6, in the center of the body.

*Infection*: The right femur has slight sclerotic periosteal new bone on the midshaft, extending from the lateral aspect to the linea aspera and medial to it.

The right tibia displays slight sclerotic bone on the interosseous crest. The distal end displays woven periosteal new bone that is particularly thick in the area of the fibular notch.

The left tibia displays a circumscribed area of thick sclerotic new bone on he lateral aspect of the proximal half of the bone. The fibular notch is roughened with periosteal new bone at its proximal end.

The right fibula exhibits thick sclerotic new bone on the lateral border of the proximal half. A patch is also seen on the posterior border inferior to midshaft.

The left fibula displays thick sclerotic new bone on the lateral aspect of the proximal half.

*Arthritis:* The left articular facet between C3 and C4 is extremely porotic and lipped, with some posterior displacement, and bone buttressing. C4 and C5 left facets are also affected, but much less severely. T5 has a slight osteophyte extending from inferior body. T9 exhibits a moderate and porotic osteophyte extending from the inferior body. T10 displays porotic destruction of the superior body, and a small porotic osteophyte extending from the inferior body. T11 shows destruction and porosis of the inferior body, with slight lipping which is more pronounced on the left. Both demi-facets are porotic and lipped, the right being extremely affected. T12 exhibits porosity of the superior body, and demi-facets affected as with T11. Osteophytic lipping is present throughout the lumbar spine, increasing in severity inferiorly, with concomitant porosity. The left superior articular facet of L4 is porotic. All of the osteophytes seen are woven bone that has not yet been remodeled, suggesting that the spinal arthritis was a relatively recent affliction.

The right scapula displays slight lipping around the glenoid fossa.

The right humerus displays slight lipping around the head.

The left humerus exhibits moderate lipping around the head, with the greater and lesser tuberosities exhibiting osteophytic bone growth.

Both radii exhibit lipping around the medial aspect of the radial tuberosities, the left more affected than the right. The 11th and 12th rib heads are porotic and lipped, in concordance with the changes seen on the vertebrae.

Developmental: Both 1st metatarsals display well developed "squatting facets" on the dorso-lateral aspects, just proximal

to the distal articular surfaces. The facets present as porotic with lipping around the facet.

#### **Burial 19**

Burial: Extended on back, arms crossed high on chest, head NE.

Age: 50 to 60 years (auricular surface, arthritic changes).

Sex: Female.

*Inventory*: Complete except for skull and vertebrae to T3, right humerus, most of the radius and distal ulna, the patellae and most of the feet.

*Pathology: Infection:* The midshafts of both femora exhibit sclerotic new bone formation, thickened and striated. It is more apparent on the lateral aspects. The tibiae display scattered patches of sclerotic plaques on the medial aspects of both the proximal and distal ends. The left tibia exhibits sclerotic periosteal new bone at the proximal end.

*Arthritis:* The T4 exhibits porosity of the right inferior articular facet, and the left upper demi-facet. The T5 has slight porosity of the right superior articular facet. The T7 and T8 display slight osteophytic lipping of the anterior body, inferior aspects. The T9 has osteophytic lipping on both aspects of the anterior body, more pronounced on the right side. T10 and T11 are fused at the body and left articular facets. T11 displays a crushing deformity on the left side, and both vertebrae are rarefied and osteoporotic. The demi-facets and transverse facets are grossly porotic and lipped. T12 displays slight osteophytic lipping on both body aspects, and the demi-facets are porotic. L1 and L2 are fused by large bone buttresses, but the articular facets are not. The bone is rarefied but dense. A cavity in the mid-body of L1 can be seen, with smooth walled edges. The left inferior articular facet of L2 is pitted and porotic. L3 to L5 all display lipping on the superior body. The cortical bone of these vertebrae is rarefied and lace-like, similar to the sets of fused vertebrae described above. The interior articular facets of L3 are porotic. It is unclear whether these changes are simply arthritic, part of a disease process, or arthritic as a result of trauma (this seems the most likely explanation).

The left radial fossa of the left humerus is resorbed and porotic, while the radial head exhibits localized areas of articular surface porosity.

The clavicles are porotic at the medial ends, the right affected more severely than the left.

The femora display slight lipping around the proximal and distal articular surfaces.

Developmental: One left upper rib has a bifid sternal end.

The sacrum has spina bifida of the first sacral vertebra.

#### Burial 20

Burial: Extended on back, arms extended down sides of body, head NE.

Age: 25 to 35 years (cranial sutures, dental wear, auricular surface).

Sex: Female.

Inventory: Complete skeleton minus left hip and femur, left lower arm, and both lower legs and feet.

Pathology: Dental: Maxilla: Slight wear and calculus. Small enamel fracture on right M1. Mandible: Slight wear and moderate calculus on the anterior teeth, no disease.

*Hemopoietic*: Well healed cribra orbitalia in both eye orbits, presenting as porotic in the left and coalesced foramina in the right. Well-healed porotic hyperostosis on both disto-medial parietals, extending onto the superior occipital and presenting as true porosity.

Arthritis: L5 superior body has a moderate localized osteophyte.

Developmental: Pronounced attachment (fossa) for right humeral deltoid attachment.

Small bone tubercle on left medial epicondyle.

## Burial 24

Burial: Extended on back, arms down sides of body, head NW.

Age: 30 to 50 years (pubic symphysis and auricular surface morphology, cranial suture closure, dental wear).

Sex: Male.

Inventory: Complete except for right hand, parts of left hand, some toes and both patellae.

Pathology: Dental: Maxilla: Calculus is slight (field cleaning may be partly to blame). Wear is extreme and angled lingually. Enamel fractures are seen on both M1s, right incisors and PM2. Secondary dentine has formed to fill in the

root canals on the molars. The presence of the secondary dentine and the fractures on these teeth suggest heavy use of the teeth, perhaps as tools. The right M2 and M3 were lost antemortem with remodeling of the sockets. A small cervical abscess is seen on the lingual aspect of the left M1. A tiny caries is seen on the occlusal surface of the right I1. The PM1s are rotated bucco-distally. Slight hypoplasia is seen on the canines. *Mandible:* Moderate calculus exists. Wear is moderate to extensive and angled lingually. Enamel fractures are seen on the left M1, PM2, and right C. Secondary dentine has occluded the root canals of both M1s. Slight alveolar resorption. 1 slight hypoplastic line on left PM2. No disease.

*Trauma*: There is an extra thoracic vertebra (T13) that suffered a crush fracture earlier in life. Large osteophytic buttresses have formed on the anterior body. No arthritic changes are seen on the articular facets, but the demi-facets display slight porotic changes.

A semi-circular depressed fracture is seen on the right frontal bone. It is 15 mm in length, and is mostly healed, with a slight area of sclerotic new bone surrounding the defect. A circular defect is also seen on the posterior left parietal. It measures 21.4 mm in diameter, and is well healed.

Infection: Both tibiae display slight remodeled sclerotic new bone on the medial aspects.

*Tumors:* A button osteoma, 9 mm in diameter is present on the right frontal bone. A button osteoma, 7.3 mm in diameter is resent on the middle of the left parietal.

*Hemopoietic*: The cranium from the middle of the frontal to the nuchal crest, and limited to the vertex exhibits thickening and porosity, with vessel channels apparent.

*Arthritis:* The C2 shows lipping of the right superior articular facet. The right inferior articular facet is lipped, porotic and eburnated. The corresponding right facet of the C3 is similarly affected. C6 exhibits slight lipping of the inferior body aspect. C7 shows moderate osteophyte formation of the superior body. T1 has porosity and lipping of both upper and lower demi-facets. Slight osteophytic lipping exists on the inferior body of T3. T4 has lipping on both inferior and superior body aspects. The thoracic vertebrae from 5 to 13 exhibit progressive porosity and lipping of the articular facets. This reaches an extreme between T8 and T9, where the facets are grossly porotic, with extreme, almost fused lipping. Inferior to this, the porosity and lipping continues, but with the addition of eburnation. Concomitant with these changes are steadily increasing osteophytes, although none near fusion. T10 to 12 have upper demi-facets that exhibit porotic changes.

L1 to L3 exhibit large osteophytes on the right anterior body aspects, with smaller ones on the left of the bodies. All of the osteophytic and arthritic changes to the thoracic and lumbar vertebrae appear to have arisen in response to the trauma to T13, and were likely exacerbated by having an extra vertebra.

The right scapula exhibits lipping around the inferior and posterior glenoid fossa.

The right clavicle exhibits porotic changes at both medial and lateral ends.

The lower ribs show porotic changes and lipping in concordance with the arthritic changes to the vertebrae.

The right and left radii show slight lipping around the distal articular facets.

The right and left Os coxae exhibit porosity and sclerotic new bone in the superior portion of the acetabulum.

The femora have localized areas of porosity representing early cartilaginous destruction on the superior-distal aspects of each condyle for the left, and the medial condyle on the right.

The right fibula shows slight lipping around the proximal articular facet.

Developmental: C3 has a spinous process that is not bifid.

Both humeri exhibit deltoid crests that are so pronounced that they are actually tubercles.

*Burial:* Extended on back, with upper body lying on its left side, left hand down side of body, right lying in pelvis, head SW.

Age: 18 to 25 years (late fusing epiphyses, dental wear, pubic symphysis).

Sex: Male.

Inventory: Complete but for left lower leg and patella, and both feet.

*Pathology: Dental: Maxilla:* Slight wear and calculus, except for right I1, which is extremely worn. Hypoplasia is slight on canines. Small interstitial caries of right M2. *Mandible:* Slight wear, moderate calculus on lingual aspect of anterior teeth, which also display numerous small, worn fractures.

*Trauma:* Healed depressed fracture on right parietal (11.7 mm in dia.). Left ulna displays an exostosis on the distoposterior aspect. Possibly due to un-remodeled greenstick fracture, or an open wound. No sign of infection.

Infection: Left radius displays an area of healed striated periosteal new bone (sclerotic) corresponding to the area of exostosis on the ulna.

Healed sclerotic, striated periosteal new bone is present on both medial and lateral aspects of the distal two-thirds of the right tibia. Active new woven bone is present on the disto-anterior aspect.

Arthritis: C2 displays slight lipping of the superior articular facets and lipping around posterior body aspect.

Developmental: Attachment of pectoralis major on right humerus is a fossa.

# Burial 29

Burial: Extended on back, right arm flexed high on chest, left arm flexed over abdomen, head NE.

Age: 14 to 20 years (epiphyseal union).

Sex: Female.

Inventory: Complete but for skull, right scapula and clavicle, both radii, left pubis, few finger and toe bones.

*Pathology*: *Infection*: Left third metatarsal displays an area of circumscribed, active periosteal new bone on the lateral midshaft, woven and thick. This is suggestive of a localized abscess.

# Burial 30

Burial: Extended on back, head SW.

Age: 17 to 30 years (late fusing epiphyses, dental wear, cranial sutures).

Sex: Male.

Inventory: Complete but for parts of face, right radius, left ulna and most fingers, sacrum and left hip, right fibula.

*Pathology: Dental: Maxilla*: Calculus and wear moderate. Left M1 totally destroyed by caries, with abscess perforating into the maxillary sinus. Interstitial caries on distal left M2. *Mandible*: Calculus moderate, wear slight. Lose of right M1 antemortem, with socket re-modeled, total destruction of crown of right PM 2 with root canal exposed, tooth is rotated and crowded also. Left PM2 and M1 are missing PM, but there is a large periodontal abscess affecting the alveolus in the area. Both mental foramina are enlarged.

Hemopoietic: Posterior frontal, spreading to parietals displays healed porotic only porotic hyperostosis.

*Infection:* Both femora display thickening and sclerotic, plaque-like new bone on the midshafts, medial aspects to the linea aspera. Both have extra large foramina.

Tibiae both display diffuse, thickened, plaque like sclerotic new bone, healed and spreading from interosseous to posterior aspects. Active woven bone is seen on both distal ends, posterior aspects. Left fibula is thickened and healed from midshaft proximally, with active woven new bone on the postero-distal aspect.

Developmental: C2 spinous process is much larger on the right than the left (incorrect fusion?).

# Burial 32

Burial: Extended on back? No information.

*Age:* 35 to 45 years (pubic symphysis and auricular surface morphology, cranial suture closure, dental wear). *Sex:* Male.

*Inventory*: Complete except for most of the left humerus, the left fibula and some of the bones of the hands and feet, with ribs and vertebrae fragmentary.

*Pathology: Dental: Maxilla:* Only the left half of the arcade remains. The left PMs and M1 are lost antemortem. An abscess is seen in the socket of left M1. An abscess periapically around M2 has perforated the alveolus, and expanded the socket, the crown of the tooth has been destroyed by caries, but the roots remain. Alveolar resorption is extreme around the abscesses. *Mandible:* Wear is severe, calculus and alveolar resorption are moderate and ubiquitous. The left PM2 and M1 are lost antemortem by caries and abscessing, which can still be seen, although the sockets are largely remodeled. The right M1 is lost antemortem with the socket remodeled. The right M3 is congenitally absent. The left M2 and M3 display interproximal cervical caries on the interstitial aspects. The left M2 displays an enamel fracture in this area.

*Trauma*: Trauma to the left elbow is seen. The radial notch and coronoid process of the ulna are enlarged. The trochlea is lipped, and the coronoid fossa is filled in with sclerotic new bone. The olecranon fossa is also partially obliterated. These changes suggest that flexion and extension were not entirely possible. No arthritic changes are seen. The changes suggest a childhood dislocation or blunt force injury.

A proximal hand phalange exhibits a sclerotic bone build up of the dorsal aspect. This is suggestive of localized sharp force trauma with infection that was well healed at death.

*Hemopoietic*: the occipital and posterior parietals are covered in moderate porosity, with enlarged vessel openings dotting the area (hypervascularization). These changes could also have been due to a localized infection.

*Arthritis:* Crushing and anterior slippage of the body of C5 is seen, with lipping of the superior body aspect. The spinous process of T1 is deformed, porotic and lipped. The demifacet of the left side of T12 is lipped and porotic. The right articular facets of L1 and L2 are deformed, porotic, and display kissing osteophytes. The L5 exhibits posterior slippage, with crushing of the body. The articulating S1 also displays crushing, porosity and deformation. Between the two is a large osteophyte, surrounding the entire body of S1, and fused with the osteophyte of L5 at the midline.

The left femoral greater trochanter exhibits lipping of the anterior border, with the trochanter itself displaying porosity. This is likely the result of muscle strain in this area.

The right first metatarsal and proximal phalange exhibit arthritic changes (lipping and sclerosis) at the joint, with increased robusticity of the tendon attachments.

Developmental: Acromial articular facets exist on both scapulae and clavicles. These are extremely porotic.

The right hip displays an enhanced pectineal line, culminating in a tubercle at the ilio-pectineal eminence.

An accessory rib is present (either cervical or lumbar). Pieces of ossified costal cartilage are also present.

# Burial 34

Burial: Extended on back, arm position unknown, head E.

Age: Adult.

Sex: Female?

Inventory: Right leg (partial), left tibia, fibula and foot.

*Pathology: Developmental:* Small tubercles or tuberosities are seen on the dorso-medial surface of the right first metatarsal, just proximal to midshaft; on the anterior aspect of the left fibula, just lateral to the superior extent of the distal articular facet; on the medial aspect of the left first toe distal phalange, just distal to the proximal articular surface;, and on two proximal foot phalanges just proximal to the distal articular surfaces.

# Burial 35

*Burial*: Extended on back? Head SE. *Age*: Adult. *Sex*: Male. *Inventory*: Partial right leg, minus foot, 2 hand phalanges. *Pathology*: None seen.

# Burial 37

Burial: Extended on back, hands over pelvis, head NW.

Age: 25 to 35 years (pubic symphysis, auricular surface).

Sex: Female.

Inventory: Hips, legs, partial feet and partial hands.

*Pathology: Infection:* Right tibia displays thickening and sclerotic new bone is seen along the posterior crest. The medial aspect displays plaque-like sclerotic new bone. Both aspects are affected moderately.

Left tibia is similarly affected, though slightly.

Both fibulae display moderate plaque-like and striated sclerotic new bone on the proximal part of the shaft from the anterior to posterior crests.

Arthritis: Right hip displays very slight lipping around the lateral aspect of the acetabulum.

# Burial 38

*Burial:* Extended on back, right arm over lumbars, right hand over left ilium, left hand over right lower arm. Head NE. *Age:* 30 to 40 years (pubic symphysis and auricular surface morphology).

Sex: Female.

*Inventory:* Skeleton complete except for the skull, part of the mandible, left lower humerus and left foot.

Pathology: Dental: Mandible: The few teeth which are present in the portion of left mandible exhibit slight wear and slight calculus.

Trauma: T7 has a huge Schmorl's node on the inferior body.

*Infection:* Both femora display slight striated periosteal new bone along the medial aspects of the shaft. The left tibia displays the same, though milder still along the medial shaft aspect. The fibulae exhibit moderate and healed patches of thickened striated periosteal new bone between the interosseous and posterior crests.

Arthritis: T8 and T9 have slight porosity and lipping of the bodies. L5 exhibits slight lipping due to anterior disc displacement of the superior body.

Developmental: The sacrum displays a failure of fusion of the last sacral vertebra unilaterally on the left, leaving the sacral foramen open.

# **Burial 39A**

Burial: Extended on back, head NE. Found with burial 39B.

Age: Adult.

Sex: Male.

Inventory: Skeleton from distal sacrum to feet.

*Pathology: Infection:* Both tibiae exhibit sclerotic new bone which is seen on the medial aspects. It is plaque-like, moderate on the left and gross on the right, where it has thickened the bone to the point where it appears to have anterior bowing. Slight striated new bone is seen on the lateral aspects, and the distal interosseous muscle attachments are porotic and spiculated.

Both fibulae are grossly thickened by sclerotic new bone, with patches of striated plaque-like deposits over the entire bone.

# Burial 41

Burial: Extended on back, hands lying over pubes, head NW.

Age: 17 to 25 years (pubic symphysis and auricular surface).

Sex: Male.

Inventory: Complete from L4 down, minus toes.

*Pathology: Infection:* Both tibiae are osteopenic and have extreme depositions of new lamellar bone, porous, thickened and striated, has formed on the anterior crests to give the bones a "bowed" look. Sclerotic striated new bone is also seen on the lateral aspects, but without the thickening. Both fibulae are similarly affected, left more so that the right. Bones are affected on all aspects and there are additional areas of very thick and plaque-like deposits. Both bones are extremely osteopenic.

Other: Both femora are osteopenic, note above.

L5 displays a subchondral defect of the inferior body, which does not resemble a Schmorl's node. It may be an indication of a disc infarction.

Developmental: Partial lumbo-sacralization of L5 and S1, right side.

# Burial 42

Burial: Extended on back, hands over pubes, head NW.

Age: 30 to 45 years (pubic symphysis, auricular surface morphology)

Sex: Male.

Inventory: Skeleton complete except for the left arm and the face.

*Pathology: Trauma:* The left femur displays a very well healed fracture through the proximal third of the bone. There is some overlap of the proximal part with the distal, and callus formation as well as ossification spicules into the muscle. There is no sign of infection. This fracture was quite likely reduced and set, as no deformity has resulted from the trauma, and the bone is only 6 mm shorter than the right femur.

The left clavicle appears to have been fractured early in life. It is thickened, shortened, and displays a lack of the normal curvature. There is no sign of infection, or the fracture line. The left clavicle is however considerably shorter (137 mm) than the right (149 mm).

The spinous process of the first thoracic vertebra (T1) has been fractured, with callus formation and porotic changes to its most posterior aspect. A direct blow to the area is the most likely explanation for trauma such as this.

All thoracics display Schmorl's nodes, and in some cases these are very large.

*Infection:* The left tibia displays spiculated sclerotic new bone that is healed, around the proximal end. Striated periosteal new bone occurs along the medial aspect of the bone, and also in raised patches on the lateral aspect. This periostitis is healed and moderate. The left fibula displays similar changes although much more severe plaque and striations along the interosseous aspect of the bone. The right lower leg bones are similarly affect with slight periosteal, striated new bone on their interosseous margins.

*Arthritis:* The left femur displays expected arthritic changes of the distal end, due to the fracture of the bone. Slight lipping around the distal femoral, proximal tibial and patellar articular surfaces is seen. The patellar articular surfaces also display porosity indicative of cartilaginous breakdown.

C5-C7 exhibit porosity and slight lipping of the inferior anterior body aspects. C6 and C7 exhibit changes indicative of total destruction of the disc between them, with porosity and bone-on-bone articulation, as well as slight osteophytic lipping. T2-T5 display porosity of the articular facets, most extreme between T3 and T4 where there is lipping also. The changes are particularly pronounced on the right side of the column. T11 displays a moderate osteophyte on the left inferior body, with a small one on the right inferior body. T12 exhibits compression of the right side of the body, with moderate osteophytic lipping around the right inferior aspect. The articular facets also display porosity and lipping. L4 and L5 have communicating osteophytes, slight on the right side, and moderate on the left.

Developmental: The left tibia and fibula exhibit osseous bone spiculations at the distal end of their interosseous margins.

The sacrum is unevenly formed, with the ala of the right first sacral vertebra located much inferiorly to the left. This developmental anomaly may have contributed to the osteoarthritic changes of the spine.

### **Burial 44**

*Burial:* Extended on back, arms crossed over abdomen, right above left, right hand wrapped around left elbow, head SW.

Age: 16 to 22 years(late fusing epiphyses and pubic symphysis).

Sex: Female.

Inventory: Complete from C3 down except for feet below calcanei.

*Pathology*: *Infection*: Both tibiae display slight, striated and healing (sclerotic) periostitis on the distal halves of the medial crests. Both fibulae display thickening and sclerotic layers of new bone, lumpy but remodeled, with venous impressions, on posterior aspects of shafts.

Arthritis: Bodies of articulating T12 and L1 display slight porotic destruction with slight lipping.

## **Burial 46**

Burial: Extended on back, left arm across abdomen, head W.

Age: 25 to 35 years (auricular surface, dental wear).

Sex: Male.

Inventory: Complete but for parts of skull, left half of mandible, left hip, left proximal femur and right lower arm.

*Pathology: Dental: Right hemi-mandible;* teeth show slight to moderate wear, slight calculus on posterior teeth, moderate calculus on anterior teeth. Two hypoplastic line on canine. No alveolar resorption or other disease present.

*Infection*: Both femora display slight striated periosteal new bone along the posterior aspects. Left tibia has slight striated periosteal new bone over the anterior shaft aspect, more pronounced on the medial aspect.

Both fibulae are slightly thickened, with striated periosteal new bone covering the posterior crests.

Burial: Extended on back, arm position unknown, head W.

Age: Adult.

Sex: Female.

Inventory: Right and left lower legs and feet.

*Pathology: Trauma:* One proximal foot phalange has a fracture through one of the condyles of the distal articular surface. The fracture is healed, but there are resorptive changes to the peri-articular surface, with porosity and sclerotic new bone suggesting active infection at the time of death.

*Infection:* Both tibiae and fibulae are grossly deformed by sclerotic new bone, the lefts even more so than the rights. The tibiae are thickened and misshapen particularly at the distal ends, where patches of woven periosteal new bone can be seen on the medial aspects. Bony spicules occur on all of the crests of the bones, and vessel impressions are evident. This extent of periosteal inflammatory deposition is indicative of a chronic systemic disease.

Arthritis: The right tibiae has slight lipping around both proximal and distal articular facets. The left tibia has lipping around the fibular facet.

### **Burial 50**

Burial: Head SW, no other information.

Age: Adult.

Sex: Female.

Inventory: Right humerus and scapula and right olecranon.

Pathology: Arthritis: Very slight lipping around anterior head articulation.

*Developmental:* The distal extent of the deltoid tuberosity and its lateral limit exhibit some sclerotic bone formation, likely the result of muscle stress on the bone.

Extension of the glenoid fossa is seen on the postero-inferior aspect, perhaps the result of habitual hyper-extension of the limb.

## Burial 52

Burial: Extended on back, head SW.

Age: 35 to 45 years (dental wear).

Sex: Female.

Inventory: Mandible, C2 to T3, ossified pharyngeal cartilage.

*Pathology: Dental:* Attrition is severe. The left M1 is lost antemortem, and the remnants of an abscess can be seen although the socket is remodeled. Alveolar resorption starts here and extends to the left M2. AR is present around right M2 also, but there is no obvious disease. Right M1 exhibits an enamel fracture of the distal aspect. Calculus is extremely heavy. Both canines are present in the bone, but never erupted in life. The left canine exhibits both hypoplastic pits and lines. Some tooth rotation is observed. Both M2s have third lingual roots.

*Arthritis*: C5 has slight porotic destruction of the inferior body. C6 exhibits slight porosity of the superior body, and slight porosity and osteophyte formation of the inferior body aspect. T2 has slight lipping of the inferior body aspect.

*Burial:* Extended on back, arms crossed over abdomen, left over right, hands resting on ilia, headE. *Age:* 40 to 60 years (pubic symphysis and auricular surface morphology, cranial sutures, dental wear). *Sex:* Female.

Inventory: Complete skeleton.

*Pathology: Dental: Maxilla:* Teeth are moderate to extremely worn, and unevenly so. There are many antemortem enamel fractures. Calculus is moderate on right posterior arcade and slight elsewhere. The right PM1 has a periapical abscess that has resulted in some alveolar resorption. The right I2 is peg-shaped and tiny. The left I2 is absent congenitally. The space left by this tooth has allowed for disto-buccal rotation of the PM1. There are no caries and no alveolar resorption (except in the area of the abscess). Two slight hypoplastic lines are seen on the right canine. *Mandible:* Similar in wear and enamel fractures to the maxilla. There is more calculus on the anterior teeth, labial aspect. Both canines are rotated mesially, with sever alveolar resorption due to extensive calculus. The left M1 is worn to exposure of the pulp canal, with a small abscess around the distal root and alveolar resorption in the area. Woven periosteal new bone is extensive on the mandible in that area (see below). No caries and no hypoplasia. Occlusion is edge to edge bite. *Trauma:* There is a 1 cm. nodule of bone surrounded by a slight depression on the mid-posterior aspect of the left parietal.

T12 exhibits Schmorl's nodes on both superior and inferior body.

*Infection:* the mandible exhibits slight woven periosteal new bone, with some sclerotic patches on the lateral aspect of the body from the canine posterior to the M3. It is likely a diffuse infection associated with the abscess of the M1. The right medial body has a patch of similar bone change in the mylohyoid groove, which is woven and active.

*Arthritis:* The C2 has slight lipping of the inferior aspect of the dens facet. The C3 to C7 vertebrae all exhibit slight to moderate porosity of both body aspects with subchondral pitting. Slight osteophytic lipping exists in all areas as well. T2 and T3 have moderate lipping of the tubercle facets. T4 to T12 continue to show tubercle facet lipping. Small osteophytes occur on the centers of the anterior bodies, both inferior and superior. T123 is most severely affected, but it is still moderate. T4 and T5 exhibit slight porosity of the articular facets. L1 and L3 to L5 exhibit porotic breakdown of the superior anterior body aspects with slight to moderate osteophyte formation. L1 is most severely affected. Considering the age of this individual, the arthritis changes to the spine are not at all severe.

The right mandibular condyle is quite flattened and lipped from temporomandibular joint disease. The left is only slightly affected.

The right scapula exhibits slight lipping around the posterior rim.

The right humerus has porosity of the head extending on to the lesser tuberosity with some very slight lipping around the head.

The left radius has slight lipping around the medial aspect of the tuberosity.

The sacro-iliac joints exhibit lipping around the superior and inferior extents, with extreme porosity of the auricular surfaces.

Both femora display lipping around the medial aspect of the distal articular surface.

The right patella has slight lipping around the medial facet, and a circumscribed area of porosity on the superior part of the inter-facet ridge.

The right tibia has slight lipping around the proximal articular surfaces.

Most of the ribs exhibit severe lipping around the tubercle articular facets.

Metabolic: Almost all of the ribs display calcification of the costal cartilage, which is quite extensive.

Dystrophic calcification is also seen in the area of the kidneys, where tubular portions of calcified materials were

recovered while excavating. The opportunity to view the calcifications *in situ* suggests that these are portions of the ureters of the individual.

These two examples of dystrophic calcification are likely age related.

*Developmental:* The fifth metacarpals exhibit bilateral thickening and lateral angular deformities at midshaft. The palmar surfaces exhibit small bone nodules. There is no infection evident. They appear to have been fractured and healed, but the bilateral nature of the changes makes this unlikely. Perhaps the changes are occupationally related.

The left femur has a bony exostosis extending superiorly from the greater trochanter.

The patellae, calcanei and styloid processes of the fifth metatarsals all display moderate spurring.

## **Burial 56**

Burial: Extended on back, arm position unknown, head SE.

Age: Adult.

Sex: Female.

Inventory: Right humerus and scapula, some fragments of right ribs, and thoracics, hyoid horns.

Pathology: Arthritis: The humerus displays slight lipping around the lateral condyle articular surface.

The clavicle and scapula exhibit porosity, lipping and slight eburnation at the acromial articulation.

A couple of vertebrae display slight pitting and moderate lipping of the demi-facets.

All rib heads and tubercle facets have slight porosity and moderate lipping. The tubercles are more affected than the heads, and the lower ribs more affected than the upper.

Developmental: The lateral epicondyle of the humerus has a small tubercle projecting inferiorly and anteriorly.

## **Burial 58**

*Burial:* Extended on back, arms crossed over abdomen, left above right, head W. Individual had headstones on either side of the skull, and a footstone. Likely buried in a coffin (feet fallen onto tibiae during decomposition, and nails present in burial).

Age: 30 to 45 years (pubic symphysis, auricular surface and sternal rib end morphology, cranial suture closure, dental wear).

Sex: Male.

Inventory: Skeleton complete.

*Pathology: Dental: Maxilla:* General alveolar resorption and ubiquitous moderate calculus. Attrition is moderate to extreme, and uneven, the lingual aspects of the molars being more worn than the buccal. Enamel fractures are seen on left I2, left C and right PM2. Left PM2 is rotated buccomesially. No caries and no abscesses.

*Mandible:* General alveolar resorption, quite pronounced around molars. Calculus is moderate and ubiquitous. Wear is moderate to extreme, and uneven, the buccal aspects of the molars being more worn. An abscess is seen perforating the socket of the left PM2. A large occlusal caries is seen on left M1, with a concomitant periapical abscess that has spread to involve the alveolus around left M2 and M3 as well. The right M2 was lost ante-mortem, and the crown of the right M1 is totally worn away. Some rotation and tooth movement has occurred. The teeth in occlusion exhibit a severe overbite.

Trauma: T6 and T7 display small Schmorl's nodes. T8 to T12 display Schmorl's nodes also, though larger.

Infection: The right tibia exhibits thickening and sclerotic new bone over the distal two thirds of the bone.

The right and left fibulae exhibit thickening by periosteal new bone deposition, which is sclerotic, but covered by circumscribed areas of woven new bone on the posterior aspect.

The left tibia exhibits woven new bone over the distal end.

*Arthritis:* C1 and C2 display moderate lipping of the dens and its facet. C4, C5 and C6 exhibit progressively worse destruction of the bodies with porosity, pitting and slight lipping, indicating disc destruction. C6 and C7 exhibit communicating lesions of the bodies, which on C6 appear almost lytic, smooth-walled on C7. It is difficult to discern whether these are infectious lesions, or gross porotic changes with post-mortem damage. L1 exhibits slight porosity and lipping of the inferior body. L4 and L5 display gross arthritic changes as a result of spondylolysis, spondylolysthesis, and absence of some vertebral parts (see developmental below).

The left temporomandibular joint exhibits advanced TMJ disease. The condyle is largely resorbed, with sclerotic new bone partially filling in the mandibular fossa. A localized area of porosity and pitting is seen anterior to the fossa.

Slight arthritic lipping is noted around the articular facets of the right scapula, right humerus, and the articulating facets of the right calcaneus and cuboid.

The left clavicle displays moderate arthritic pitting of the lateral articular facet.

Both right and left trapezium-first metacarpal articulating surfaces exhibit moderate osteoarthritic lipping. This type of bilateral arthritic change suggests habitual manipulation of the joint, and is perhaps occupationally related.

*Developmental*: L4 has a spondylolysis with spondylolysthesis. The unfused arch actually articulates with the inferior articular facets of L3, as well as its spinous process, while no longer articulating with the body of L4. The inferior body aspect is porotic, slight lipping exists on the left side, with gross osteophytic buttressing of the right side, as a result of the body's attempt to halt the anterior slippage of the vertebral body. The L5 displays absence of the left inferior articular facet, with corresponding absence of the left S1 superior articular facet. The unilateral absence of the articular facets combined with the changes to L4 has resulted in moderate to gross porosity and lipping of the superior body.

### **Burial 59**

*Burial:* Extended on back, right arm over abdomen, with left arm above right and hand wrapped around right humerus, head direction unknown.

Age: 35 to 50 years (pubic symphysis, auricular surface and sternal rib end morphology).

Sex: Female.

*Inventory*: Right arm with scapula and medial clavicle, left lower arm, thorax, pelvic girdle and proximal right femur, 2 loose teeth only.

*Pathology: Dental:* The left mandibular M2 and M3 are present. There is very slight wear on M2 and moderate calculus on both teeth.

Trauma: A right mid-thoracic rib exhibits a well healed fracture just anterior to the curvature.

The left 10th rib exhibits a well healed fracture c. 70 mm from the head where the curvature begins.

Schmorl's nodes are ubiquitous in the spinal column.

*Metabolic:* The thoracic spine is affected by osteopenia and osteoporosis. The cortical bone is spongy in appearance. The osteoporotic changes are also seen in the lumbars, although there is a lack of osteopenia there.

*Arthritis:* Osteophytic lipping is slight on all thoracics, most severe on T3 to T7. T4 to T8 exhibit slight porosity and lipping of the diarthrodial joints. The demifacets and tubercle facets are also porotic and lipped. The lumbars display slight lipping of the superior bodies of 2, 4 and 5. There is slight pitting and lipping of the diarthrodial joints of L2 and L3.

The right humerus exhibits slight lipping around the anterior proximal articular facet.

The left ulna displays slight lipping of the medial coronoid process articular surface, and the radial fossa articular surface. The right and left hips exhibit porosity and lipping around the superconterior acetabulum.

The sternal articulations for the first ribs are slightly lipped.

*Developmental:* The 5th metacarpals exhibit roughened tuberosities for muscle attachment (Palmar Interossei) on the palmar surfaces, extending from midshaft to just proximal to the distal articular surface. The right is more pronounced than the left.

The right hip exhibits large smooth walled pitting of the ischial tuberosity ("Weaver's Bottom").

## Burial 60

Burial: Extended on back, arms crossed over abdomen, right above left, head W.

Age: 18 to 23 years (late fusing epiphyses and dental wear).

Sex: Female.

Inventory: Complete to knees.

*Pathology*: *Dental*: Slight wear and calculus on both arcades. Supernumerary tooth posterior to maxillary left I2. Small enamel fractures of the lower anterior dentition, with anterior crowding. left maxillary canine has a slight hypoplastic line.

*Arthritis*: T3 inferior articular facets display small subchondral defects in their centres. T4 displays the same as T3, but the right inferior articular facet is more porotic and displays slight lipping around facet.

## Burial 61

Burial: Extended on back, head W.

Age: Adult.

Sex: Unknown.

*Inventory*: Right distal half of tibia and fibula, right talus, calcaneus and intermediate cuneiform, left distal tibia and mostly complete fibula.

*Pathology: Infection:* The right tibia displays moderate sclerotic new bone which is striated on the medial and lateral aspects of the shaft. The shaft displays irregular thickening.

The right fibula exhibits slight, striated sclerotic new bone between the medial and posterior crests. Bone spicules are seen projecting super-medially from the distal extent of the anterior crest.

The left tibia has irregular thickening of the distal shaft. The posterior crest is extremely thickened by patchy deposits of plaque-like sclerotic new bone.

The left fibula exhibits irregular deposition of sclerotic plaque-like new bone, resulting in thickening of the entire shaft.

# Burial 63

*Burial:* Extended on back, arms crossed over abdomen, left above right, head SW. Stone grave markers on either side of the head, and jaw is dropped on chest (covered grave? coffin?).

*Age*: 18 to 25 years (late fusing epiphyses, dental wear, sternal rib end) *Sex*: Male.

Inventory: Complete except for feet.

*Pathology: Dental:* Slight wear and calculus. Antemortem loss of maxillary PM 1 right, with small healing abscess in socket. Antemortem loss of mandibular right I2. Rotation of maxillary I2s (mesio-labially), and mandibular left I1 distolingually.

*Trauma:* Right elbow, olecranon process and fossa are misshapen and porotic and lipped. Radius is also lipped. Appears to be arthritic response to blunt force trauma to the elbow some years prior to death.

*Infection*: Right palatine displays an area of active periosteal woven bone which can also be seen on the inner nasal cavity surface, and crossing the posterior mid-palatine suture.

Tibiae both display obvious anterior bowing, but no obvious periosteal involvement. Periosteal new bone is seen on the posterior aspects, which are thickened, striated and sclerotic, healed and moderate.

## Burial 64

Burial: Extended on back, head W.

Age: Adult.

Sex: Female.

*Inventory*: Incomplete left tibia and fibula with some left foot bones, incomplete right tibia and fibula, right foot (mostly complete).

Pathology: Arthritis: The right talus displays pitting of the postero-lateral edge of the tibial facet.

The right calcaneus has a localized area of pitting on the postero-medial quadrant of the talar articular surface.

Developmental: Both 1st metatarsals exhibit squatting facets on the disto-dorsal aspect, just proximal to the articular facet.

## Burial 65

*Burial:* Extended on back, arms along side of body. Head N. This individual was in a partially built grave, with an existing wall forming the west limit of the grave, marble slabs plus stones forming the east limit, and broken roof tiles forming a covering for the grave.

*Age:* 30 to 50 years (pubic symphysis and auricular surface morphology, cranial suture closure, dental wear). *Sex:* Male.

Inventory: Skeleton complete except for both legs.

*Pathology: Dental: Maxilla:* Wear is extreme. First and second molars on both sides lost antemortem, with extensive alveolar resorption and total remodeling of the sockets. The right M3 is congenitally absent or lost antemortem. Calculus is slight on remaining teeth. No active caries or abscesses. Shallow interproximal grooves are seen on the dentine of the left I2 and C suggesting habitual insertion of an implement in that area (note that there is no abscess in the area, a common reason for objects to be inserted between teeth to relieve pressure from pus build-up and pain). *Mandible:* Wear is extreme, though less so on molars which have lost their occluding teeth. There is generalized slight calculus and alveolar resorption. The left PM2 and M1 were lost antemortem, with sockets totally remodeled. No active disease seen.

*Arthritis:* The C1 exhibits slight lipping around the superior articular facets. The articulation between the dens and facet on C1 and C2 is lipped and spurred. Both body aspects of C3 are porotic. Disc destruction between C5 and C6 has left the bodies moderately to grossly porotic, with slight lipping. The T5 has slight porosity of right superior articular facet. T10 exhibits slight lipping of the superior anterior body. L4 and L5 exhibit similar changes.

The left clavicle shows slight porotic changes to the medial end.

The right humerus has slight lipping around the head.

The left ulna displays an area of circumscribed porosity and lipping around the coronoid process.

The left radius has slight lipping around the distal articular surface.

The right scapula exhibits slight lipping around the inferior glenoid fossa.

Two right ribs exhibit slight lipping around the tubercle articular facets.

The left hip displays quite extensive arthritic changes to the acetabulum, with lipping around it and new bone surrounding the articular surface within the acetabulum itself.

Developmental: The right ulna has moderate spurring of the dorsal part of the olecranon.

## **Burial 66**

*Burial:* Extended on back, right arm flexed with hand over manubrium, left arm flexed over body with hand over right wrist, head NW.

Age: 20 to 30 years (late fusing epiphyses, pubic symphysis, auricular surface).

Sex: Female.

Inventory: Complete from C3 distally, except for left humerus and some toes.

*Pathology: Infection:* Both tibiae display slight healed, striated sclerotic new bone along the medial shaft. Both fibulae display moderate, healed, striated sclerotic new bone along posterior shafts.

*Arthritis*: Left hip displays slight lipping around inferior acetabular articular surface. Right femur has slight lipping around distal articular surface, medial and anterior condyles. Right elbow displays lipping around the distal humeral and proximal radial surfaces - slight. Left femur has slight lipping around medial condyle articular facet. Left ulna has slight lipping around olecranon and coronoid process articular facets. Both tibiae display slight lipping around the proximal medial articular facets.

*Developmental:* Right clavicle is much shorter and straighter than the left - perhaps fractured at one time, or a morphological variation? Fibular proximal heads are much reduced in size. L5 displays a bilateral lumbosacralization with well-developed facets and no fusion.

## **Burial 68**

Burial: Extended on back. right arm over abdomen, left hand in pelvis. Head NW.

Age: 45 to 60 years (pubic symphysis and auricular surface morphology, cranial suture closure, dental wear).

Sex: Female.

Inventory: Complete except for right foot and part of left hand.

*Pathology: Dental: Maxilla*: Attrition and calculus are extreme. The right PM2 and M1 have been lost antemortem, with residual signs of abscessing. The right PM1 is worn down to a root stub only, and a periapical abscess has perforated the maxilla. The left M1 is similarly affected, but the abscess is gross, leaving the buccal roots exposed. Small interproximal caries exist on the mesial aspect of the right canine, the distal aspect of the right I2, the mesial aspect of the left canine, the distal aspect of the left M1, and the mesial aspect of the left M2. Two large hypoplastic lines are seen on the left canine. *Mandible:* Wear is extreme, calculus moderate. No caries, hypoplasia or abscesses present, but alveolar resorption is severe, particularly around the molars. Some enamel fractures and tooth rotation are seen in both arcades. Occlusion is good.

Trauma: 1 upper thoracic rib exhibits a well healed fracture at midshaft.

The right tibia has a small crush fracture on the lateral condyle articular facet on the postero-medial border. The depression is slight, and there is some concomitant peri-articular lipping. A shallow Schmorl's node is seen on the inferior aspect of T6. T7 has large Schmorl's nodes on both body aspects. Large nodes are seen on both body aspects of T8 and T9. T10 has moderate Schmorl's nodes on both body aspects. T11 exhibits a huge Schmorl's node of the inferior body aspect. Schmorl's nodes are also seen on both aspects of T12, and the superior body of L1. L2 to L4 display moderate Schmorl's nodes.

*Infection:* the left maxilla exhibits a growth just inferior to the orbit. It is approximately 10mm in diameter, and is protruding. It is hollowed and covered in smooth bone to the edges that are pitted and porotic. It does not appear to communicate with the maxillary sinus. It is suggested that this is a walled-off abscess of some description.

The right tibia shows gross periosteal new bone and osteitis. It is most dense on the proximal medial surface. The lateral aspect of the proximal end displays a circumscribed area of thick sclerotic and striated new bone, which shows vessel impressions. The area of the bone just medial to the nutrient foramen shows a localized "trough" of normal cortex, surrounded by bone spicules and periosteal reaction. This may represent a localized reaction to trauma and infection, or may simply be a different expression of the disease process seen on the remainder of the bone. The right fibula exhibits some localized areas of sclerotic new bone on the distal end, anterior and lateral crests. The sclerotic bone is very thick along the lateral crest, which exhibits vessel impressions. The left tibia exhibits thickened sclerotic new bone on the postero-proximal aspect, with vessel impressions. There is some localized striated periosteal bone in the area also. The left fibula exhibits thick osteitis and periostitis, mostly sclerotic, but with some plaques and striated areas. The anterior aspect displays vessel impressions.

Arthritis: The dens articulation on both C1 and C2 is lipped and distorted. A very large osteophyte communicates between C3 and C4, which was fused by cartilage, and there is evidence of disc damage. C5 and C6 both have slight lipping of the superior bodies, with no disc degeneration. The T3 has slight lipping of the right superior body, and moderate lipping of the inferior body with porosity of the right side. T4 exhibits slight lipping of the superior body and moderate lipping and porosity of the inferior body. The spinous process displays a large bony growth extending inferiorly from the tip. All of the thoracics exhibit slight lipping around the tubercle articular facets, and slight porosity of the demi-facets. The T5 shows slight lipping around the superior body and a moderate osteophyte extending from the right inferior body aspect, with porosity around the inferior rim. T6 has slight lipping around the superior and inferior body aspects, with moderate porosity of the left inferior body. T7 has slight lipping on the right side of both body aspects, with slight porosity on the inferior aspect. A very large articulating osteophyte is seen on the right side of T8 and T9. Pitting due to disc degeneration is extreme. Slight lipping is also seen on the left body aspects. T10 has slight lipping on the right side of both aspects. The left transverse process has an exostosis extending inferiorly. The inferior articular facets are slightly porotic, and bones spicules are seen in the spinal canal. The T11 exhibits slight lipping of the right inferior body aspect, and a large osteophyte of the left inferior body. Extensive disc degeneration and porosity is evident in the area. The demi-facet is grossly lipped. There is slight lipping of the superior body of T12. An enormous osteophyte is seen between T12 and L1 on the right side, which is communicating, but not yet fused. The disc space is preserved, and there is no evidence of degeneration. L2 to L5 display increasingly larger osteophytes on the right sides of the bodies. Severe disc degeneration is seen posterior to the osteophytes. Small bone spicules are seen on the anterior aspects of the bodies of L2, L3 and L5. Huge osteophytes that are larger on the right than on the left are seen articulating between L5 and S1. Cavities and porosity are visible where the disc has degenerated between the two vertebrae on the anterior aspect.

The temporomandibular joints exhibit slight porosity of the condylar articular surfaces.

Both clavicles display moderate porosity of the medial articular surfaces.

The left shoulder joint exhibits slight lipping around the humeral head and glenoid fossa, posterior.

The left and right radius and ulna display slight lipping around the distal articular surfaces.

The right ribs show lipping of the tubercle facet, 2 are grossly affected, with bone lips extending inferiorly.

The sacrum exhibits slight lipping of the inferior extent of the right auricular surface with some porosity of the surface itself.

The right and left femora have slight porosity and lipping of the supero-posterior edge of the lateral condylar articular facets.

The right tibia has slight lipping around the fibular articular facet, and the distal articular surface.

The right fibula has slight lipping around both proximal and distal articular facets.

The left tibia exhibits slight lipping around all articular facets.

The left fibula has slight lipping around its proximal articular surface.

Both patellae have lipping around the lateral articular surfaces.

Developmental: The foramen magnum exhibits a small "fold" of bone on the anterior edge.

The L1 has a lumbar rib.

The first sacral vertebra exhibits a complete spina bifida.

The right hip shows a phalange of bone on the anterior inferior iliac spine where the Rectus Femoris attaches. Increased vascularity is seen on the lateral aspect of the iliac blade.

The disto-posterior aspects of the tibiae exhibit a deep groove and a facet at the attachment of the Tibialis Posterior ligaments on the medial malleoli.

Other: The skull is extremely thin, both diplöe and cortex (which is almost non-existent).

# Burial 69

Burial: Extended on back, right hand flexed up onto chest. Head NE.

*Age:* 30 to 50 years (cranial sutures, pubic symphysis, auricular surface and sternal rib end morphology, dental wear). *Sex:* Male.

*Inventory*: Complete except for left lower arm and hand, part of right hand, lumbar vertebrae and sacrum, right Os coxae, and left patella.

*Pathology: Dental: Maxilla:* Alveolar resorption and wear are extreme. Calculus is ubiquitous and moderate to severe. The left I2 crown is destroyed by caries, with a periapical abscess. The left PM1 is similarly affected, with only the root remaining. The left PM2 was lost many years antemortem, and the socket is entirely remodeled. The left M3 is congenitally absent. The right I2 was lost antemortem, with an abscess still visible perforating the alveolus at the root apex. The right PM2, M1 and M2 have been lost antemortem. An abscess is seen around the roots of right PM1 and PM2. The sockets of M1 and M2 are remodeled. *Mandible:* Attrition is extreme and uneven on some teeth. Alveolar resorption is ubiquitous. Calculus is moderate to extreme, being more severe on teeth where the occlusal match had been lost antemortem. Enamel fractures are seen on the right I2, left PM2 and left M1. The right M2 was lost postmortem, but a lot of resorption and the remains of an abscess are present. Some tooth rotation is seen in both arcades, specifically in teeth beside those that have been lost antemortem.

*Arthritis:* The C5 exhibits slight porosity of the body inferiorly. The T2 displays a small osteophyte protruding superiorly from the left superior body. T3 and T4 show extreme pitting and lipping of the right articular facets, with the lefts being less severely affected. T6 displays lipping of the left rib tubercle articular facet. T9 exhibits rib tubercle articular facets that are severely porotic and lipped. T11 has a moderate osteophyte protruding superiorly from the left superior body.

The sternum displays slight lipping of the 5th and 6th costal notches, bilaterally.

A few lower ribs exhibit moderate to extreme lipping of the tubercle articular facets, corresponding to those vertebrae noted above.

The right ulna shows slight lipping around the entire proximal articular surface.

The right tibia displays a circumscribed area of porosity (ca. 2 mm in diameter) in the centre of the proximal lateral articular facet.

The right fifth metatarsal shows slight porosity of the distal articular surface.

The right TMJ exhibits pronounced disease. The condylar fossa is filled with sclerotic bone, and area of porotic bone exists on the anterior tubercle, and the condyle is resorbed and flattened.

Developmental: A porotic articular facet exists on the lesser tuberosity of the left humerus.

Spiculation is seen on the medio-dorsal aspect of the proximal right ulna.

The left ischial tuberosity exhibits roughening and slight spiculation.

The right fourth metatarsal shows an extension of the distal articular facet to the dorso-medial aspect. This is suggestive of habitual hyperdorsiflexion of the proximal phalange.

The left navicular exhibits an articular surface for a sesamoid bone on the plantar surface (although no articulating bone was recovered).

The left first distal foot phalange displays spiculation of the medial aspect, perhaps due to habitual, or slight single event trauma.

# Burial 71

Burial: Extended on back, head SE.

Age: Adult.

Sex: Female.

Inventory: Right fibula, partial right and left foot.

Pathology: Infection: The fibula exhibits thickened sclerotic new bone over the lateral crest, with visible venous impressions.

# Burial 76

Burial: Extended on back, head W.

Age: Adult.

Sex: Male.

Inventory: Right fibula and partial foot, left partial ankle and fifth metatarsal.

*Pathology: Infection:* The entire fibula is severely thickened by sclerotic new bone. The bone varies from being pitted to striated in appearance. All of the borders/crests of the bone display large tubercles of spiculated bone, which is also present around the peri-articular surface of the head. It would appear that this chronic inflammation caused some calcification into the muscles.

# Burial 77

Burial: Extended on back, right arm flexed over lower abdomen, head NE.

Age: 30 to 40 years (pubic symphysis and auricular surface morphology).

Sex: Female.

*Inventory:* Skeleton complete except for skull and mandible, C1 and C2, left distal humerus, lower arm and hand, and partial feet.

Pathology: Trauma: T6 to T9 display Schmorl's nodes.

All lumbars have Schmorl's nodes.

*Infection*: Left fibulae exhibits localized patches of slight healing periosteal new bone between interosseous and posterior crest.

*Arthritis*: T7 to T9 exhibit porosity and slight lipping of anterior bodies on both the inferior and superior aspects. L3 and L4 have slight porosity and lipping of the superior anterior bodies indicating anterior disc slippage.

*Developmental:* L5 displays spondylolysis with unilateral lumbosacralization (left side) that was joined by cartilage as opposed to a complete bony fusion.

*Burial:* Extended on back, right leg flexed at the knee so that the left knee is lying over the right knee. Right arm flexed over abdomen, left arm flexed up into chest area with the hand near the midshaft of the right humerus. Head SW. *Age:* 16 to 23 years (late fusing epiphyses).

Age: 16 to 23 years (late fusing epi

Sex: Female..

Inventory: Compete except for skull and left side of torso (in section).

Pathology: Infection: Both tibiae exhibit slight sclerotic new bone which is striated and visible on the medial aspect.

The right fibula exhibits moderate sclerotic new bone that is patchy and striated along the entire shaft from interosseous to lateral and posterior crests. A localized area of extreme swelling is seen at the distal end of the bone that is covered in striated new bone.

The left fibula shows the same general changes as the right, without the localized swelling at the distal end. Venous impressions are evident.

# Burial 79

Burial: Extended on back, left arm flexed over chest, right below it over abdomen, head SW.

Age: 20 to 30 years (pubic symphysis, dental wear).

Sex: Male.

Inventory: Complete to knees, minus left patella.

*Pathology: Dental: Maxilla:* Slight to moderate wear and moderate calculus. 1 small caries on occlusal surface of right M3. Few enamel fractures on anterior dentition. Slight rotation of PM1s bucco-distally. *Mandible:* Slight wear and moderate calculus. Three hypoplastic lines on each canine. Small occlusal caries on left M2, M3 and right M3.

Tumors: Button osteoma, ca. 8 mm in dia. on occipital, 2 cm superior to nuchal crest.

Hemopoietic: Barely discernible porotic hyperostosis on superior occipital and posterior parietals, healed.

Arthritis: Right lower ribs display slight lipping and porosity of the head and articular surfaces.

C3-C7 all display porotic breakdown of the superior anterior body aspect, with slight lipping. Inferior body of C6 is similarly affected. T5 to T12 are affected the same. L5 displays a moderate osteophyte protruding superiorly from the left body superior aspect (see developmental for more).

Developmental: Unfused lumbo-sacralization of L5, with large facet on the right.

Spina bifida of S1, arches are unfused with right arch superior to left.

Left femur has a bone exostosis located on the lateral shaft, proximal end, extends inferiorly for 11 mm. It is unclear if this is an ossification into muscle or the remains of a childhood greenstick fracture.

### Burial 80

Burial: Extended on back, arms down sides with hands over abdomen.

Age: 18 to 25 years (late fusing epiphyses, pubic symphysis).

Sex: Female.

Inventory: T8, distal to hips, proximal left femur.

*Pathology:* Arthritis: T8 has slight lipping of both body aspects anteriorly. L4 and L5 have very slight lipping of superior/anterior body aspects.

Burial: Extended on back, right arm over abdomen, left hand on pubic area, head NW.Age: 25 to 30 years (auricular surface)Sex: Male.Inventory: L4 and L5, hips and sacrum, right lower arm and left hand.Pathology: None seen.

## Burial 83

Burial: Extended on back, left hand over right elbow, right arm crossed over abdomen. Head SW.

Age: 40 to 60 years (pubic symphysis and auricular surface morphology).

Sex: Female.

Inventory: Right side of a skeleton from the C4 inferiorly, with left hand. Feet absent, few superior right ribs present.

*Pathology: Infection:* The right fibula exhibits sclerotic new bone with striations over its interosseous to lateral and posterior aspects. The right tibia displays similar but slighter changes of the medial aspect.

*Arthritis:* T9 to T11 exhibit slight lipping of the anterior bodies, beginning in the center of the T9 and moving around to the right side of the T11. There is no evidence of disc destruction and this may represent an ossification of ligament. The L4 and L5 display sight lipping of the anterior superiors bodies with porosity of the rims of the bodies.

# Burial 84

Burial: Extended on back, head W.
Age: Young adult.
Sex: Female.
Inventory: Right tibia and proximal fibula only.
Pathology: Infection: The tibia exhibits slight sclerotic, striated bone over the medial and lateral aspects of the entire shaft.

# **Burial 85A**

Burial: Extended on back, right arm over abdomen with left above and slightly flexed up over ribs, head SW.

Age: 20 to 30 years (pubic symphysis, sternal rib end, auricular surface and dental wear)

Sex: Female.

Inventory: Complete but for skull.

*Pathology: Dental:* Wear is slight, calculus is extreme. All incisors but right I2 lost antemortem with alveolar resorption. Alveolar resorption is ubiquitous around the arcade. Small occlusal caries on right M3.

*Arthritis*: 2 left mid ribs display moderate lipping of their tubercle articular facets. C1-C2 have slight lipping of dens and dens articular facet. T10 displays porotic breakdown of superior anterior body surface with slight lipping.

# Burial 86

Burial: Extended on back, head W.

Age: Adult.

Sex: Male.

Inventory: Fragment of distal right femur, right lower leg, left fibula, both feet.

Pathology: Infection: Both fibulae display thick sclerotic bone on the posterior aspect. Venous impressions are visible in the new bone.

*Burial:* Extended on back, arm position unknown, head W. *Age:* 25 to 35 years (dental wear, cranial suture closure).

Sex: Male.

*Inventory*: Skull and mandible, partial vertebral column, fragmentary ribs, clavicles, scapulae, right humerus, right femur and left tibia only.

*Pathology: Dental: Maxilla:* Attrition is moderate, alveolar resorption is absent except around lingual aspect of molars where it is extreme, calculus is slight. The left PM1 crown is destroyed by caries, with a concomitant large abscess. The right M2 is also destroyed by caries with periapical abscessing seen around the buccal roots, the disto-lingual root socket is remodeled, while a root stub remains in the mesio-buccal socket. *Mandible:* No calculus, slight alveolar resorption. The left canine is slightly rotated disto-lingually. The right canine never erupted but the tooth is visible in the mandible. Slight enamel fractures are seen on the right I1 and left I2. Wear is moderate but uneven. No caries or abscesses seen. Occlusion is good.

Developmental: Spina bifida of the spinous process of T12 is seen.

### Burial 89

Burial: Extended on back, head W.

Age: Adult.

Sex: Male?

Inventory: Lower legs and feet.

Pathology: Infection: The left tibia exhibits slight striated sclerotic new bone over the posterior aspect.

The fibulae both show localized areas of sclerotic new bone over the posterior shafts.

*Arthritis:* The left foot exhibits extensive arthritic changes. The lateral and intermediate cuneiforms are fused together, and the second metacarpal is fused to them. The medial cuneiform and third metacarpal are fused together. While not fused, interlocking osteophytes exist between the cuboid and fourth metatarsal, which exhibits a highly deformed proximal end. There is slight eburnation visible between the cuboid and 4th and 5th metatarsals. All of the aforementioned un-fused joint surfaces, including the cuneiform articular surface of the navicular, exhibit extensive spicule formation polyarticularly, and coalesced porosity and clearly present surface osteophytes on the articular surfaces. The talus and calcaneus are not affected. One proximal phalange (the only one present) exhibits a large resorptive lesion of the distal articular surface, which is also deformed and lipped. Radiographs of the foot show trabecular bone that is of normal density. They also reveal that the fused bones are continuous, with no separate surface between them, suggesting that the fusion was of lengthy duration. The arthritis appears to be inflammatory but for the lack of osteoporosis. The fusion of joint surfaces rarely occurs in simple degenerative arthritis. The fact that these changes are not bilateral again suggests that this is not an inflammatory condition. The localization of the changes more readily suggests arthritic changes as a sequela to trauma, although no evidence of the trauma could be seen either grossly or on x-ray.

Both patellae exhibit slight lipping around the articular surfaces.

# Area IX D N Burials

## Burial 22

Burial: No information.

Age: 7.5 to 9.5 years (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Skeleton missing from midshaft femora, distal.

*Pathology: Dental:* Wear is slight to moderate on deciduous dentition. Calculus is moderate on anterior dentition, slight on posterior deciduous teeth. No disease or hypoplasia is seen.

*Hemopoietic*: Moderate to severe cribra orbitalia is seen in the right orbit, with coalescing foramina and increased thickness.

Trauma: A few thoracic vertebrae exhibit sub-chondral defects of the centers of the inferior body aspects.

### Burial 23

*Burial:* Extended on back, arms crossed over abdomen, right over left, head W. Individual was in a grave with a headstone and a footstone. Two sealing stones were also seen over the body. An iron fibula was recovered. 3 iron tacks were recovered, 2 on the right tibia, and one on the left shoulder.

Age: 25 to 40 years (cranial suture closure, dental wear, pubic symphysis morphology, auricular surface morphology, sternal rib end metamorphosis).

Sex: Female.

Inventory: Complete skeleton.

*Pathology: Dental: Maxilla:* Wear is severe, calculus is severe, as is alveolar resorption. The left canine is lost antemortem, and there is a very large periapical abscess in that location, and around the root of the left PM1. Caries has destroyed the crown of the left M1 and there is a large abscess surrounding the tooth and perforating the bone at the root apex. The crown of the right PM1 is also destroyed by caries, with a periapical abscess seen. The right PM2 has an interstitial caries on the distal aspect, and a periapical abscess secondary to root exposure from the caries. The right M1 is lost antemortem, and the socket is remodeled. The right M2 has shifted mesially because of this lose. Two large hypoplastic lines are seen on the left mesial incisor. The M3s are congenitally absent. *Mandible*: Wear is moderate, likely due to many of the opposing teeth having been lost or diseased. Alveolar resorption is ubiquitous. Calculus is gross on the left side (similar to the maxilla), and slight on the right. There are a couple of enamel fractures, but no caries or abscesses. The M2s are absent, and appear to be congenitally so, as is the right M3.

Trauma: There is a crush fracture to the anterior body of L1, with no arthritic changes.

Infection: Both fibulae exhibit sclerotic periosteal new bone on the lateral crests, presenting as thick and lumpy - moderate.

Arthritis: The C1 and C2 show slight lipping of the dens and facet.

The right articular facets between T4 and T5, and T11 and T12 exhibit slight porosity and lipping.

L4 and L5 show very slight lipping of the superior anterior body aspect.

The left TMJ exhibits signs of arthritic change, and articulation of the condyle back onto the temporal bone - this may be a sequlae of the severe dental disease in the left side of the mouth.

The left third metacarpal and capitate articulation is porotic and deformed.

The right sacro-iliac joint exhibits arthritic changes in the form of porosity and lipping. This is not age-related, as it is not bilateral.

The left femur exhibits slight lipping around the inferior proximal articular surface.

The right knee exhibits arthritic changes in the form of localized porosity on the lateral condyles of the tibia and femur, and on the medial articular facet of the patella.

## **Burial 28**

Burial: Extended on back, right arm flexed upward and overlying left shoulder, left arm unknown, head W. Two iron tacks recovered from right ribs.

Age: 8 to 10 years (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Mostly complete skeleton, with some foot bones, and parts of the Os coxae missing.

*Pathology: Dental: Maxilla:* Mixed dentition exhibiting slight wear on deciduous and permanent teeth. Calculus is extreme on right side of arcade, non-existent on left. No caries or disease seen. *Mandible:* Mixed dentition, slight wear. Extreme calculus on right as maxilla. No disease. Three slight hypoplastic lines on each of the unerupted permanent canines.

*Hemopoietic*: Cribra orbitalia is present in both orbits. The right exhibits thickening and moderate coalescence of foramina. The right exhibits severe changes, with gross thickening and coalesced foramina.

### Burial 29

*Burial:* Extended on back, right hand on pelvis, left flexed across chest. Side slabs, head and foot stones, as well as a sealing stone over the feet remain of a stone built cist grave, disturbed by the burial of D IX 23. Head SE. An iron pin was found on the feet.

Age: 6 to 18 months (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Complete except for sternal body and some hand and foot bones.

Pathology: Dental: Teeth are in the process of erupting, very slight wear is seen, no disease.

Hemopoietic: Both orbits exhibit enlarged foramina with raised periosteum, indicating active cribra orbitalia that is slight.

*Infection*: The endosteal surfaces of the frontal (particularly the orbital plates), parietals, occipital and sphenoid wings is covered in diffuse bark-like periosteal new bone, and the "worm-eaten" sclerotic bone which has been seen in individuals in the Forum II cemetery. The changes are extreme and thickening is seen.

The anterior and posterior aspects of the left scapula near the glenoid fossa and on the lateral border are covered in thickened, raised woven periosteal new bone.

The distal right humerus is affected by bark-like periosteal woven bone, extending to the articular surface.

The head of the right ulna is similarly affected, covering the proximal third of the bone.

The right radius is affected the same, on the proximal quarter of the bone. The right elbow exhibits evidence of an active inflammatory process.

The right femur exhibits a localized are of active woven periosteal new bone on the proximal third of the bone, lateral aspect.

The right tibia, distal half, posterior aspect is similarly affected.

The right fibula is also affected in the same manner on the proximal third, medial aspect.

# Burial 31

*Burial:* Extended on back, arms flexed up into chest, right over left. Right foot flopped medially over left. The grave was stone lined (small stones, not slabs), and a footstone was still *in situ*. See additional partial burial found with this one below(31B).

Age: 20 to 30 years (late fusing epiphyses, dental wear, pubic symphysis morphology, auricular surface morphology,

sternal rib end metamorphosis).

Sex: Male.

Inventory: Complete skeleton.

*Pathology: Dental: Maxilla*: Slight wear and slight calculus are seen. A small enamel fracture is noted on the right M1 buccal aspect. The right PM1 is located on the palate, between the right I2 and canine, and lingual to them. It is rotated 90 deg. disto-lingually. *Mandible*: Wear and calculus are similar to maxilla. Enamel fractures are seen on left and right M1. An interstitial caries is seen on between the right M1 and M2, which is small. The right canine is rotated slightly mesio-labially. There is erosion of the cemento-enamel junction on the buccal aspects of the left M2 and M3 - this may have been mechanically induced.

*Infection*: The right first metatarsal, proximal and distal phalange exhibit gross osteomyelitic changes. Radiographs reveal an abscess in the center of the metatarsal, with a cloaca visible on the dorsal surface. Lytic foci are seen on the dorsal aspect, rimming both articular surfaces. The phalanges exhibit multiple smooth-walled lytic lesions, with little sclerotic reaction. The articular surfaces are affected. No changes are seen on the plantar surfaces of the bone. The radiographs reveal that the bone is also osteoporotic. This localized infection could be osteomyelitis from an infected wound, secondary to peripheral vascular disease from an ulcer, or may represent a case of infection with a mycotic or bacterial agent causing maduromycosis (that the infection is confined to a single toe makes this less likely).

*Arthritis*: T6 exhibits slight lipping of the anterior inferior body. T7 and T8 both show porosity and lipping of the inferior articular facets. T9 has lipping and porosity of both inferior and superior articular facets.

The left third rib exhibits slight lipping of the tubercle articulation.

Developmental: The sacrum exhibits a sacral hiatus that is open to mid-S3, and open between S1 and S2 (incomplete spina bifida).

The left hand has an extra large sesamoid bone (unknown where it articulated).

The right 4th metacarpal exhibits a thick bony ridge on the lateral aspect, for muscle attachment.

# Burial 31B

*Burial*: Unknown, found with burial 31. Age: 9 lunar months to birth. Inventory: Right femur only.

# Burial 33

Burial: Extended on back, right arm straight down side of body, legs slightly flexed at hips and knees, head SW.

Age: Birth to 6 months (dental calcification, diaphyseal length, epiphyseal union).

Inventory: Complete except for ischia and some hand and foot bones.

Pathology: Hemopoietic: Slight porosity of the lateral edge of the left eye orbit.

*Infection:* The center of the inner table of the occipital bone exhibits a periosteal lesion of woven new bone. This may not be the result of infection, rather, bone reaction to a subdural haematoma.

## Other Burials/Remains

# Forum II US 58

*Burial*: Disarticulated human and animal bone recovered from a stone built tomb. The remains represent a secondary interment that was disturbed after the Forum II cemetery went out of use.

Age: 30 to 34 years (auricular surface).

Sex: Male.

Inventory: Partial skeleton with many postmortem breaks of long bones.

*Pathology: Dental: Mandible:* The partial mandible exhibits moderate wear and slight to moderate calculus. The right I2 is displaced lingually so that it is lingual to the I1 and canine.

Arthritis: 1 thoracic body exhibits slight lipping of both aspects, with porosity of the superior.

## Forum V US 73

Burial: Disturbed disposal in a cistern, lying on water washed matrix.

Age: 35 to 45 years.

Sex: Male.

Inventory: Mandible, left humerus, partial right hip, right femur and tibia, left tibia and fibula.

*Pathology: Perimortem Trauma*: There is a 30 mm cut running from the anterior superior iliac crest towards the auricular surface. The direction of the sharp force trauma was lateral to medial, with bent bone seen on the iliac fossa edges of the cut, and slightly superior to inferior. The cut was made by a thin sharp blade. There is no healing.

There is a square (3 mm by 3mm) puncture wound at the posterior edge of the superior demi-face of the auricular surface. Bent bone occurs on the medial surface, and breakaway flakes are on the lateral surface. The direction of the blow was from the front and to the left of the individual. There is no healing.

Infection: The distal third, anterior aspect of the right femur exhibits sclerotic new bone that is striated.

The right tibia exhibits striated periosteal new bone on the midshaft, lateral aspect, and lateral to the tibial tuberosity. The proximal two thirds of the posterior aspect is heavily affected by thick striated sclerotic new bone.

The left tibia exhibits localized patches of thickened cortical bone on the lateral aspect at midshaft.

The left fibula exhibits changes similar to the left tibia on the midshaft from the interosseous to posterior and lateral crests, with venous impressions apparent.

Arthritis: The right and left tibiae exhibit slight lipping around the proximal articular surface.

Developmental. The left humerus exhibits extreme robusticity and roughening of the greater tubercle.

The greater trochanter of the right femur is extremely robust and deformed.

The right tibia exhibits a very robust attachment for the soleus muscle.

# Forum V US 253 (b)

*Burial*: Extended on back, hands in pelvis, head SW, and on a tile pillow. Grave structure composed of two house walls on the west and north, and reused architectural fragments on the south and east.

Age: 30 to 45 years.

Sex: Male.

Inventory: Complete except for some hand and foot bones.

Pathology: Dental: Maxilla: Attrition is moderate, and less where opposing teeth have been lost antemortem, There is slight calculus, and alveolar resorption is ubiquitous. The right I2 was fractured antemortem, and the root is extant.

There is a large interstitial caries between the left PM2 and left M1. An abscess has extended from this caries and the bone surrounding the tooth roots is resorbed. The infection affected the sinus (see below), and was severe and chronic. Three faint hypoplastic lines are seen on each canine. The left M3 is congenitally absent. *Mandible:* Attrition is moderate and calculus slight, although more extensive on the anterior teeth. Slight alveolar resorption is ubiquitous. The right I1 is fractured off antemortem, and the root remains in the bone. An interstitial caries between the left PM2 and the left M1 has led to the formation of a periapical abscess, with moderate loss of the alveolar bone. The right PM2 and M1 are lost antemortem. Two moderate hypoplastic lines are seen on each canine.

*Infection:* The interior aspect of the left maxillary sinus is nearly completely occluded by sclerotic bone. This chronic infective process was an extension of the abscess from the  $2^{nd}$  premolar and first molar on that side.

The left tibia exhibits slight, striated periosteal new bone along the entire medial shaft.

The left and right fibulae show localized areas of thickened periosteum, with bone spicules and venous impressions at midshaft, between the interosseous and anterior crest, and along the lateral crest just superior to midshaft.

The right tibia exhibits very slight, striated periosteal new bone along both the medial and lateral shaft aspects.

*Arthritis:* The C4 exhibits slight porosity and degeneration of the superior anterior body. There is moderate to sever porosity and lipping between C4 and C5, indicative of disc degeneration. Slight lipping and porosity are seen on the inferior/anterior body aspects of C5 and C6. C7 exhibits slight lipping and porosity on the superior, anterior body. The T4 displays slight porosity of the left inferior articular facet. T8 exhibits large Schmorl's nodes on each body aspect, deeper on the inferior aspect. The right side of the vertebral body is compressed, with moderate lipping apparent on both superior and inferior edges. T9 to T11 continue to exhibit lipping of the right body aspects, but without deformation of the vertebral bodies. All exhibit moderate Schmorl's nodes on both aspects of the bodies. T12 is lipped on the right side of the body, and periarticularly around the superior articular facet. L4 and L5 exhibit moderate to severe osteophytic lipping of both body aspects.

The left mandibular condyle exhibits slight periarticular lipping at the posterior aspect.

The right scapula shows slight periarticular lipping around the posterior glenoid fossa

The left humerus exhibits two localized areas of porosity on the lesser tubercle.

There is slight lipping between the radial head on the left radius and the radial notch on the left ulna.

The right humerus exhibits slight porosity on the lesser tubercle.

The left 1<sup>st</sup> metatarsal exhibits an area of localized porosity on the proximal articular surface which is indicative of cartilaginous degeneration.

Developmental: The Teres major attachment of the right humerus is a sulcus.

The left hip exhibits a bony exostosis, 6 mm in width, arising from the most superior aspect of the iliac crest, and extending downwards for12 mm (this could be traumatic in origin).