Human Life in Early Bronze Age I Jericho

A Study of the Fragmented Human Skeletal Remains from Tomb A61

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Abstract

This Honours research thesis takes an in-depth look at the human skeletal remains from an Early Bronze Age I Jericho tomb, excavated by Kathleen Kenyon in the 1950's. Tomb A61 contains highly fragmented and commingled human bones, and has remained unstudied until this year. A sample of the tomb has been analysed in order to study the demographics and health of the occupants. In doing so, it is not only the intention to create a picture of human life in Jericho at this time, but also tie the human skeletal remains back into the archaeology of Jericho, and the Southern Levant.

The Southern Levant in the Early Bronze Age I is a region undergoing socio-economic transition. The non-urban Chalcolithic period makes way for the fortified and walled settlements of the Early Bronze Age II. The impact of this transition on the populations of the Early Bronze Age I is so far understood from the archaeology of the architecture and artefacts from settlements and corresponding funerary structures. Yet there is little study of the human remains themselves, and the stories they can tell about the populations of the Early Bronze Age Southern Levant. This lack of study is just a branch of a greater problem, however, which is the little uniformity across the study of human remains on an international level. Issues include varying global approaches to ancient human remains in the 19th and 20th Centuries, as well as the compromised state of fragmented and commingled human remains.

This osteoarchaeological study of a tomb from Jericho, which is representative of the Early Bronze Age I Southern Levant, aims to contribute to these discussions and debates, whilst providing further published data for human skeletal remains for future research.

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1. Introduction

Ancient human remains have been of long-standing curiosity for humanity, whether for religious and cultural connection, or academic study. With the world interested in how people lived in the past, as well as how they died, the study of these remains was fated to grow (Buikstra & Beck, 2006, p. xiv). Osteoarchaeology allows the researcher to create a picture of the people by whom the artefacts, which we so intently study as archaeologists, were made. The results are demographic studies of the sex, age, variation, disease and/or injury of the individuals under examination (White & Folkens, 2005, p. 309). Such studies are crucial in obtaining information about a person's health in life, as well as the circumstances and ceremonies surrounding their death.

Yet, as archaeologists, we can go one step further. We desire to understand the way in which such population attributes reflected their lifestyle (Brothwell, 1981, p. i). We wish to recognise what changed, or rather remained constant, within the population of a particular place across time. Moreover, how these population changes may interplay with the landscape and artefacts that remain. An examination of the human remains, in conjunction with the archaeology, of the burial sites and associated settlements, may form a far more comprehensive understanding of past peoples (White & Folkens, 2005, p. 1).

Life and death in the Bronze Age Southern Levant has long been a topic of discussion in the academic world. There is extensive archaeology throughout the region, known not only from historical and biblical sources, but also from the apparent mounds, or tells, that scatter the landscape (Campbell & Green, 1995). The focus of excavations has tended more towards the pottery and grave goods present, as is the tradition of the region (Porter & Boutin, 2014). However, this is not uncommon due to the effective relative aging of a site using pottery typology (Porter & Boutin, 2014). Both grave goods and pottery have also been highly associated with dictating social stratification in life, as reflected in death and burial (Baker, 2012). In

more recent publications, researchers such as Baker (2006, 2012) have proposed that the commonalities between pottery and grave goods amongst burials can suggest a basic collection necessary for the burial of all people from a local population, rather than simply assessing social differentiation. However, the human remains appear infrequently examined or published for the archaeology of the Southern Levant (Porter & Boutin, 2014; Sheridan, 2017, p. 112). As Sheridan (2017:112-5) so eloquently states:

> "One might be tempted to think funerary structures were built for pots, not people."

This defines the initial gap in the literature that this thesis proposes to contribute information to: by providing osteological data on human remains from the Bronze Age Southern Levant, so as to assist in reconstructing the life stories of past peoples.

The Early Bronze Age I (EB I) has been of interest to scholars of the Southern Levant since the discoveries of the first 'urban' walled towns of the EB II (Harrison, 2012, pp. 629–30; Savage, Falconer, & Harrison, 2007, p. 285). What happened during the EB I to allow this transition from the non-urban Chalcolithic to these new urban centres? This very question has created a number of continuing interpretations, reappraisals and debates (Savage et al., 2007). Though determining changes to both the landscape and artefacts is key to understanding this transitional period, so is determining population changes. The most effective way to understand population changes is to analyse the human remains themselves; a study which, as discussed before, is not commonly undertaken or published. This is the other aspect in which this thesis will attempt to contribute to the literature: by contributing to a better understanding of both the people, and aspects of transition, for the EB I Southern Levant.

1.1. Premise

Jericho, or Tell es-Sultan, is a significant archaeological site in the Southern Levant. Having been occupied since at least the Pre-Pottery Neolithic A, the level of archaeology and history at this site is substantial (Garstang & Garstang, 1948, p. 56;

Kenyon, 1954, p. 103). Throughout the history of excavations, the focus has been on the pottery and architecture of the tell and tombs. The human remains found within the numerous tombs surrounding the tell, however, have only been researched in a limited number of publications (Blau, 2006; Brothwell, 1965; Lisowski, Ashton, & Ormerod, 1957). In these analyses, the human skeletal remains have either been from several tombs and time periods that have been pooled together and treated as a single population, or on tombs from a single time period in isolation.

The human remains from the EB I Jericho tomb, Tomb A61, will therefore serve as a case study. This case study will be used to contribute to the gaps in the literature, as discussed above, by asking the question:

What was human life like in Early Bronze Age I Jericho?

1.2. Objectives

It is the intention of this thesis to conduct an osteological assessment of a sample of the human skeletal remains from the EB I Jericho tomb; Tomb A61. To endeavour to answer the question outlined above, this osteological assessment should allow demographic and health profiles of the sample tomb occupants to be created.

By undertaking this assessment, it may also be possible to contribute to several other ongoing archaeological discussions and debates. These include:

- Comparing the findings from this EB I tomb to the findings from two Middle Bronze Age (MB) tombs; Tombs B35 and E1, from Jericho.
- Contributing evidence towards the changing interpretations about settlement patterns both at Jericho, and throughout the rest of Southern Levant, during the EB I.
- Assessing the importance and value of fragmented and commingled human skeletal remains in understanding past populations. Both for the archaeology of the EB I Southern Levant, as well as for the discipline of osteoarchaeology in general.

1.3. Chapter Synopses

Chapter 1 presents an overview of the area of study from which this thesis has been designed. This includes the premise, objectives and overall question being addressed in this thesis, regarding human life in EB I Jericho.

Chapter 2 will provide an introduction to both Jericho and the wider Southern Levant during the EB I. This will include exploring both the internal and external contexts of EB I Jericho, as well as the history of excavations and interpretations of the site. The last section will then discuss the current lack of literature when it comes to understanding human life in the EB I Southern Levant.

Chapter 3 then crosses over to the other half of the framework for this thesis, by discussing the nature of osteoarchaeology itself. The focus will be on the disconnected global development of the study, and the lack of uniformity that has resulted in the study and publication of human remains in archaeological contexts. Key debates within the study will also be addressed, focusing especially on the issues of fragmentation and commingling, which defines the state of Tomb A61.

Chapter 4 will then account the methodology undertaken for the osteological assessment of the human skeletal remains from Tomb A61.

Chapter 5 will then present the results of this osteological study of Tomb A61.

Chapter 6 will discuss the implications of the results presented in Chapter 5. This will outline what the evidence suggests about human life in EB I Jericho.

Chapter 7 will take one step further, and look at whether this information can contribute to several ongoing archaeological discussions and debates, as stated during the objectives. To do so this chapter is divided in three components. Firstly, how the EB I profile from Jericho compares to the osteological findings from MB Jericho, including any interpretations that can be made concerning changes to population and lifestyle. Secondly, how this information may be able to contribute as evidence towards the changing interpretations on settlement patterns at Jericho, as well as the surrounding region, during the EB I. Then finally, how this research has demonstrated the advantages and disadvantages of working with fragmented and commingled skeletal remains in the archaeological record.

Chapter 8 concludes the research and findings from this thesis, situating the results within the wider context of the EB I Southern Levant. To conclude, this chapter will then take a look at what directions future research can take.

2. Life and Death in the Early Bronze Age I Southern Levant

2.1. Introduction to the Early Bronze Age I Southern Levant

The Bronze Age in the Southern Levant is divided into the Early (EB), Middle (MB) and Late (LB) periods. The EB is again divided into what is commonly referred to as the EB I, II, III and IV/Intermediate (Sharon, 2014). In modern scholarship, the EB I period lasted throughout most of the 4th millennium BCE in the Southern Levant (Table 2.1). Current dates for the four major periods of the EB, beginning with the EB I, are often drawn from radiocarbon dating for strata of that period; strata most commonly identified from the ceramic typologies (Sharon, 2014, pp. 50–1). However, the radiocarbon dates utilised for defining periods by different scholars, are often obtained from different sites throughout the region. Another dating method is to calibrate the EB Levant with Pre-Dynastic and Dynastic Egypt, as the state respectively formed to the south of the Levant (Greenberg, 2014, p. 271). Table 2.1 demonstrates the subsequent variety of dates for the EB. Notably, Richard (2014), de Miroschedji (2014) and Sharon (2014) are all contributions within the one text on Levantine archaeology (Steiner & Killebrew, 2014). De Miroschedji (2014) continues to divide the EB I into three further identifiable sub-periods: the EB IA (c.3700-c.3400 BCE), the EB IB (c.3400-c.3200 BCE), and the Terminal EB IB (c.3200-c.3100 BCE).

Period (BCE*)	Fraser (2015)	Harrison (2012)	Richard (2014)	de Miroschedji (2014)	Sharon (2014)
EB I	3700 – 3000	3700 – 3100	3600 – 3100	c.3700 – c.3100	3900/3700 – 3200/3000
EB II	3000 – 2900	3100 – 2300	3100 – 2750	c.3100 – c.2900/2850	3200/3000 – 2850/2600
EB III	2900 – 2500		2750 – 2300	c.2900/2850 – c.2500/2400	2850/2600 – 2500/2300
EB IV/IB	2500 – 2000	2300 – 2000	2300 – 2000	c.2500/2400 – c.?	2500/2300 – 2200/1900

Table 2.1: Varying dates for the EB in the Southern Levant. *All dates are BCE.

The Chalcolithic period that led up to the EB I is characterised by semi-mobile, small dispersed settlements at the latter end of the lithic age (Harrison, 2012, p. 638). The EB II that then followed the EB I is renowned for being the era of the first 'urban cities', characterised by large, walled settlements (Harrison, 2012; Savage et al., 2007; Sharon, 2014). The EB I was therefore bracketed between these two vastly different archaeological periods. As a result, the EB I is often viewed as being a period of transition and uncertainty, drawing debates from the archaeological interpretation of the EB I Southern Levant (de Miroschedji, 2014; Greenberg, 2014; Richard, 2014). The archaeology has since focused on understanding the time, shape and development of this 'urbanism' that defines the EB II (Greenberg, 2014, p. 269; Philip, 2008; Savage et al., 2007).

The following sub-sections draw from current scholarship to discuss various aspects of life and death in the EB I Southern Levant, especially as a transitional period between the Chalcolithic and the EB II.

2.1.1. Settlement Patterns

Settlements in the early EB I were open and dispersed, mainly based along water sources, though with a tendency for mobility in the more arid regions (Greenberg 2014:270). Housing sizes and layout were varied, ranging from rounded residences, to rectilinear 'broadroom' houses which were supported by a pillar and connected to a courtyard (Greenberg 2014:270–2; Richard 2014:334). As the EB I continued, however, characteristics of the EB II began to appear (Harrison 2012:629). Toward the latter half of the EB I, some of these pillared broadrooms began to develop multiple rooms, and settlements began to establish more agglutinated housing within some suggestion of fortification. Some researchers argue that the latter symbolises the first urban settlements, prior to the EB II as is commonly accepted (Parr, 2000, p. 395). Nonetheless, more densely populated settlements began to appear, which grew in size by the end of the EB I (Richard, 2014, p. 334).

Looking at the preceding Chalcolithic period for context, the settlement patterns of the Chalcolithic have been described by Kafafi (2014:239) as being unwalled and dispersed. These settlements consisted of primarily rectilinear and

pillared broadroom houses built with no clear layout. Sites were primarily positioned along either the valley or permanent water sources on the plateau (Kafafi, 2014, pp. 238–9). Settlements were also pushed beyond these sources and into semi-arid regions, suggesting a level of mobility was present alongside these permanent settlements. This is supported by the use of cave dwellings throughout parts of the year (Kafafi, 2014, p. 238). As a well-researched case of this, Teleilat el-Ghassul presents a village formed of rectilinear houses and associated courtyards with the remains of daily activities (Kafafi, 2014, pp. 238–40). The houses are of variable sizes, without an apparent geographical pattern or preference for house sizes; in other words, no 'elite pattern'. This suggests that though no political organisation is evident, nor were the villages entirely egalitarian either (Banning, 2012, pp. 411–2; Rowan, 2014, p. 227).

These settlement patterns suggest continuity between the Chalcolithic and EB I, attributing to the difficulty in distinguishing the transition between the two periods. De Miroschedji (2014:308) does not share this interpretation, however, citing an abandonment of Chalcolithic sites in the early EB I in order to establish new sites. De Miroschedji (2014:308) suggests the locations of these fewer but larger settlements were focused on burial grounds previously used by 'semi-nomadic' populations. Site examples for this interpretation included Jericho and Bâb edh Dhrâ', as there is apparent evidence for the necropolis being used by several distinct groups of these 'semi-nomadic' pastoralists prior to sizeable settlement (de Miroschedji 2014:309). The main issue with this interpretation, however, is that Jericho at least shows evidence of occupation during the Chalcolithic (Garstang & Garstang, 1948, p. 55). Most scholars report a continuation of settlements into the EB I period, though accompanied by societal changes which shaped both existing and new settlements in preparation for 'urban development' (Greenberg, 2014; Harrison, 2012; Helms, Betts, & O'Tool, 1992; Kenyon, 1960b; Parr, 2000; Richard, 2014).

Richard (2014:335) surmises this interpretation succinctly:

"Such diversity usually defines a regionalised society, much like the preceding Chalcolithic. Unlike the latter (probably a chiefdom in political terms), however, growth in social

complexity and interregional exchange in the EB I eventuated in dramatic settlement pattern shifts and the virtual universal fortification of site by EB II."

To briefly revisit the lack of an 'elite pattern' in Chalcolithic settlements, this societal organisation plays into the larger debate regarding changing social organisation within the EB I. The EB I supposedly represented a transition from these Chalcolithic 'horizontal', or kinship based, hierarchies, to the vertical hierarchies of institutionalised social inequality that accompanied the urbanised EB II societies (Levy, 2014, p. 203; Philip, 2008, p. 165; Richard, 2014, p. 333). As mentioned earlier, the primary focus in the scholarship appears to be in unearthing the trend towards 'urban' culture in the Southern Levant. Population size, interregional exchange, and social and political organisation are all aspects of this analysis; the most dominating being when fortified or walled settlements began, and whether these walls were the key symbol of an 'urban' society in the Southern Levant (Philip, 2008; Savage et al., 2007). Greenberg (2014:272) also discusses the additional development of a shared ideology during the EB I, which focused on land, food production, community and 'trajectories to urbanism'. Whether fortified settlements appeared in the EB I, or not until EB II, is still in scholarly discussion (Greenberg, 2014; Richard, 2014; Savage et al., 2007). What is clear in the archaeology, is that the EB II is marked by a further reduction in the number of sites, but that these sites increase in size (Savage et al., 2007, p. 288). This leaves scholars like Greenberg (2014:272) to question whether some sites failed in this development of a shared ideology, whilst other sites thrived and entered the so-called 'urban' EB II period.

2.1.2. Subsistence Patterns

During the EB I, subsistence patterns indicated a combination of pastoralism, agriculture and horticulture. This involved the cultivation of cereals and legumes, olives, as well as the husbandry of cattle, ovicaprines and, to a degree, pigs (de Miroschedji, 2014, p. 308; Richard, 2014, p. 336). Richard (2014:336) suggests there was an increase in surplus during the EB I, which lead especially to an increase in

international exchange and metallurgy specialisation, ultimately driving an increase in social complexity. De Miroschedji (2014: 308) similarly considers whether the development of floodwater farming with ploughing increased the amount of arable land, which amplified productivity and sedentism. However, maintaining his theory on an interruption between the Chalcolithic and the EB I, de Miroschedji (2014: 308) also determines that this mixed agropastoral approach was new to the EB I.

By looking at the subsistence patterns of the Chalcolithic period, the agropastoral practices of the EB I appear to be a continuation from this earlier period, yet again. Cereals, legumes and olives, as well as cattle, ovicaprines and pigs on occasion, are all reported as part of the subsistence economy of the Chalcolithic period (Kafafi, 2014, pp. 245–7; Rowan, 2014, pp. 225–6). This is except for in more arid regions, where it is suggested that foraging pastoralism was more frequently operated during the Chalcolithic than in the EB I (Banning, 2012, p. 411; Kafafi, 2014, pp. 245–7; Rowan, 2014, pp. 225–7).

2.1.3. Foreign Relations

The EB I Southern Levant has been described as being highly regionalised in social organisation, and this extends into foreign relations as well (Richard, 2014, p. 335). Geographically, the EB I Southern Levant was framed by two established early states of Uruk in the north-east, and Egypt to the south-west. Foreign relations with Egypt during the EB I were especially evident (Mumford, 2014). As the Egyptian Dynastic state developed, so too did levels of exchange and communication with regions of the Southern Levant (Greenberg, 2014, p. 271; Harrison, 2012, p. 634). Harrison (2012:634–7) suggests that it was Egypt's economic interest that led to contact between the two during the EB I, to a level not seen during the Chalcolithic period, transforming the Southern Levant's socioeconomic status and encouraging urbanisation along the way. Greenberg (2014:271) agrees with this assessment, stating:

> "There can be little doubt that the Egyptian presence motivated self-organization in the Levantine villages that interacted with them; by the same token, the sudden withdrawal of Egypt at the end of the EB I would have had profound consequences."

2.1.4. Funerary Practices

There is considerable variation in burial styles throughout the Southern Levant during the EB I. Both primary and secondary burials have been excavated, ranging from single through to multiple burials, with some tombs containing up to hundreds of individuals (Baker, 2012; Guy, 1938; Helms et al., 1992; Ilan, 2002; Kenyon, 1960b; de Miroschedji, 2014, p. 313; Ortner & Frohlich, 2008; Yannai, 2016). Tombs excavated in the EB I Southern Levant vary from simple pit burials to both modified and unmodified caves, from dolmens to shaft tombs, and to above-ground charnel houses (de Miroschedji, 2014; Fraser, 2015; Kenyon, 1960a, 1960b; Ortner & Frohlich, 2008; Richard, 2014). This substantial variability has been attributed to dispersed settlements that characterise the early EB I especially, and regionalised nature of these settlements and their socioeconomic interactions (Richard, 2014, p. 336).

To complete the last aspect of the EB I as a transitional period, the funerary practices of the Chalcolithic are also highly varied throughout the region. Though, it appears the labour required for Chalcolithic burials was not as extensive as for those of the EB I (Banning, 2012, p. 413). Burial practices included ossuaries and infant jar burials beneath residences. Some adults were also buried below residential floors, although adults were generally buried outside of residential areas (Banning, 2012, p. 413; Kafafi, 2014, p. 241). Modified caves were also used during the Chalcolithic, as were many other subterranean complexes (Rowan, 2014, p. 233). The numerous types of burials, as well as level of variation, support the continuity between the Chalcolithic period and the EB I, with significant differences in burial practice only entering the archaeology towards the latter end of the EB I, by means of structures like the Charnel houses at Bâb edh Dhrâ (Chesson, 1999).

2.2. Early Bronze Age I Jericho

2.2.1. History of Excavations

Being of both archaeological and biblical significance, Jericho holds a rich history of excavations. After initial site excavations by Warren in the late 19th

Century, the first extensive excavation of Jericho was undertaken from 1907-9 by Austro-Hungarian team Sellin and Watzinger (Nigro, 2016, p. 5). The site was then excavated after WWI by Garstang from 1930-6, with the intention of validating the biblical account of Joshua. To do so, Garstang focused heavily on the tell itself, however in the process of establishing tell boundaries, also discovered tombs that lay to the north and west of the tell (Garstang, 1932; Kenyon, 1960b; Nigro, 2016, p. 5). Kenyon then conducted two excavation seasons after WWII in 1952 and 1955. Though also approaching the site as a biblical archaeologist, Kenyon reassessed and redated finds from the tell, and extensively added to list of tombs from further excavations outside of the tell (Kenyon, 1960b; Nigro, 2016, p. 5). Finally, since the 1990's, the Italian-Palestinian team led by Marchetti and Nigro have excavated the tell at Jericho. Their intent is to assess the MB and LB tell structures, and in the very least provide final periodisation for the site, from not only their excavations, but for all prior excavations (Nigro, 2016, p. 5).

Kenyon coined the EB I as the 'Proto-Urban' period, due to its transitional position between the non-urban Chalcolithic, and the urban EB II (Kenyon, 1960b, p. 5). The Proto-Urban period was characterised by three distinct pottery types; Proto-Urban A, B and C pottery. Though Wright deemed that all three pottery types as belonging to the EB I in general, Kenyon (1960b, p. 9) disagreed, assigning A and C as late Chalcolithic, and B as belonging to what other sites called EB IA. This was not the first time new terminology was attempted to be introduced into Levantine archaeology, nor was it the last, but it was arguably one of the most enduring alternative terms (Sharon, 2014, p. 47).

2.2.2. Life and Death in Early Bronze Age I Jericho

Situated in the Jordan Valley, just north-west of the Dead Sea, Jericho has been occupied since at least the Pre-Pottery Neolithic A (Garstang & Garstang, 1948, p. 56; Kenyon, 1954, p. 103). Having been established around a permanent, natural spring of fresh water, Jericho provides an extensive archaeological history of occupation (Kenyon, 1954, pp. 103–4). During the 1950's excavations, Kenyon declared that the stratifications classified as Proto-Urban belonged to that of a

settlement without any 'urban' indicators. This was due to the lack of any wall-like structures around the settlement, of which excavations demonstrated little evidence of apart from a small area at the north end of the tell (Kenyon, 1960b, pp. 9–10). From the end of the Chalcolithic and into the Proto-Urban period in Jericho, houses from this section of the tell were generally rectilinear with some remnants of post-holes; reflecting the pillared rooms found elsewhere in the Southern Levant (Garstang & Garstang, 1948, p. 59). However, for Kenyon (1960b, pp. 9–10) the evidence of tomb usage, but little settlement on the tell itself, led to the interpretation that Proto-Urban (EB I) peoples were "…nomadic or seminomadic invaders". There is evidently some discrepancy between these reports, and so this interpretation has since been challenged. Parr (2000:395) re-examined the published excavation reports from both Garstang and Kenyon's excavations, concluding that Proto-Urban pottery was recorded from across the site, but not interpreted as representative of the period at the time. First suggested by Holland (1987), Parr (2000:395) also agrees that Jericho may have even been fortified during this period. In conjunction with this new interpretation of Proto-Urban pottery being present across further areas of the tell, more of the same sherds have now also been associated with wall-like structures on the tell. This presents the possibility that the walls date to the Proto-Urban period, rather than the later EB II (Parr, 2000, p. 395).

The presence of the three concurrent pottery types during the Proto-Urban period in Jericho has been traditionally attributed to the migration of new groups to the site, and the merging of these groups to form a new population at Jericho (Harrison, 2012, p. 632; Kenyon, 1960b, p. 5). Parr (2000) also addresses this assumption during his reappraisal of Proto-Urban Jericho. The presence of Proto-Urban pottery throughout the site, as well as with apparent structures such as a possible wall, make it now unlikely that the Proto-Urban population at Jericho was constructed solely from mobile groups, but rather from a continuing Chalcolithic population, who may or may not have experienced an introduction of new groups into the settlement (Parr, 2000, p. 395).

As for the burial practices, most burials of the EB I were in Area A, and were chambers cut into the soft rock of the hill (Figure 2.1, Kenyon, 1960b, p. 4). In her excavation reports from 1960, Kenyon describes all Proto-Urban burials as multiple, secondary burials; secondary either from being buried elsewhere, or from the remains being moved from one location to another within the tomb after flesh decay (Kenyon, 1960b, p. 4). This model of burial continues today as unchallenged for Proto-Urban Jericho. Regarding the case study on Tomb A61, there is little information other than its classification as a Proto-Urban A tomb, due to the pottery present. For comparison, the most understood Proto-Urban tomb from Jericho is Tomb A94, which is also classified as a Proto-Urban A tomb. Consisting of five depositionary layers, Tomb A94 is a chamber within which the skulls were specifically separated from the post-cranial bones and placed either around the edges of the tomb, or around centred piles of the post-cranial bones (Kenyon, 1960b, pp. 16–25). As the post-cranial bones did not appear to number as great as the skulls, Kenyon (1960a:23) determined that this represented crania preferentialism, or the selective treatment of skulls.

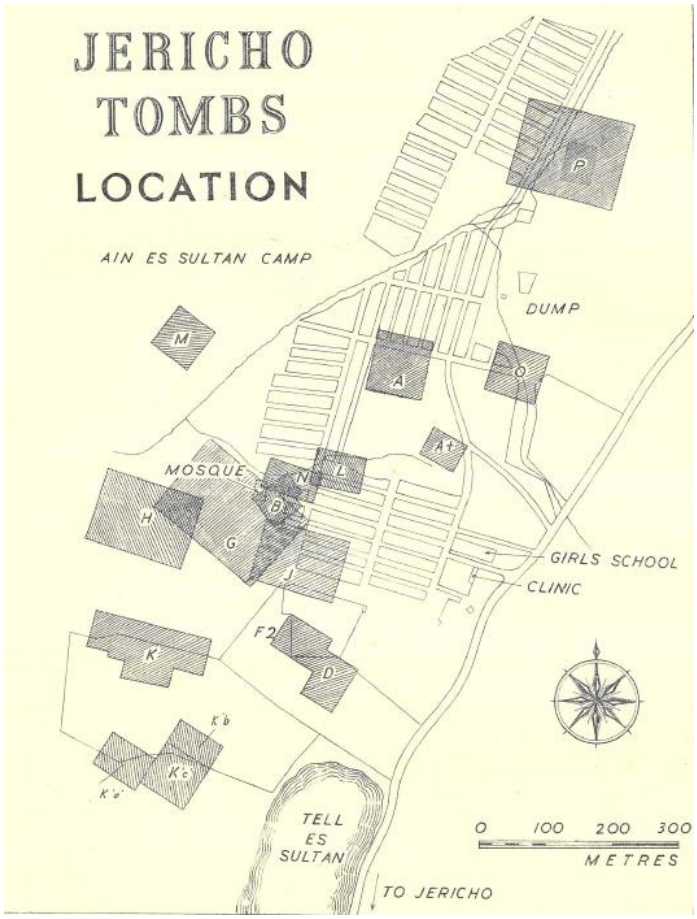


Figure 2.1: Location of tomb areas at Jericho: Image sourced from Kenyon1960a:xxii

2.3. Human Life in the Early Bronze Age I Southern Levant

2.3.1. Current Status of Publication

Current literature on human life in the EB I Southern Levant is scarce, largely due to the highly variable approach to, or in the very least the publication of, the human remains from EB I tombs previously excavated (Ortner & Frohlich, 2008, p. 307; Porter & Boutin, 2014, pp. 1–2; Sheridan, 2017, p. 112). This variability in the study of human remains is not just occurring in the EB I Southern Levant, but also in the broader context of osteoarchaeological study, and so will be further reviewed in Chapter 3. As demonstrated above, life and death in the EB I Southern Levant is so far primarily built on understanding settlement and subsistence patterns, with the information that can be obtained from the human remains themselves scarcely used (Porter & Boutin, 2014).

This highly variable status of publication becomes clear when looking at the material available for analysis from tombs of the EB I Southern Levant[1]. There are hundreds of known EB I sites distributed throughout the Southern Levant, though not all have human remains found on site either due to lack of discovery or preservation (Savage et al., 2007). As will be demonstrated, when human remains are recovered from these sites, they are studied at levels varying from: not at all, in passing comment, with partial consideration and/or a singular small, isolated chapter, or with a complete osteoarchaeological analysis.

When surveying the reports from the EB I Southern Levant (Figure 2.2), there is distinct lack of surety as to whether analysis of the human remains has been completed or not, or completed but not published, or published but not easily accessible for future scholarship; the scenarios are numerous. In many instances, an apparent lack of analysis may simply be due to the fact that burials were not found in association with a settlement, or that the destruction of burial sites has occurred sometime between antiquity and excavation (Ortner & Frohlich, 2008, p. 307). At the site of Tel el Hammam for example, Collins et al. (2015:299) discuss the issues of

[1] For a listing of recent publications on human remains from the Southern Levant in general, see: Sheridan, 2017.

grave robbing, and the destruction caused by modern infrastructure, throughout the Hammam Megalithic Field (HMF) just east of the site. Some human remains were found in association with a few of the tombs, such as at Tomb #55, however that is the most information provided regarding the inhabitants of these tombs (Collins et al., 2015, p. 299).

The following overview of five sample EB I sites which housed human remains, provides a summary of the most common approaches to their publication; starting first with Jericho as it is the case study.

– After the excavations led by Kenyon in the 1950's, five extensive excavation reports were published, of which one was dedicated to the tombs of Jericho (Kenyon, 1960b). Architecture and grave goods were the focus of discussion regarding the funerary trends of Jericho. The human remains themselves were minimally discussed, limited to their position in the tomb, and the proposed deposition practices (Kenyon, 1960b). There was no section or chapter which discussed the human remains themselves. Though later publications would undertake an osteological study of some of the remains, they would not attempt to write a narrative for human life in Jericho, but rather remain purely osteological studies (Blau, 2006; Brothwell, 1965; Lisowski et al., 1957).

– Megiddo is another prominent EB I site in the Southern Levant (Kenyon, 1960a). Just like the later reports from Jericho, multiple volumes of excavation reports were published from Megiddo, from which there was one volume dedicated solely to the excavation of the tombs (Guy, 1938). *Megiddo Tombs* was an immense volume, also describing the architecture and material goods of every tomb in great detail. This time the human remains themselves received their own chapter (Guy, 1938). In this chapter, however, it was only the skulls that could be identified as a single individual that were analysed; with age, sex, but most significantly race, as focus of analysis (Guy, 1938, p. 192). Yet, it is important to remember that the publication of this report was in the 1930's, positioning any osteoarchaeological study firmly within the theoretical frame of anthropometric analysis and racial

determination. Anthropometry, as will be discussed in Chapter 3, dominated the 19th and early 20th Centuries.

– For the human remains from Tel Yarmuth, another EB I site of the Southern Levant, there is a report reserved just for the two 'Proto-Urban' cave burials found at the site (Ben-Tor, 1975). In this report, the two burials are discussed in great detail, again regarding their architecture, pottery and other miscellaneous artefacts. Yet only two pages were assigned for the human remains themselves. The number of individuals within the two tombs was estimated, along with age and sex where possible, before preliminary estimations of ancestry were revealed (Ben-Tor, 1975, pp. 8–9). A separate, later publication entirely for the human remains was intended, however the lack of this publication represents the common lengthy time frame for research to be published from the Southern Levant (Sheridan, 2017, p. 115).

– More recent excavations reports from the EB I site of 'En Esur repeat a similar format to that seen so far, with multiple volumes being published; the most recent of which was dedicated to the excavations of the tombs (Yannai, 2016). As now anticipated, each tomb was studied in depth for the architecture and material goods that form the tombs. This time though, the human remains were also mentioned in context of each tomb with regards to the number of individuals, as well as age and sex on occasion. The was also a singular chapter dedicated to discussing the human remains, though only six pages long and only discussing one of the tombs. Tomb T3 was a modified rock cave containing multiple-burials in 'poor condition' (Yannai, 2016, p. 121). Therefore, only the teeth were studied. The minimum number of individuals and age estimates were determined using tooth development and attrition wear, in order to determine mortality and survivorship curves (Yannai, 2016, pp. 121–6).

– Reports from Tell Um Hammad provide a different example of partial consideration of the human remains. There is no mention of any burials in direct association with the EB I settlement in the excavation reports, and so the initial reaction is that there were no human remains found to be analysed (Helms et al. 1992). However, in the introduction to the excavation reports for the EB I-II, Helms et al. (1992:1) briefly mention:

"A cemetery associated with the Early Bronze Age occupation lies to the south, along the cliffs overlooking the Zerqa river. The cemetery is classified as a separate site, Tiwal esh-Sharqi."

Figure 2.2: Sample EB I sites in the Southern Levant that contain human remains: Images sourced from J. Fraser (above left) and Google Maps (below right, accessed June 2017)

Further research found only one publication on these EB tombs of Tell Um Hammad, and that all but one of the tombs belonged to the EB IV. The remaining tomb was an EB I shaft tomb, which Tubb (1990:47–50) indicated belonged to three individuals, which were aged and then sexed where possible.

Breaking away from these common styles for the publication of human remains, and providing the single most comprehensive enquiry into human remains from the EB I, is the report for the tombs from Bâb edh-Dhrâ' (Ortner & Frohlich, 2008). Though another stand-alone publication for the tombs from the other excavation reports, Ortner and Frohlich (2008) take on a very different approach to tomb analyses. They analysed the remains from each and every tomb, including those with significant fragmentation, for minimum numbers, age, sex and pathologies. A summary for the skeletal remains for each tomb was then developed, including an overview of grave goods found in the tombs, and a comparison of the number of artefacts per burial was developed for every tomb excavated (Ortner & Frohlich, 2008). The main intent behind this comprehensive osteoarchaeological analysis, was to determine whether the population of the early EB I as biologically continuous or not with that of the late EB I, and whether each population was relatable to other nearby sites (Ortner & Frohlich, 2008, p. 3). This was due to the transition from solely rock-cut tombs in the early EB I, to the introduction of above-ground Charnel houses as well as shafts in the late EB I. The osteoarchaeological analysis was not only extensive, but it also provided a comprehensive, and almost singular, understanding of human life in the EB I (Ortner & Frohlich, 2008, pp. 45–9).

2.3.2. Current Knowledge of Human Life in EB I Southern Levant

Current information regarding human life in the EB I Southern Levant is mostly derived from the analyses on the Bâb edh-Dhrâ' population. The estimated life expectancy of the Bâb edh-Dhrâ' population was 17 years old, or 26 years old if fetal and infant remains were discounted (Ortner & Frohlich, 2008, p. 303). This was corroborated by the life expectancy estimated from Tomb T3 of 'En Ensur, based on post-fetal tooth development (Yannai, 2016, p. 124). Bone pathologies, such as the

early onset of osteoporosis, as well as dental pathologies that accompanied this low life-expectancy, suggest that significant bodily stress was common in Bâb edh-Dhrâ' (Ortner & Frohlich, 2008, p. 303). In addition, anthropometry from these sites suggest the majority of the early EB I population at least there were of a 'Mediterranean' typology, or more broadly of Caucasoid ancestry (Ben-Tor, 1975, p. 9; Guy, 1938, p. 192; Lapp, 1968, p. 13; White & Folkens, 2005, p. 400).

As mentioned earlier, the burial practices at Bâb edh-Dhrâ' transitioned from seemingly secondary burials in early EB I rock-cut shaft tombs, to primary burials occurring as well, with above-ground Charnel houses being introduced in the later EB I. This transition has been used to support the notion that early EB I populations were still mobile to some degree, until more permanent settlement took hold by the late EB I in preparation for the urban centres of the EB II (Chesson, 1999, p. 146; Ortner & Frohlich, 2008, pp. 303–5). The assumption then follows that infectious diseases would increase as the population density does due to the onset of urbanism. Yet the remains from the late EB I, and of the 'G1' Charnel house in particular, show a reduction in the number of infectious diseases present on the bones. More so, there was also an absence of fetal or infant remains, alongside increased damage to the skulls compared to those from the shaft tombs (Ortner & Frohlich, 2008, pp. 303–5). Changes in settlement pattern and diet, as well as the development of walled fortifications, between the EB I and EB II have been considered when interpreting these aspects of the human remains from Bâb edh-Dhrâ' (Chesson & Schaub, 2007; Ortner & Frohlich, 2008, p. 305).

2.4. Conclusion

This chapter was designed to explore both the internal and external contexts of EB I Jericho. Aspects of life and death for the EB I Southern Levant demonstrated its position between the preceding non-urban Chalcolithic, and the subsequent urban centres of the EB II, and the scholarly debates still consuming the study of this transition. The following discussion was of the history of excavations at Jericho, as well as the nature of the settlement during the EB I, and how publication of the

human material from Tomb A61 can contribute to the current lacking of understanding about human life in the EB I Southern Levant.

The following chapter will then discuss the nature of osteoarchaeology as a study. The focus will be on the considerably disjointed global development of osteoarchaeology, and the lack of uniformity that has resulted in the study and publication of human remains in archaeological contexts.

3. Osteoarchaeology: Its Definition, Development and Debates

3.1. The Definition of Osteoarchaeology

Osteoarchaeology, also commonly referred to as bioarchaeology, is the study of human remains excavated from archaeological contexts (Larsen, 2014, p. 888). It is the junction at which osteology meets archaeology, where researchers draw links between the human body and the human condition. The intent of this cross-disciplinary study is therefore to reconnect human skeletal remains to the archaeological and cultural contexts in which they were found (Larsen, 2014, p. 888; Ubelaker, 2014, p. 883).

3.2. The Development of Osteoarchaeology: A Global Narrative

The inclusion of sciences into archaeological practice was fostered with the wave of processual archaeology in the 1960's, beginning with the proposal that the study of archaeology required an "…objective, scientific interpretation of archaeological data." (Trigger, 2006, p. 400). Yet the processual movement was also seen as the distancing of the study of human remains away from their ability to reconstruct funerary rituals and beliefs, which had been the primary reason for considering them during pre-processual approaches (Chapman, Kinnes, & Randsborg, 1981, pp. 2–6). It appears that whilst osteology was introduced into archaeological excavation and analysis, the two disciplines struggled to meld together, and this reconnection of the human remains to the archaeology itself was then often lost (Porter & Boutin, 2014, pp. 4–5).

Osteologists seek to estimate aspects such as sex, age, ancestry, health and lifestyle factors from human skeletal remains (Brothwell, 1981; Buikstra & Ubelaker,

1994; White & Folkens, 2005). These can be estimated using morphological and metric methods, or more technologically advanced microscopic methods such as DNA and strontium/calcium analyses. These methods are collated from numerous population specific studies into standards of osteological study, such as by Buikstra and Ubelaker (1994). On the other hand, mortuary archaeology asks rather different questions of human remains. Whether the bones can tell us about how individuals were buried, what that population's belief in the afterlife was, whether the bones reflect the lifestyle of the population, and whether the bones echo findings from other aspects of the archaeological investigation (Porter & Boutin, 2014, p. 3). If the two disciplines do not merge together as intended, the result can be the lack of an in-depth study of human remains within their archaeological contexts.

It is part of human nature to be intrigued by what remains of ourselves when we die, both in body and memory. As Taylor (2004, p. 3) proposes:

> "Archaeology uncovers our responses to the human condition as it has developed since our divergence from the apes some 6 million years ago."

The human body itself has been studied since antiquity, but more modern studies of human remains were conducted largely due to the establishment of skeletal collections from the 19th Century on (Ubelaker, 2014, p. 884). These collections predominantly derived from the increasing number of systematic archaeological excavations that were occurring throughout the world at the time (Ubelaker, 2014, p. 883). From these collections, it was the skull that dominated 19th Century investigations, due to the understanding that it reflected human variation and regional typologies. From there, the enduring discipline of anthropometry developed, which at the time involved the standardisation of measuring techniques and instrumentation for the purpose of detailing these variations (Ubelaker, 2014, p. 883). The discipline's subsequent abuse of craniometry for racial differentiation and segregation continued well into the following century, as discussed in the following sub-sections. Yet, a shift also occurred during the 20th Century, when global politics, research data and collections increased, and more problem-orientated studies took centre stage. It is at this point that variable global approaches developed from the

core 19th Century western European beginnings in osteoarchaeology (O'Donnabhain & Lozada, 2014b, p. 1; Ubelaker, 2014, p. 884).

However, as discussed above, today's approaches to studying human remains in archaeology are not always interdisciplinary. In some part, this relationship between osteology and archaeology is unclear due to the varying global approaches to the study of human remains in archaeology. One clear way to see this variation is in the numerous names preluding to the study of human remains in archaeology. Names include bioarchaeology, physical anthropology and, as used in this case, osteoarchaeology (O'Donnabhain & Lozada, 2014a; Ubelaker, 2014, p. 883). This diversity is the result of varying global origins, including movements in identity and history, colonialism, political validations, indigenous repatriation, anatomy and medicine, and even evolutionary biology (O'Donnabhain & Lozada, 2014a). There is little scholarship discussing this varying development, however O'Donnabhain and Lozada (2014a) provide the most comprehensive summary published so far, dealing with the origins of study country-by-country. The following sub-sections of 3.2. rather examines these differing approaches thematically, using one to two country-specific examples, most of which are discussed in O'Donnabhain and Lozada's (2014a) publication. It appears that together these origins contribute to the lack of global standardisation in excavation, analysis and curatorship of human remains in archaeology.

3.2.1. Identity and History

One of the rationales for advancing the study of osteoarchaeology was the search for local identities and history, especially of indigenous remains (Marshall, 2014; Mushrif-Tripathy, 2014; O'Donnabhain & Murphy, 2014). In Armenia, for example, an ethnogenetic approach persevered from the 19th Century and throughout Soviet control in the 20th Century. International interest in Armenian heritage came from its geographical position, which was as a cross-road between varying migration patterns and Indo-European ancestries (Marshall, 2014, p. 29). A focus on the crania, and therefore anthropometrics, was used to determine the racial

identity of Armenia's indigenous populations. Though this question of identity still endures today, it has stepped away from anthropometry and racial differentiation; instead having entered a more interdisciplinary archaeological approach (Marshall, 2014, pp. 36–7).

Another representation of the search for identity and history using osteoarchaeology can be seen in legitimisation of cultural heritage in the search for direct historical continuity. This approach involves archaeologists determining unknown or pre-history from known history with the assumption of continuity between histories (Fagan, 1998, p. 121). The Icelandic Sagas are still a predominant part of Icelandic identity and history, but were even more so during the 19th and early 20th Centuries, when the Sagas "...were frequently used as road maps for archaeological excavation." (Gestsdóttir, 2014, p. 127). Human remains became the vessel through which historians and archaeologists alike attempted to verify the burials of characters from the Sagas. However, by the 1950's pre-Christian Viking burials, like Christian burials, were being treated in isolation from the Sagas. Yet character references are never too far away from the interest of the general public, who still seek the validation of Icelandic identity and history (Gestsdóttir, 2014, p. 128).

3.2.2. Colonialism

During the development of osteoarchaeology in the 19th Century, colonialism was the dominant political agenda of the Western World (Havinden & Meredith, 1993, p. 3). In India, for example, up until the 1970's, the focus on indigenous human remains was to justify colonial power (Mushrif-Tripathy, 2014). Developing from traditional anthropometry, cranial measurements were utilised for racial categorisation. This was so much so, that in 1931, the Census of India relied heavily on these cranial studies to determine population divisions amongst the native population of British India (Mushrif-Tripathy, 2014, p. 141). By the 1980's, anthropometrics ceased being regarded as evidence of migration and diffusion, or 'mixing of blood', and more recent approaches now include the role of non-metric

traits and palaeopathology in population movements and changes (Mushrif-Tripathy, 2014, p. 150).

The history of Irish archaeological approaches to human remains is much like in India: to legitimise colonial customs (O'Donnabhain & Murphy, 2014, p. 155). The picture that was painted of Ireland's past was one of continual invasions and population replacements. Work by Beddoe in the late 19th and early 20th Centuries indicated that the Irish population was of a 'mixed race', justifying colonialism even against a neighbouring 'white' country (O'Donnabhain & Murphy, 2014, p. 156). This assessment was once again conducted using anthropometry, demonstrating how Irish archaeology in the 20th Century was heavily intertwined with the principles of political, cultural and religious domination. Current practice of osteoarchaeology in Ireland continues the search to understand Irish identity, but from a modern and integrative international approach (O'Donnabhain & Murphy, 2014, p. 162).

3.2.3. Nationalism and Political Validation

During the early 20th Century, another approach to the studies of human remains in archaeology emerged with nationalism, in the form of racial superiority for political and military justification (Morris, 2014, p. 191). These nationalistic purposes were centrally focused on validating the internal racial position of a country. In Nazi Germany, for example, one of the goals of the Third Reich was to validate the distinction and superiority of the 'Aryan race'; which ancient human remains were used to do so (Arnold, 2006, p. 8; Hare, 2014, p. 1). Earlier nationalist interpretations of the archaeological record, such as Kossina's 'settlement archaeology', unwittingly developed the preconceived ideologies on which the Nationalist Socialist regime was built (Arnold, 2006, p. 12; Hare, 2014, p. 7). The search for 'pure Germanic blood', as well as the need to extend geographical territory, fostered the merging of osteoarchaeology's 19th Century racial typologies with pre-existent national archaeology to create 'racial science'; or this determination of distinctive Aryan ancestry (Heinemann, 2013, p. 35). This very internal treatment

of osteoarchaeological material was tied to the politics of Nazi Germany, and so the approach to archaeological remains greatly altered in its study after WWII. From the latter half of the 20th Century to current day, German researchers engage both locally and abroad on the international stage of osteoarchaeology both in excavations and publications[2].

The other main example of the nationalistic treatment of human remains in archaeology was in South Africa. There were two schools of thought regarding the treatment of human remains in archaeology during The Apartheid, prior to 1994. The physical anthropologists stayed clear of politics, despite the fact that, as like Kossina, their publications regarding racial origins and variations were still used as political tools (Morris, 2014, p. 191). The other school consisted of the '*volkekundists*'. This was an anthropology based school strongly associated with 19th Century anthropological teachings and Social Darwinism, resulting in the more active use of racial variation amongst human remains as tools for political and cultural segregation (Morris, 2014, pp. 190–191). From the 1980's, the international archaeological community began making their stance against such an approach. In 1985, nineteen South African archaeologists were refused entry to the International Union of Prehistoric and Protohistoric Sciences (Morris, 2014, p. 192). Just as seen in Germany, the change in political agenda in the 1990's also saw the change in osteoarchaeological studies, and South African researchers joined the international stage of study (Morris, 2014, p. 194).

3.2.4. Medical Development

Another major contributor to advancements in osteoarchaeology was the developing understanding of pathologies and their evolution using ancient human remains. Britain, for example, presents such a focus on its medical history, with numerous papers cataloguing medical findings (Brothwell, 2014, p. 76). Such a history includes not only studies of pathology and epidemiology, but also of genetic traits and traceability. British archaeology is rich with access to human remains that

[2] Examples include the German Archaeological Institute (DAI).

have endured everything from the plague, warfare, venereal diseases, pathological abnormalities, and more (Brothwell, 2014). Having moved away from the Western European anthropological beginnings, British scholars now contribute research on disease, injury and non-metric traits, as well as biological distance and issues of conservation, to international academia (Brothwell, 2014).

On the other side of the world, the approach to osteoarcheology in Mexico has also centred around medical studies. The predominant focus has been on the diseases and warfare behind the demise of the Mayan and Aztec empires (Tiesler & Cucina, 2014, p. 166). In this instance, it appears that this focus was limited to the collapse of the empires, and that the human remains are still seldom studied for any other purpose. Tiesler and Cucina (2014) address this concern that the international popular interest in cultural remnants of both societies have resulted in neglect of the fact that human remains can contribute heavily to cultural reconstruction (Tiesler & Cucina, 2014, p. 166). However, the work that has been done on the human remains from Mexican archaeological contexts was the result of both local and international scholars, providing the pathway for continual input today from international academia (Tiesler & Cucina, 2014, p. 167).

3.2.5. Evolutionary Studies

A significant aspect of osteoarchaeology is the study of the origins of the modern human (Ubelaker, 2014, p. 883). Studies of both the anatomical changes occurring over time and across different hominin species which lead to the emergence of the modern human, were combined with cultural and archaeological studies to assess the development of human culture and behaviour (Birdsell, 1979, p. 418). During the 20th Century, Australia provided a unique circumstance for osteoarchaeology. The indigenous population was of interest both for anatomical study, but also for cultural analysis, as research in Australia up until the 1970's was seen as a unique evolutionary context. The geographical isolation of the continent was considered evidence of a unilineal cultural projection of human evolution, without cross-cultural contamination (Birdsell, 1979, p. 417). Cultural attributes and

artefacts were linked to the study of both living and 'fossil' Aboriginal populations; a link which then began to collapse as the origin and migration of Australia's indigenous populations were debated in the 1970's and 1980's (Littleton, 2014, p. 43). Researchers such as Macintosh and Larnach followed up this change in osteoarchaeological focus with the suggestion that human remains should simply be studied within their archaeological context, and without evolutionary links at all (Littleton, 2014, p. 44). However this view did not succeed, and Australia remained separated in its studies of osteology and archaeology until the issue of repatriation (Littleton, 2014, p. 44).

3.2.6. Repatriation

More recently in the 20th Century, a prominent impact on the development of osteoarchaeology has been the subject of repatriation. Many of the human skeletal collections throughout the world contained indigenous remains from countries such as Australia, the United States, Canada and from Africa (O'Donnabhain & Lozada, 2014a). With the historical focus on racial determination in mind, these collections of indigenous populations are not necessarily surprising in the wake of colonialism. It was in the 1990's and 2000's that legislation such as the Native American Graves Protection and Repatriation Act (NAGPRA) in the United States, and the Repatriation of Indigenous Cultural Property (RICP) in Australia were enacted respectively (Department of the Environment and Energy, 2006; Rakita, 2014, p. 217).

Prior to the RICP legislation in Australia, osteology and archaeology were clearly distinct in both study and practice (Littleton, 2014, p. 44). Yet the exchange of control over indigenous skeletal remains from museums and academic institutions, to indigenous groups, saw the necessity for the two fields to come together and forcibly practice osteoarchaeology. This had a significant impact on the study in Australia and the US alike, by continually calling for an interdisciplinary approach to ensure repatriation of human remains to ancestral lands (Buikstra & Ubelaker, 1994, p. 2; Littleton, 2014, p. 44; Rakita, 2014, p. 217).

3.2.7. Summary of Global Approaches

All of these varying approaches to osteoarchaeology during the 20th Century have had a significant impact on the way human remains are treated today from archaeological contexts. Many more countries can show evidence of this variance, and many of the provided examples can even be considered across multiple origins of study. Osteoarchaeology may have begun with racial determination, but the current nature of international collaboration and academia is leaps and bounds ahead, and would suggest that a uniform global approach is simply a matter of time.

3.3. Osteoarchaeology in the Southern Levant

Excavations in the Southern Levant during the 19th and 20th Centuries, were conducted by largely European archaeological groups (Bernbeck, 2012, p. 94). There is a rich history of archaeological excavation throughout the region, however, as discussed in the previous chapter there is an apparent lack of study of human remains from these excavations (Sheridan, 2017, p. 112). Using the above framework for identifying varying global origins of osteoarchaeological studies, prior investigations in the Southern Levant were to determine identity and history. Archaeology in the Southern Levant was, and to some degree still is, guided by interpretations of the bible (Kenyon, 1960a; Levy, 1995). Biblical archaeology, just as with the Icelandic Sagas, resulted in the connection of sites and artefacts with key places and events from the bible. In such a narrative, human remains appear to have had little role in the archaeological interests of the Southern Levant.

In conjunction with the continuation of such tradition, it is not possible to ignore the significance of Judaism in modern day Israel. The majority of Israel's current day population is of the Jewish faith (Israel Central Bureau of Statistics, 2016), which brings implications when excavating human remains. In Jewish religious practices, once a Jewish person has been buried, they may not be exhumed except on severe circumstances such as reburial to consecrated ground (Klein, 1979, p. 298). Though many ancient remains are not in fact of past Jewish populations, it is

due to public consideration that the Israel Antiquities Authority (IAA) dictates that the exhuming of any human remains must be transferred to the Ministry of Religious Affairs for reburial (Israel Antiquities Authority, n.d.). This is, of course, if the burials have not already been robbed; an activity that has been recorded as occurring both in antiquity or modern day in the Southern Levant (Collins et al., 2015, p. 299).

3.4. Debates in Osteoarchaeology

Though defining osteoarchaeology may have seemed clear, sections 3.2. and 3.3. reveal the level of disparity in the development, and consequent approach, to the study throughout the world. The current level of accessibility to internationally reviewed literature is momentous[3], but there is still work to do before a comprehensive merge between osteology and archaeology is the norm. Yet it is not only the uniform approaches to human remains that are still in discussion. The constant formulation and publication of new 'problem-orientated approaches' has created debates regarding the accuracy of many aspects of this field (Ubelaker, 2014, p. 886). There are numerous ongoing debates in osteoarchaeology, however the following are most prevalent to this research thesis.

Palaeodemography, or the demographics of past populations, relies heavily on sex and age estimates (White & Folkens, 2005, pp. 414–5). Increased data and collaboration for population-specific estimates have led to advances in this area, allowing for the capability to formulate population estimates, such as life expectancy and mortality rates (Ubelaker, 2014, p. 885). Yet, because of this population specificity, it begs the question of just how accurate these age and sex estimates are when applied to unknown populations (White & Folkens, 2005, p. 360). For this reason, any age or sex estimates are still just that: estimations.

Palaeopathology, or the study of pathologies present on ancient bones, and palaeoepidemiology, the study of pathological processes on ancient bones, are

[3] For a full list of osteoarchaeological literature available: Sheridan, 2017.

another component of osteoarchaeology that is in current debate (Ubelaker, 2014, p. 885; White & Folkens, 2005, pp. 309–10). Aside from the fact that many diseases or traumas are not visible on the bones[4], the precise diagnosis and determination of cause of a pathology present may not always be possible. For example, the presence of cribra orbitalia on the crania is largely unmistakable on a dry bone specimen. Which disease or trauma it is alluding too, however, is not clear. Researchers are still unsure as to whether it is an infection or diet induced response from the body to perhaps be storing additional iron for the individuals health (White & Folkens, 2005, pp. 321–2).

Non-metric variation then refers to alterations in bone and tooth shape that is naturally occurring between individuals (White & Folkens, 2005, pp. 406–7). These differences are generally easy to observe. However, their cause and significance are not so. Though these traits are generally used to gauge population affinity, their exact genetic or environmental causes are still largely unknown (White & Folkens, 2005, p. 407).

With all of these debates in mind, there is one more major issue which impacts those already discussed. The fragmentation and commingling of human remains is not only the current state of the material being researched in this paper from EB I Jericho, but is what osteoarchaeologists can often face throughout the world (Buikstra & Ubelaker, 1994, p. 9).

3.4.1. Key Debate: The Impact of Fragmentation and Commingling

A significant issue in the study of osteoarchaeology is the impact of fragmentation and commingling. Fragmentation alone may remove pieces of the puzzle when attempting to reconstruct the picture of a past person. When there is more than one individual present, such as in a multiple burial like those at EB I Jericho, this fragmentation is often amplified (Robb, 2016, p. 687). The debates above

[4] Trauma is more often than not to the flesh, and if it either a) heals correctly, or b) is fatal, the evidence of trauma tends to remain this way. Disease is similar, if not less frequent in skeletal remains. Again, if an individual a) recovers quickly, or b) dies quickly, then the disease will have only impacted the soft tissue. (White & Folkens, 2005, p. 310)

discuss the current inconclusive nature of ascertaining palaeodemography, palaeopathology and significance of non-metric variation, yet these are issues that exist with individual remains. In the instance of fragmented and commingled burials, age, sex, pathology and variation cannot be tied to particular individuals. It is clear then why questions have been raised regarding the usefulness of fragmented and commingled skeletal remains in osteoarchaeology.

The first question to ask of a fragmented and commingled burial site, is how many individuals there are. To do so, it is therefore necessary to determine a Minimum Number or Individuals (MNI). Since original individuals are often no longer discernible, a MNI provides an estimate assessed from repetitive identical bone fragments (Buikstra & Ubelaker, 1994, p. 9). This is merely an underestimate though, as not all bones are usually recoverable.

A possible positive avenue of data from which fragmentation and commingling can offer osteoarchaeologists information, is skeletal part representation. Skeletal part representation is the calculation of how many bones from particular sections of the body are present in comparison to how many of those bones should be present, based off the MNI (Robb, 2016, p. 685). Such analyses can illustrate aspects of burial, such as preservation conditions or preferential bone treatment (Robb, 2016, p. 685).

Fragmented remains do not necessarily remove the capability to analyse palaeodemography, palaeopathology and variations. The next three chapters will hopefully demonstrate how fragments containing diagnostic features for these studies are still present if the time is taken to sift through all the material (Buikstra & Ubelaker, 1994, p. 9). It must be kept in mind, however, that the same debates apply to their accuracy of estimates, but now the reconnection to particular individuals has also been lost. Osteoarchaeologists must face such a collection of remains as a sample to begin with, and acknowledge both the chances of inaccuracy, as well as consider the additional information the state of material may highlight; as is the nature of 'the osteological paradox' (Wood et al., 1992).

4. Methodology for the Osteological Analysis

4.1. Data Selection

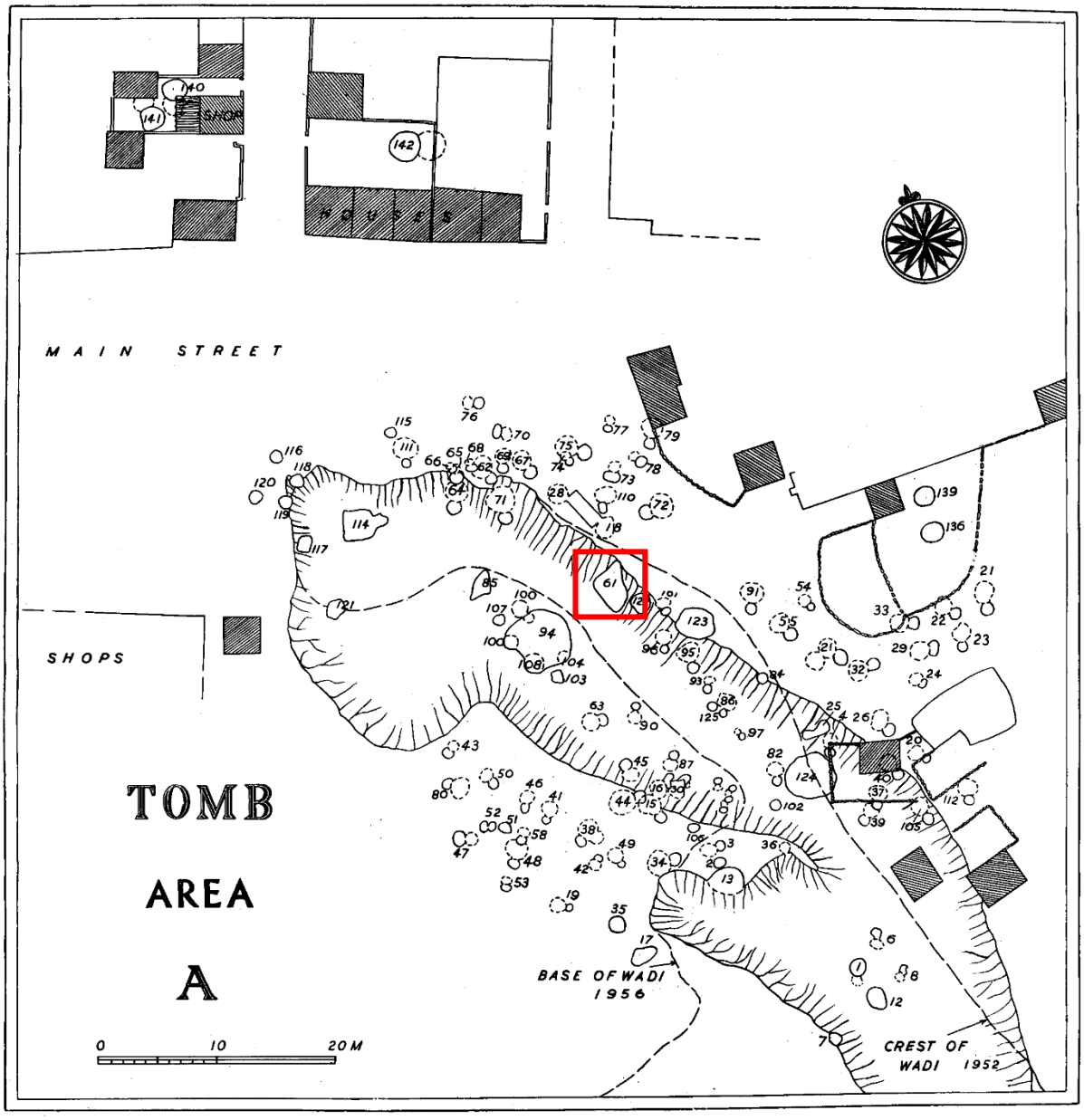
4.1.1. Site and Tomb

A small collection of tomb assemblages from Kenyon's 1950's excavations of Jericho are present at the Nicholson Museum, granted to the University of Sydney post-excavation (Kenyon, 1965, pp. 638–642). These assemblages contained mainly pottery, and commingled human and animal skeletal remains. The tombs that are identifiable at present in the Nicholson Museum are A61, B35, B47 and E1[5]. The remaining labels lack the necessary tomb information, and so are unknown. These tombs were made available to myself and fellow Honours student Miranda Evans for further research in 2017. In the two years prior, we had undertaken an initial catalogue of the commingled skeletal remains. The catalogue only broadly categorising fragments into skull/teeth, long bone, hand/foot, axial, juvenile, animal, rock/pottery/shell, and unidentifiable. The initial catalogue is therefore considerably basic, due to the need to sort forty-two boxes, each containing hundreds of fragments, at a rate of one working day per week for the better part of two years.

Tomb A61 belonged to what Kenyon termed 'Protourban A', which, as discussed in Chapter 2, is now referred to as part of the Early Bronze Age I (Figure 4.1). In order to complement previous research conducted on the human skeletal remains from the MB Tombs B35 and E1 (Blau, 2006), Tomb A61 was selected for this demographic study.

[5] See Appendix A for full list of Kenyon's record, including the locations to which all tombs were sent from the 1952 excavation.

PLATE XXXVIII



Plan of Area A.

580

Figure 4.1: Location of tombs within Area A at Jericho, with Tomb A61 highlighted: Image sourced from Kenyon (1960b, p. 580)

4.1.2. Tomb Sample

There are seven boxes containing skeletal remains from Tomb A61 in storage at the Nicholson Museum. These boxes were recorded as NM2008.187-9 and NM2008.192-5. Although all seven boxes were reviewed during the 2015-2016 catalogue, it was not possible to create a detailed fragment by fragment database for all seven boxes within the time limit of the University of Sydney Archaeology Honours program. Therefore, a sample had to be selected. It is important to note that the seven boxes at the Nicholson Museum are already only a sample of the tomb. The excavation of Tomb A61 was not completed during the 1952 excavation, which is where these seven boxes are from, but was finished during the 1955 excavation under the new label of A130 (Kenyon, 1965, p. 32). A few human skeletal fragments from Tomb A61 were even listed in the analysis by Lisowski et al. (1957), although this allocation was not officially recorded anywhere.

In order to ascertain an overview of the demographics and health, it was necessary for this research sample to contain both cranial and post-cranial bones. Boxes NM2008.187, NM2008.188 and NM2008.189 contained a range of fragments from both areas of the body, as well as varying levels of preservation.

4.2. An Osteological Assessment

4.2.1. Cataloguing

The secondary fragment by fragment database of the human skeletal remains from Tomb A61 sample was conducted as per dictated in the *Standards for Data Collection from Human Skeletal Remains* (Buikstra & Ubelaker, 1994, p. 10). The fragments that were initially recorded as animal, pottery, rock or shell were disregarded from this secondary catalogue. The remaining human skeletal fragments were then recorded detailing: bone identification, segment of bone, side, relative completeness (0-25%,25-75%,75-100%), additional information (regarding use for sex/age/pathology determination), and count/weight. In addition, the segment of bone was complimented by the corresponding zone as outlined by Knüsel and Outram (2004), providing objectivity during segment descriptions so as

to assist in establishing a MNI (Minimum Number of Individuals). Count/weight was used for fragments that were indeterminate, and so grouped into bone clusters such as, but not limited to: skull, vertebrae, ribs, long bones, and unidentifiable. Clusters of unidentifiable fragments were weighed, and subsequently removed from analysis due to their inability to represent a known skeletal element. The original registration number, bag number, tomb number and label, as recorded during the 2015-2016 catalogue, were maintained in this secondary catalogue for the purpose of Nicholson museum regulation. A fragment reference number was the final inclusion, for the easy referral of any fragment back to the database.

It is important to note that none of the bones or teeth were in any way cleaned during this catalogue and assessment, so as not to further weaken the already damaged fragments. Some fragments were so far damaged, that they were structurally being held together by dried context.

4.2.2. Minimum Number of Individuals

A MNI was ascertained by establishing what was the most repeated, same-sided, segment/zone of a bone. For example, five complete left temporal bones would indicate at least five separate individuals (Buikstra and Ubelaker 1994:9). As suggested in the name, this number will almost certainly be an underestimate of the population. During Kenyon's excavations, the method for determining a MNI was in the separate collection and bagging of skulls (Kenyon, 1960b, p. 23). These bags are still isolated within the collection today, though now highly fragmented. The skulls present in this sample of Tomb A61 were assessed for relative completeness, and compared to the MNI ascertained from this osteological assessment.

4.2.3. Determination of Sex

Any adult bone fragment from 1) the innominate (hip) or 2) the skull, and that contained diagnostic features for sexing, was recorded in the catalogue within the additional information column. A ratio was then determined for the number of bone fragments diagnostic of sex compared to the number of fragments that were not

diagnostic of sex. The fragments that were applicable for determining sex were then recorded in a table stating the fragment reference number, the bone, segment and zone of bone, sex of fragment (1-5) [6], and the academic reference from which sex was ascertained (Appendix B).

1) From the innominate, fragments containing the subpubic region (Figure 4.2), the greater sciatic notch (Figure 4.3), or preauricular region (Figure 4.4) were morphologically assessed for form and shape, and the sex was recorded as a number between 1 and 5.

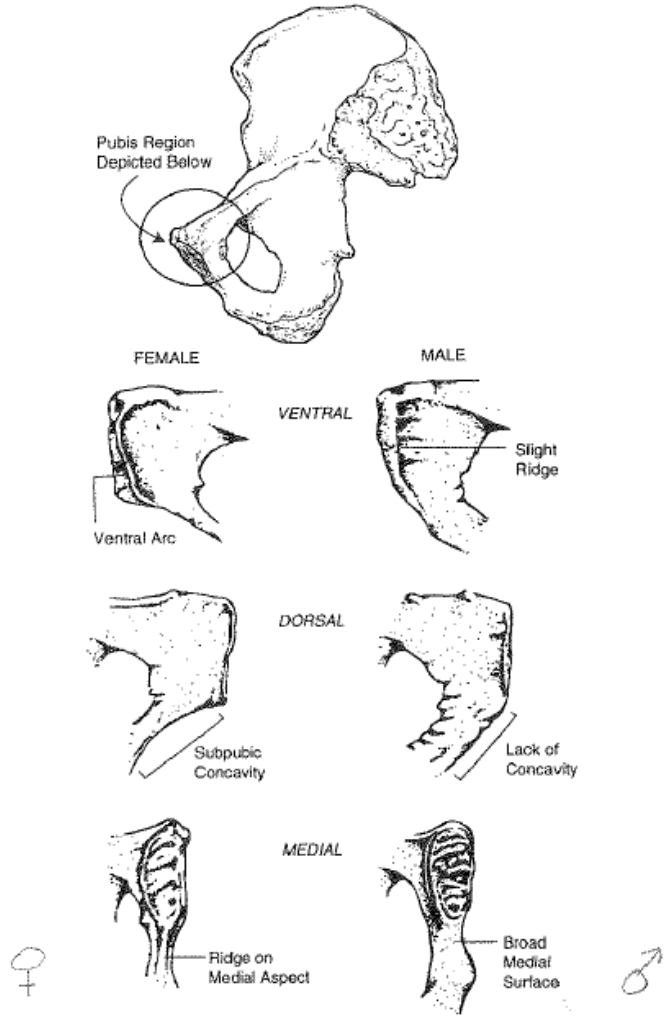


Figure 4.2: Determination of sex by the subpubic region of the innominate: Image sourced from Buikstra & Ubelaker, 1994:17

[6] This overarching scoring system is in keeping with Buikstra and Ubelaker's (1994, p. 21): 0 = indeterminate sex (which have already been discounted in this case), 1 = female/FF, 2 = probably female/F?, 3 = ambiguous sex/??, 4 = probably male/?M, 5 = male/MM.

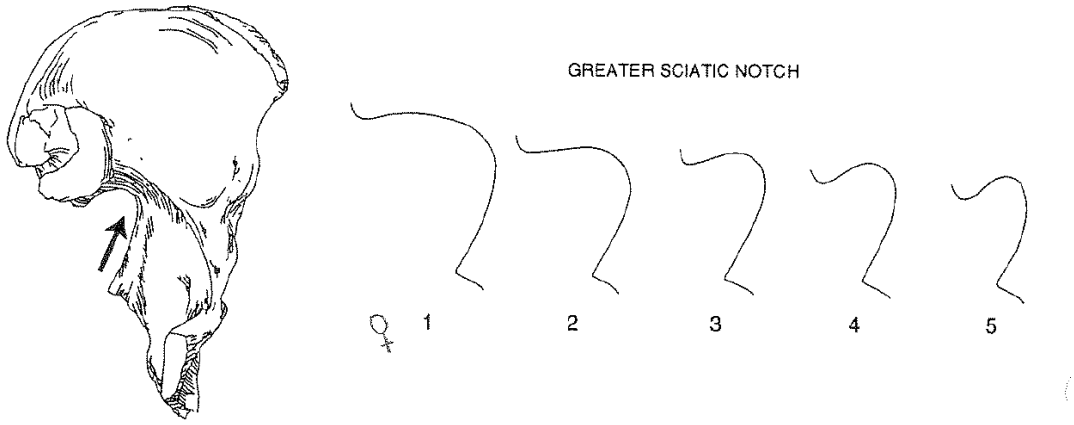


Figure 2. Sex differences in the greater sciatic notch. Drawing by P. Walker.

Figure 4.3: Determination of sex by the greater sciatic notch of the innominate: Image sourced from Buikstra & Ubelaker, 1994:18

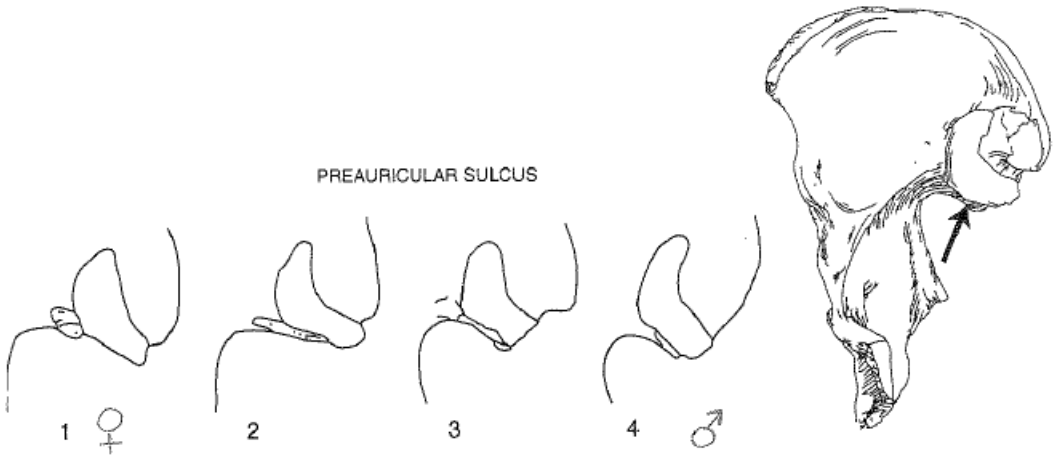


Figure 3. Scoring system for preauricular sulcus. Drawing by P. Walker (after Milner 1992).

Figure 4.4: Determination of sex by the preauricular region of the innominate: Image sourced from Buikstra & Ubelaker, 1994:19

2) From the skull, fragments containing the nuchal crest, mastoid process, supraorbital margin, glabella region, or mental eminence (Figure 4.5) were morphologically assessed for form and shape.

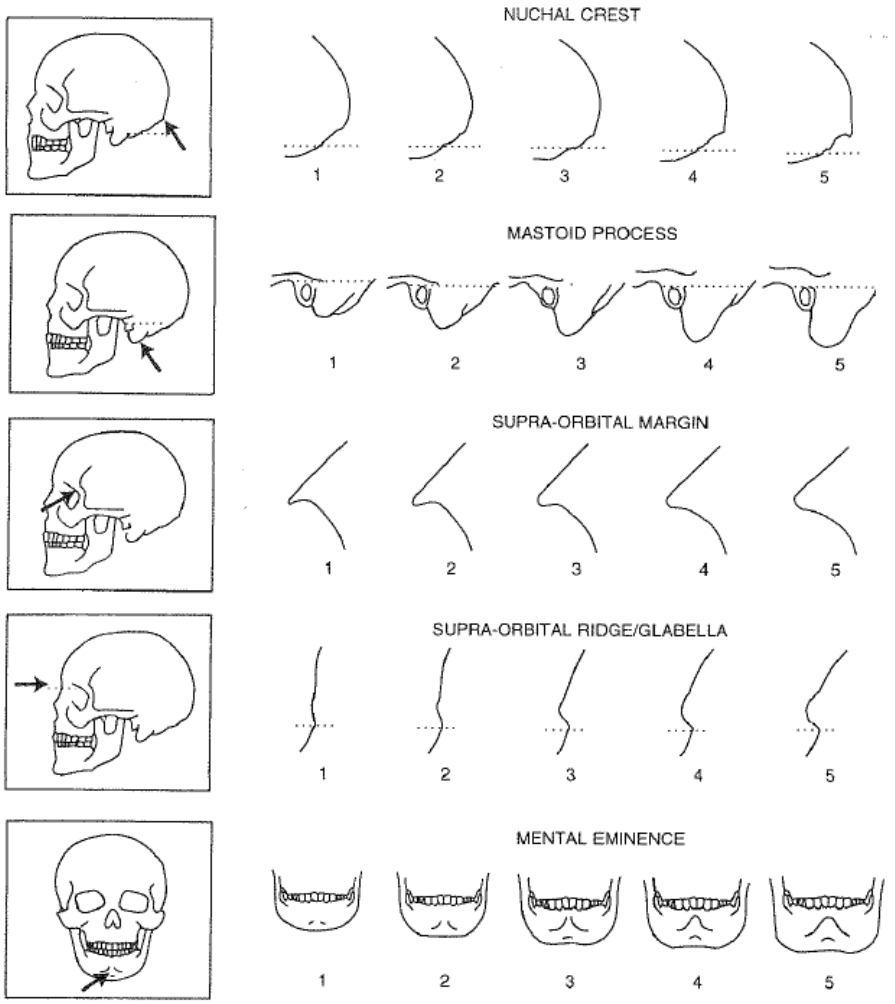


Figure 4. Scoring system for sexually dimorphic cranial features (after Acsadi and Nemeskeri 1970, Figure 16).

Figure 4.5: Determination of sex by landmarks of the skull: Image sourced from Buikstra & Ubelaker, 1994:20

4.2.4. Determination of Age

Determination of age was also first provided as a ratio. Bone fragments were divided into two categories: juvenile or adult. Unless the fragment provided clear indication of juvenile attributes, it was assumed to be from an adult. The juvenile bone fragments were then further categorised by age estimates. Juvenile status was determined by several means. Firstly, when an epiphyseal surface, indicating the presence of a growth plate, was present. Secondly, when deciduous teeth or the alveolar for deciduous teeth were present. The last method was if the size, especially of a long bone fragment, reflected a juvenile's stature. This was especially important in infant and neonatal remains. Again, each fragment diagnostic of a juvenile was

recorded in a table stating the fragment reference number, the bone, segment and zone of the bone, age range, and the academic reference from which age was ascertained (Appendix C).

4.2.5. Palaeopathology

The types of pathological markers that can be present on bones are numerous. Therefore, these skeletal remains were assessed for evidence of joint diseases, infectious diseases, iron deficiency anaemia, congenital abnormalities and growth disorders, neoplastic diseases, and dental pathologies. Again, each fragment diagnostic of palaeopathology was recorded in a table stating the fragment reference number, the bone, segment and zone of bone, suggested pathology present, and the reference from which diagnosis was ascertained (Appendix D).

4.2.6. Non-metric Variations

The final analysis of the human bone fragments was for non-metric variations. Non-metric variations are deviations in bone development that are not attributed to injury or disease, but rather genetic or environmental variations in the bone (White & Folkens, 2005, p. 407). Non-metric variations have been tended to be connected to familial groups and population identifiers, due to these genetic or environmental causes for the bone deviations (Buikstra & Ubelaker, 1994, p. 85; White & Folkens, 2005, p. 407). In a final table, any fragment displaying a non-metric variation was recorded stating the fragment reference number from the catalogue, the bone, section of bone, non-metric variation present, and the reference from which the variation was ascertained (Appendix E).

4.2.7. Limitations

There were several limitations to be aware of when undertaking this research. The first, which was addressed at the beginning of the chapter, is the issue of sampling. This sample represents between a third to a half of the skeletal remains from Tomb A61 housed at the Nicholson Museum, yet an unknown proportion of

the total material excavated from the tomb itself. In an attempt to avoid any preference when sampling was made, the first three boxes as numbered by the Nicholson Museum, which contained both cranial and post-cranial material required for analysis, were selected.

Another significant limitation is that of human error. The initial catalogue was undertaken whilst still completing undergraduate studies in anatomy and osteology. The broad categories assigned in this initial catalogue were not reassessed during the catalogue for this thesis, but simply recorded in further detail. Though familiar with human remains, hands-on experience before this thesis was limited to an Australian Bachelor's degree in Anatomy and Histology, as well as an advanced osteological course with the Sanisera Archaeology Institute.

Finally, it is necessary to acknowledge the controversy involved when inferring human life from osteological remains. The 'osteological paradox', introduced in Chapter 2 and discussed in further detail in Chapter 6, limits what can be concluded about a population from the osteological results.

5. Results of the Osteological Analysis

The final catalogue of identifiable human remains recorded a total of 1,529 fragments of cranial and post-cranial bone, as well as teeth.

5.1. Minimum Number of Individuals

Based off the number of right petrous portions of the temporal bone, there were at least 14 individuals in this sample from Tomb A61. This sample also contained 21 individually labelled and bagged skulls from the original excavation. The precision of this skull collection for the original MNI is questionable, however, with two of the skulls containing evidence for more than one individual: Skull KK contained two left petrous bones, and Skull F4 contained a very robust right mandibular ramus, yet a very gracile left mandibular ramus (Figure 5.1).

Therefore, the final MNI for this sample of Tomb A61 is 14.

5.2. Determination of Sex

Of the 1,529 fragments, only 24 were identified as containing diagnostic features of sex (Appendix 2). As only cranial and innominate bone fragments were considered, there were no fragments intact enough to complete metric analyses for estimation of sex. It is therefore important to remember that the morphological scale, where 1 is female through to 5 as male, is merely a reflection of the gracile or robust nature of the skeletal features. Five of the fragments were right mastoid processes, indicating that the sexual dimorphism of at least five individuals were present. However, estimations from single features, rather than a collection of estimates from an entire skull or innominate, mean that the precise sexing of particular individuals is not possible. Yet this analysis is still an extremely useful indicator of the sexual dimorphism expressed within the sample.

All five categories were represented amongst the 24 fragments, with a tendency for more masculine features, as demonstrated with a mode of 4 and mean of 3.25 (Figure 5.2). This trend is also reflected by the five known individuals, based off the right mastoid processes; categories 1,4 and 5 were each represented by a single mastoid, with category 3 receiving the two remaining mastoid processes.

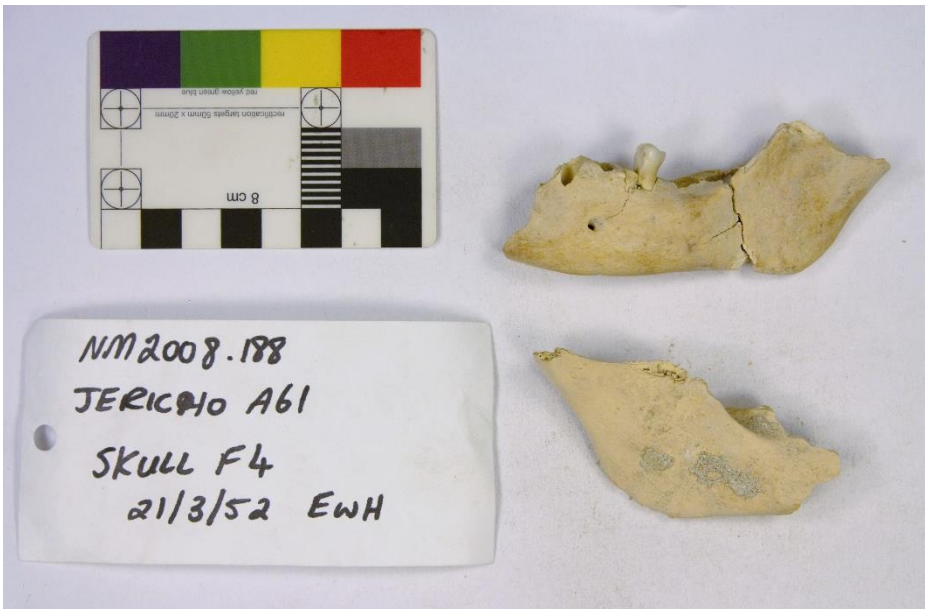


Figure 5.1: NM2008.188.346-7. Two mandibles bagged as belonging to one individual during excavation: but the left adult mandible (above) is more gracile and has a thinner ramus, than the right adult mandible (below)

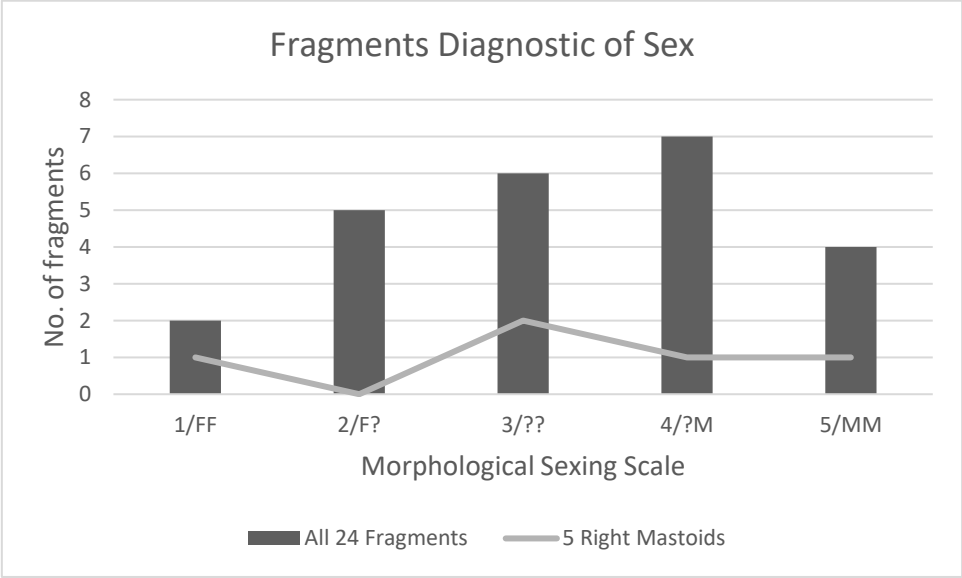


Figure 5.2: The sexual dimorphism of the 24 fragments diagnostic of sex, based off the morphological sexing scale seen in Buikstra and Ubelaker (1994). Five right mastoid processes represented an MNI for fragments diagnostic of sex. For comparison, their range of sexual dimorphism are also shown

5.3. Determination of Age

186 of the 1,529 fragments clearly belonged to juveniles, of which 116 could provide an estimate of age at death (Appendix 3). Schaefer et al. (2009) was consulted for age estimates of both epiphyseal fusion and tooth eruption times. This was due to their comprehensive method for determining estimates; they combined several methodologies from different populations to create an average age estimate for both epiphyseal fusion and tooth eruption.

However, epiphyseal fusion times provide only maximum ages by which fusion should be complete, and on several occasions, the extremely small size of a juvenile bone and metaphyseal surface indicated the bone belonged to an individual much younger than the possible twenty years old (per say) required for fusion to complete. On these occasions, estimates of age were drawn from the measurement of either the widths of long bone metaphyses (Cardoso, Vandergugten, & Humphrey, 2017), or the ischial lengths for innominates (Rissech, García, & Malgosa, 2003). These estimates are far more uncertain than ages drawn from Schaefer et al., since both Cardoso et al. and Rissech et al. were developed from smaller, singular modern populations. Rissech et al. was only used on two occasions, however Cardoso et al. was used thirty times, and so was assessed for accuracy in this sample.

Cardoso et al. hoped to assist other researchers in aging fragmented remains for individuals from 0-12 years in age of both known and unknown sex. They state that their equations best suit a juvenile population who have undergone adverse environmental conditions during development (Cardoso et al., 2017, p. 19). Pathologies found on the bones, as discussed in section 5.4, would suggest that A61's sample population fit this criterion. As for accuracy when aging, fragment NM2008.189.194 provided the ability to calibrate results from Schaefer et al. with the results from Cardoso et al. (Figure 5.3). As the only intact diaphysis of a juvenile long bone in the sample, its length was able to be measured, indicating an age of approximately 2 years old according to Schaefer et al. Measurements of both the proximal and distal metaphyses produced similar age estimations from Cardoso et al., equating to 2.18 and 1.85 years respectively. Measurements of any remaining metaphyses were therefore recorded, from which age estimations were obtained.

I am aware that these three methods cannot deliver a high degree of precision when estimating age. Yet the information provided by estimating age from a population is too valuable to disregard, and are crucial to discussing the demography of past populations.

The distribution of age estimates was grouped in five-year brackets, from 0-25 years, so to display their maximum age upon entering the tomb (Figure 5.4). The small descent from 10 to 15 years and then large descent from 15 to 20 years, was anticipated. This is because the measurements from Cardoso et al. were not applicable for ages above 12 years, nor were tooth eruptions. Therefore, epiphyseal fusion was relied upon for the maximum ages of the remainder of the fragments.

As it was not possible to estimate age for adult fragments, due to the fragmented and commingled nature of the tomb, life expectancy for the sample was not calculated.

5.4. Palaeopathology

Despite the high levels of bone cortex disintegration and dried mud distorting the appearance of most fragments, various pathologies were still found within the sample (Appendix 4). No congenital or growth disorders, nor neoplastic diseases, were catalogued.

Joint disease was primarily expressed through osteophytic lipping on the bodies of four vertebrae, or 11.11% of the intact vertebral bodies, extending between 2-5mm transversely from the body edges. One vertebral body also presented compression on the anterior body, decreasing from 25 to 18mm in body thickness (Figure 5.5). On one axis/C2 vertebra, the dens showed evidence of antemortem impaction, presumably either from injury, infection or growth malformation (Figure 5.6).

Only one orbital fragment presented a clear indication of cribra orbitalia, which is commonly associated with iron deficiency anaemia (Figure 5.7). Though, as discussed in Chapter 3, this attribution has been contested in recent literature[7].

[7] For further reading on the debate of cribra orbitalia as an indicator for iron-deficiency anaemia: (McIlvaine, 2015; Zarina et al., 2016)

Figure 5.3: NM2008.189.194. Intact diaphysis (unfused shaft) of a juvenile left humerus. Calibrated age of 2 years old: Schaefer et al. = 2 years old, and Cardoso et al. = 1.85-2.18 years old

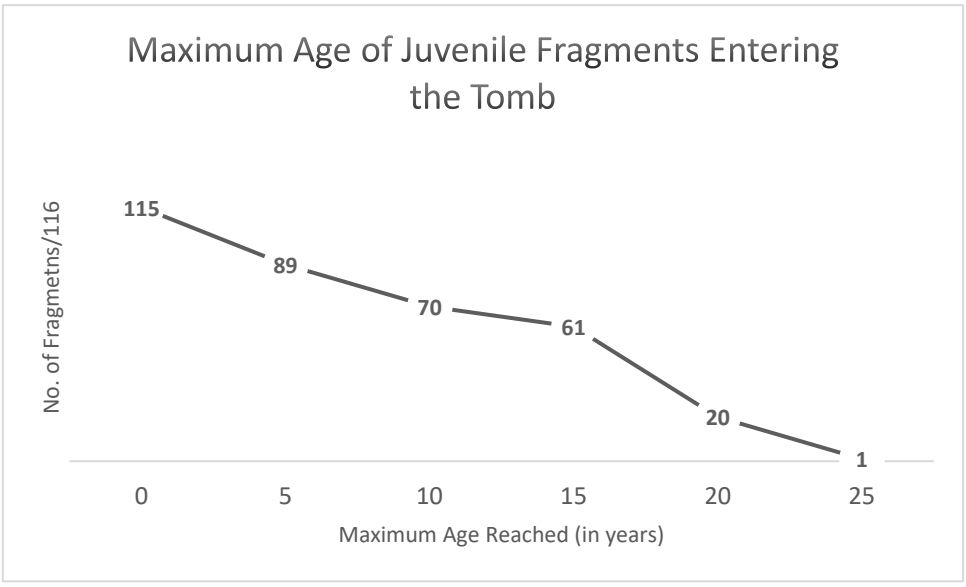


Figure 5.4: The maximum age for the 116 juvenile fragments at time of death, grouped into five-year brackets between 0-25 years old

Only two cases of possibly infectious diseases were catalogued. One mandibular fragment showed evidence of bone resorption, via the presence of pitting is on a fragment of mandible (Figure 5.8). The pitting within the alveolar for the first adult molar is accompanied by the antemortem loss (AMTL) of the second deciduous molar, suggesting some infection or weakness of the bone may have attributed to, or been caused by, the loss of that tooth. Finally, abnormal bone growth on the proximal end of a juvenile ulna diaphysis could perhaps be a case of periostitis, or reaction to some form of nearby injury or infection affecting that section of bone (Figure 5.9).

60% of the pathologies noted, however, were dental pathologies. This is at least some part due to the durable nature of tooth enamel, preserved better due to its high chemical composition in comparison to bone. Firstly, six teeth, or 10.71% of the total tooth crowns negating unidentifiable fragments, presented with linear enamel hypoplasia (LEH, Figure 5.10). LEH is one or more line of significantly lower enamel thickness on the crown caused by some type of stress during childhood and development (White & Folkens, 2005, p. 329). It is important to note that all six teeth were from different locations in the mouth, signalling a minimum of one individual with this pathology. Another three teeth, or 5.36%, had caries present, which is generally an indicator of diet and enamel strength (White & Folkens, 2005, p. 329). Then lastly, there were four cases of AMTL, or 4.71% of the total alveolar found in the sample, from three different individuals. All four cases were on the mandible (Figures 5.8, 5.11).

5.5. Non-metric Variations

Three types of hypostotic variations, or reduction of normal bone deposition, were catalogued from the sample. From the skull, there were three cases of supraorbital notches instead of foramina. Post-cranially, there were two cases of septal apertures, or perforations of the olecranon fossa of the humerus (Figure 5.12). Then there were another two cases of transclavicular canals, or superior-inferior perforations of the mid-shaft, on clavicles (Figure 5.13). there was only one example

of a hyperstotic variation, or increase in bone deposition, recorded, in the form of a supraorbital spur.

Another highly visible variation was across the 13 tali of the sample. Some tali had an extended neck angle, as well as variation in medial articular facet (Figure 5.14). One of these 13 tali also had a single, continual articular facet on the plantar surface, rather than two separate facets found on the remainder of the tali (Figure 5.15). The sulcus tali, or groove that normally runs between the two facets, is either extremely shallow, or not present in this case.

Other variations included the presence of a Carabelli's cusp on one molar fragment. Supranasal sutures were also found on four fragments of frontal bone, resulting from a lack of final closure of the frontal metopic suture. Lastly, one extra-sutural bone was also identified, its original location on the crania unknown.

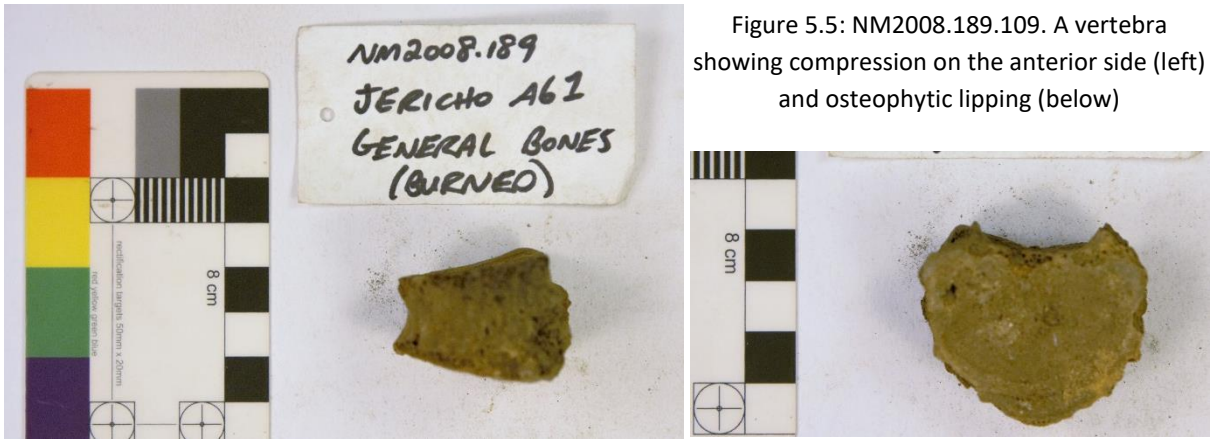


Figure 5.5: NM2008.189.109. A vertebra showing compression on the anterior side (left) and osteophytic lipping (below)

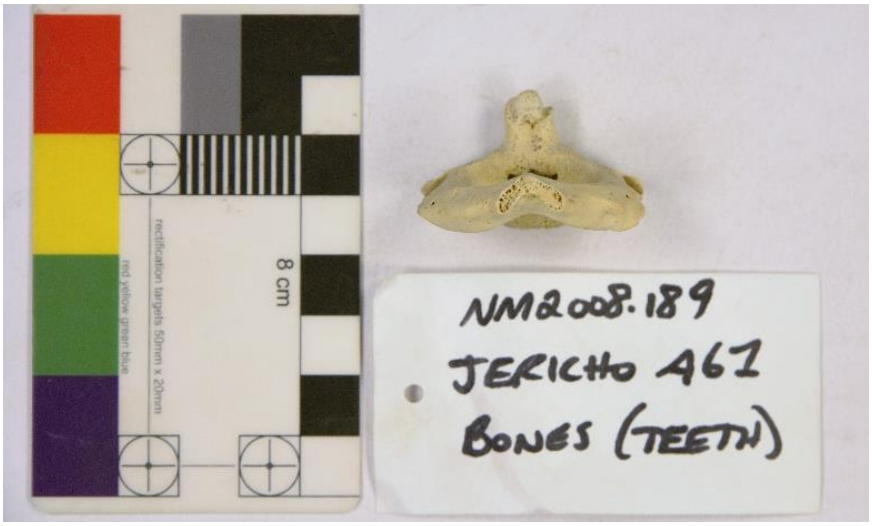


Figure 5.6: NM2008.189.207. An axis/C2 vertebra, with an impacted dens

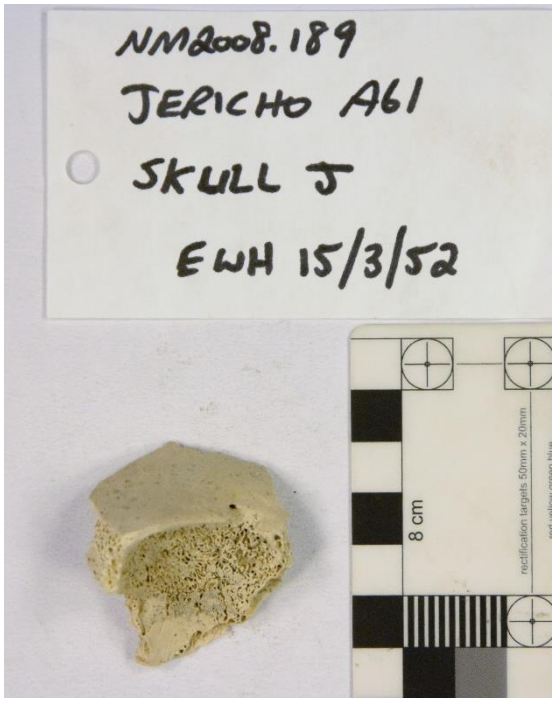


Figure 5.7: NM2008.189.283. The roof of a right orbit (frontal bone) showing signs of cribra orbitalia

Figure 5.8: NM2008.189.179. A juvenile mandible with AMTL of the right second deciduous molar, and porosity in the alveolar for the right first adult molar. The right second adult molar is unerupted but just visible

Figure 5.9: NM2008.187.153. Proximal end of a juvenile ulna with an abnormal bone growth just below the trochlear notch. Possibly a case of periostitis?

Figure 5.10: NM2008.189.174. First mandibular premolar with LEH present on the base of the crown

Figure 5.11: NM2008.189.5. AMTL of the right first and second adult molars of an adult mandible

Figure 5.12: NM2008.189.59. A septal aperture, or perforation of the olecranon fossa, on a distal humerus

Figure 5.13: NM2008.189.21 (Left) and NM2008.189.226 (Right). Two clavicles presenting transclavicular canals (antemortem holes in a superior-inferior direction) in the midshafts. One clavicle is from an adult (left) and the other from a juvenile (right)

Figure 5.14: All of the tali in the sample that are of ≥75% preservation. There are five right and five left tali in this image. This shows the level of variation in the neck angle and medial articular facet throughout the different tali

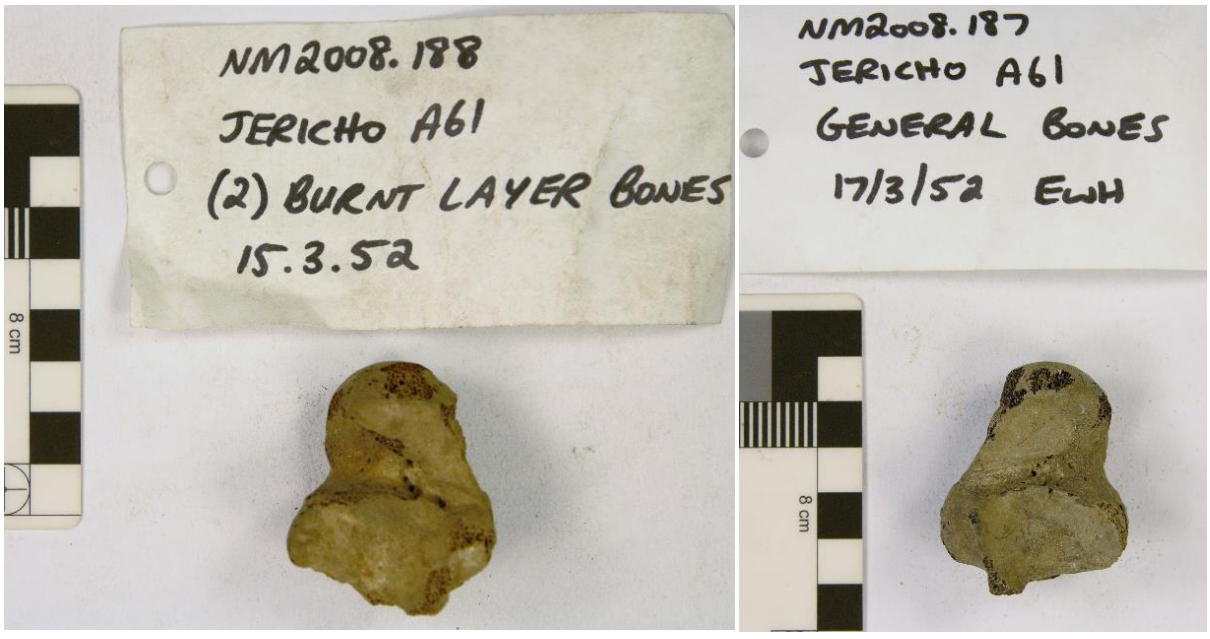


Figure 5.15: NM2008.188.69 (Left) and NM2008.187.76 (Right). The plantar surfaces of two different tali. One talus displays the variation of a single connected articulated facet (left), compared to the normal presentation of two facets (right)

5.6. Conclusion

Fragments from this sample suggest both females and males were present in Tomb A61, with perhaps a higher prevalence for robust features. Most fragments were inconclusive of juvenility, but those that were definitely juvenile appear to represent a relatively steady mortality rate. Several types of pathologies were present, mostly dental, and non-metric variations were also present in the sample.

In the next chapter, aspects of EB I human life in Jericho will be inferred from these results for the sample of Tomb A61. The challenges and caution required when inferring lifestyle from demography will be acknowledged in Chapter 6, but the amount of information that can be concluded from these results is too important and too lacking in the current literature to not be discussed.

6. Discussion: Human Life in Early Bronze Age I Jericho

6.1. The Osteological Paradox

Drawing conclusions from osteological data, as has been highlighted so far, is not a simple task. The amount of information available from studying ancient human remains is significant, yet there is difficulty in confidently inferring palaeodemography and palaeopathology from the information. This defines the concept of the osteological paradox, which overshadows every osteoarchaeological analysis. Wood et al. (1992) presents this paradox as three key conceptual issues: 'demographic nonstationarity', 'selective mortality' and 'hidden heterogeneity in risks'.

Demographic nonstationarity refers to the ever-changing nature of populations, and how treating them as stationary may be simpler, but is misrepresentative of the population. If a populations life expectancy is low, such as that of EB IA Bâb edh-Dhrâ', a high mortality rate alone would result in a diminishing population. Rather, a low life expectancy will more often represent a high fertility rate (Wood et al., 1992, p. 344). The effect of fertility is therefore greater than mortality on altering the life expectancy of a population. Selective mortality refers to the simple fact that osteology only represents the individuals that contracted *and died* of a disease, and not those that remained healthy or who were only at risk. A skeletal sample should therefore always overrepresent the prevalence of disease in a population, no matter how large the sample (Wood et al., 1992, p. 344). Finally, hidden heterogeneity in risks describes the individualised nature of susceptibility to disease and death. Dependent on genetic, socioeconomic and temporal factors, it is not possible to ascertain overall age-at-death trends due to the unknown individual risks of death within the population (Wood et al., 1992, p. 345).

These limitations are important to keep in mind when reconstructing what human life was like for a population, but they will only have a chance of being overcome if the study the osteological data from archaeological contexts continues in an integrative method.

6.2. Demographic Analysis of Tomb A61

The commingled and fragmented nature of this sample from Tomb A61 placed other limitations on the analysis of palaeodemographics. As individuals were not identifiable, precise numbers for juvenile/adult and male/female were not possible. However, the indirect representation of both male and female skeletal features did demonstrate the likely presence of both sexes within the sample. This interpretation is supported to some degree by the presence of both robust and gracile femoral shafts, in which robusticity was assessed by the prominence of the muscle attachment sites on the shaft; especially the linea aspera. This insight into the physical labour division of Tomb A61 suggests that at least part of the adult population was undertaking heavy labour.

Similarly, the precise number of adult as opposed to juvenile individuals was not calculable, though the sample did indirectly present both juvenile and adult remains. Of the known juvenile fragments, counts reflected relatively even numbers of fragments for each of the five-year categories. As discussed in the results, the higher count of fragments aged ≤20 is most likely due to the inability to more accurately determine age for fragments older than 12 years old, which would have placed more fragments in the bracket of ≤15 years, instead of ≤20 years.

The apparent lack of discrimination between age or sex within the tomb sample has previously been used to suggest the presence of a horizontally heterarchical society (Ortner & Frohlich, 2011, p. 114; Sheridan, Ullinger, Gregoricka, & Chesson, 2014, p. 174). Whether or not the individuals are immediate family members, the relatively egalitarian nature of the tomb supports a focus on kinship-based values and organisation (Ortner & Frohlich, 2011, p. 114).

As discussed in Chapter 2, other EB I sites present higher proportions of juvenile remains, and especially of infants, than seen in this sample. As individuals grow older, their bones not only increase in size, but also density and cortical thickness (Scheuer & Black, 2004, pp. 18–9). This means that the younger the bones were at time of death, the more likely they will fragment and disintegrate post-deposition. Factors which could affect this rate include the burial practices themselves, subsequent taphonomic changes, or the excavation and curation techniques. With this in mind, there is the high possibility that more infant and fetal bones entered Tomb A61 during deposition, but have since disintegrated as a by-product of these processes. As an example, the shaft-tombs from EB IA Bâb edh-Dhrâʼ presented a high infant mortality rate, and subsequent low life expectancy (Ortner & Frohlich, 2011, p. 107). One difference between the Bâb edh-Dhrâʼ and Jericho tombs, which may explain this lower number of juvenile remains from Tomb A61, could be the nature of the burials. Bâb edh-Dhrâʼ has been described as being secondary in nature, with individuals being buried elsewhere, and then relocated both during and after decomposition; with particular care being given to infant remains (Sheridan et al., 2014, p. 167). This was proposed due to the largely disarticulated nature of the bones, and yet high levels of preservation; as though they were not disturbed after final deposition in the tomb. At Jericho, Kenyon (1960b) rather proposed that the EB I burials were multiple and successive. The bones would have been repeatedly moved around the tomb as each new interment is laid to rest, and the previous pushed to the side. This repetitive action would affect the integrity of the previous interments with the introduction of each new one, destroying the weakest and/or younger bones first.

Looking then to the remainder of the bones, which were classified as adult, age estimations were not possible using common methods such as changes to the auricular and pubic surfaces of the innominate or the sternal rib ends, as those fragments were not recoverable from the sample (Buikstra & Ubelaker, 1994, pp. 21–38). This is most likely due to the highly fragmented nature. In this regard, though

the individually bagged skulls may not have been a reliable source of MNI, they did allow insight into the population's stages of cranial suture closure. According to Meindl and Lovejoy (1985), sutures can be scaled between 0 (open) and 3 (completely obliterated), moving up the scale as an individual's age increases. All of the 21 skulls were highly fragmented, with many vault fragments being broken along suture lines. For all of the skulls in the sample except 'Skull 3', the cranial fragments indicated sutures that were of open to minimal closure, or scaled 0-1. Without the ability to locate the original position of the sutures on the skull, nor create composite scores, no actual age estimation was attempted. Rather, the presence of these majority open/minimally closed sutures, along with little osteoarthritis on susceptible zones such as the vertebra, suggest that the remaining adult population were relatively young, with it likely that sutures of 0-1 closure represent individuals who were no more than 50 years old (Meindl & Lovejoy, 1985).

The final piece of information determinable from the sample was stature, for which there were only two complete long bones. One radius, broken into three articulating sections, and one fibula, broken into four articulating sections. After being temporarily secured together, both long bones were measured to estimate stature according to Trotter (1970, in White & Folkens, 2005, p. 399; Table 6.1). For each bone the sex was unknown, and the ancestry was assumed as Caucasoid; based off the 'Mediterranean' ancestry determined as present at both EB I Megiddo and Bâb edh-Dhrâ', as mentioned in Chapter 2.

Bone and Length	Sex Unknown	Estimated Stature (cm)
Radius, 22.5cm	Male	164.06 ± 4.32
	Female	161.58 ± 4.24
Fibula, 33.7cm	Male	162.10 ± 3.29
	Female	158.35 ± 3.57

Table 6.1: The calculated stature of the two complete long bones present in the sample. Ancestry was assumed as Caucasoid (see text), and stature was calculated for both sexes (Trotter, 1970, in White & Folkens, 2005)

6.3. Population Health and Variability of Tomb A61

There are relatively few pathologies present within this sample. There is no direct evidence of disease, such as tuberculosis and brucellosis as documented at Bâb edh-Dhrâ' (Sheridan et al., 2014). The low rate of osteoarthritis is most likely due to the lack of elderly individuals in the sample, which therefore rather suggests low instances of biomechanical stress (White & Folkens, 2005, p. 325). The few cases of osteoarthritis that were present on the vertebrae, along with the one compressed vertebral body, may also be indicative of some individual/s undertaking greater biomechanical stress than the rest of the population. The compression may have occurred due to weight-bearing stresses, or rather from the onset of the osteoarthritis which weakened the integrity of the bone, leading to its collapse under the individuals weight. The exact process is questionable due to the lack of an accompanying compression fracture. It is important to note that it is entirely possible for these vertebrae to have belonged to a single individual.

Three different types of dental pathologies were found in the sample: caries, AMTL and LEH. Caries are generally indicative of diet, requiring fermentable carbohydrates in order to form (White & Folkens, 2005, p. 329). These can be found in many foods, including bread and fruit. Associated calculus may have been obscured by context, which was often dried onto the surface of both bone and teeth fragments. The teeth with caries were permanent adult teeth, and possibly belonged to individual/s of either increased age, or increased consumption of fermentable carbohydrates. In conjunction, most teeth did not indicate any tooth wear, and the few that did present minimal wear. Putting these factors together, this dental pattern has previously been attributed to an agricultural society rather than hunter-gather, which generally is represented by heavy tooth-wear and little to no caries (White & Folkens, 2005, p. 412). The presence of AMTL could rather be from several different causes, such as oral hygiene, injury, or weakness of bone from illness or age (Blau, 2006, p. 22). Lastly, the presence of LEH is indicative of stresses in the population during childhood and the tooth's development (Griffin & Donlon, 2007, p. 213). It is again important to keep in mind that regarding the instances of LEH and caries,

there were no reoccurring teeth, and so it is theoretically possible that they each pathology came from a single individual.

Overall, this sample population appears to have been quite healthy, but as previously discussed, it is only the chronic conditions that impact the bones. As Wood et al. (1992, p. 345) suggests, skeletal lesions are likely from the portion of the population that suffered from a disease for a long period of time until they recovered or eventually succumbed. The subpopulations that were either unaffected by the disease, or affected so strongly that they died quickly, would be represented by skeletal remains without any lesions. The tomb population is, as mentioned earlier, only a sample of the overall population, and undoubtedly does not represent the 'normal population'.

The non-metric variations found within the sample are difficult to interpret when treated in singularity. The variations discussed in the results are most useful when analysing the biological distance between this EB I sample and another population sample. The degree of variation within tali neck angles and trochlea surfaces in the ankle, as well as the prevalence of the septal apertures in the upper arm, are of particular interest in this regard, and will be further reviewed in Chapter 7 when compared to later MB tombs populations from Jericho.

The transclavicular canal present on two of the clavicles (collarbones) are, however, an unexpected variation. Such a variation has not yet been noted as present in any studies on EB I populations of the Southern Levant. Modern studies have shown this variation to actually be the result of a deviation in the pathway of the supraclavicular nerve, which normally passes in front of the clavicle within the muscular layer (Jelev & Surchev, 2007, p. 278). This variation instead forces the nerve through an immovable bony canal that is not normally present in the clavicle, which can sometimes result in the pinching and entrapment of the nerve through acute injury or repetitive actions causing strain (Omokawa, Tanaka, Miyauchi, Komei, & Takakura, 2005, p. 240). Referred to as 'supraclavicular nerve neuropathy', if this entrapment occurred on the two individuals from the sample, it could have resulted

in pain and discomfort in the shoulder, limiting the use of the associated arm (Omokawa et al., 2005, pp. 238–9).

Modern advancements in ancient genetics (aDNA) and stable isotope analyses have begun to dominate the study of biological distances. Stable isotope analyses predominantly involve the study of carbon and nitrogen levels in human tissues to determine ancient diet and dietary changes, and then oxygen and strontium levels for an insight into possible residential and migratory patterns of individuals or entire populations (Katzenberg, 2008, pp. 415–7). Time restraints, inability to access the necessary equipment, and most importantly a lack of personal expertise, altogether meant this avenue was not pursued in this thesis[8]. However, such studies would be valuable in the future research of the ancient human remains from Jericho, as well as the wider Southern Levant.

6.4. Summary

This sample of EB I Jericho presents a population where both sexes were represented. The sample had a comparatively minor representation of juvenile fragments, which were relatively evenly spread between 0-25 years old. Of the adult population, there did not appear to be many individuals over the age of 50 years. From the examples present, adults stood between 154-169cm tall, with variable robusticity at muscle attachment sites, suggesting different individuals engaged in different levels of physical labour. There were few pathologies within the sample, though the majority suggest physiological stresses rather than diseases as the cause, especially during childhood. Dental patterns indicate consumption of fermentable carbohydrates, such as from bread and fruits, whilst effective grinding tools were in use leaving little grit in the diet. Finally, there is some non-metric variation present within the sample, though most interpretations for these variations cannot be drawn without a comparative population. This population does present one unusual

[8] For future studies on aDNA and stable isotope analyses, including their uses as well as limitations when applied to ancient human remains, read (Katzenberg, 2008).

variation, the transclavicular canal, which is so far unaccounted for in any other population samples for the EB I Southern Levant.

The limitations on interpreting ancient populations based off osteological data, as outlined by the osteological paradox, were kept in mind when drawing these final conclusions from this sample of the EB I Jericho population.

7. Further Discussions and Debates

Reconstructions of past populations provide invaluable information, but not just as stand-alone data. The next step is to be able to situate a particular population within greater contexts, whether that be a greater regional, processual or theoretical context. The following three sections attempt to do just that, by providing examples of where this information about the EB I Jericho tomb, Tomb A61, sits in its broader contexts. The first discussion shall compare this sample EB I Jericho population, to a combination of published and first-hand information regarding two MB tombs also from Jericho; to assess any differences in the demography and health between the two populations over time. The second discussion will then explore whether or not this sample from Tomb A61 can contribute to a greater understanding about the nature of the settlement at EB I Jericho. The final discussion shall examine the ways in which this sample of human skeletal material can reflect the usefulness of fragmented and commingled human remains in osteoarchaeological analyses.

7.1. Human life in Early Bronze Age I, compared to Middle Bronze Age, in Jericho

No two populations are ever the same, and each population is constantly changing. As a result, two or more different geographical locations are not required to complete a population comparison. It can be just as valuable to analyse how a population can change over time from the one site. Therefore, a comparison between EB I Jericho and another time during occupation at Jericho can shed light on the changes that the settlement underwent as a response to social, economic, political or environmental alterations.

Between the EB I and MB (c.2000-c.1500 BCE; Bourke, 2014; Cohen, 2014), the Southern Levant in general underwent a major upheaval at the end of the EB III.

Most of the 'urban' settlements that had marked the South Levantine landscape during the EB II and EB III were abandoned, with new settlements relapsing back into non-urban, village-based settlements during the EBIV (Prag, 2012; Sharon, 2014, p. 46). Funerary practices also changed. For example, the use of Charnel Houses for burials at Bâb edh-Dhrâ' were also abandoned, returning to only shaft tombs (Sheridan, Ullinger, Gregoricka, & Chesson, 2014, p. 135). After this upheaval, the causes and processes which are still under examination[9], the MB was defined by a revival of these urban settlements, this time extending into the development of city-states (Baker, 2012; Sharon, 2014; Yasur-Landau, 1992). The settlement at Jericho was marked by a significant change in pottery and architecture between the EB III and the EB IV (Kenyon, 1957, pp. 186–9). Kenyon (1957, 1960a) attributed the major changes at Jericho, and throughout the Southern Levant, to an invasion from the Amorites. Burial structures also changed, from multiple internments in the EB I-III, to single occupation during the EB IV, before returning to multiple burials in the MB (Kenyon, 1957, pp. 200–1). Whether Jericho was 'egalitarian' or 'stratified' during the MB, however, is still under contention[10]. Irrespective of this, MB Jericho is often referred to as an 'urban city', one of many marking the Southern Levantine landscape (Baker, 2012; Yasur-Landau, 1992).

A comparison between the EB I population represented in Tomb A61 to samples of the MB population from Jericho would therefore be anticipated to indicate significant changes. As already mentioned, Blau (2006) published an osteological study on two MB Jericho tombs: Tombs B35 and E1. The differences between aspects of demography, pathologies and non-metric variations were summarised for comparison (Table 7.1). The findings from Lisowski et al. (1957), and Brothwell (1965) were not included in this comparison since the MB skeletal material could not be isolated from their overall analyses. There was an issue of different sample sizes between Tombs A61, B35 and E1, which where possible were adjusted

[9] For entry into further literature regarding the dynamics between the EB IV and the beginning of the MB in the Southern Levant, read Steiner & Killebrew, 2014

[10] See debate between Palumbo (1987) and Shay (1989)

for by creating percentages from the expected number of elements based on MNI, rather than just the percentage from observed elements. For the non-metric variations, only the percentage of septal apertures were included as Blau (2006) did not include variations in her analyses. Septal apertures were noted, however, within the initial 2015-6 catalogue, and so were available from personal knowledge for comparison.

The demography of the two tombs from MB Jericho show a similar pattern to what was seen from EB I Jericho. Both males and females of all ages were interred within both the EB I and MB tombs. There was an increased percentage in the number of juveniles under the age of 12 years old present in Tomb B35, but when compared to the reduced percentage seen in E1, this could simply be due to sample size. It was apparent from the results that Tomb E1 was often affected by its low sample size. This was especially the case in regard to dentition, in which only two teeth were excavated from Tomb E1. So, the remaining comparisons will be between Tomb A61's sample and Tomb B35.

Whilst there was an apparent decrease in the number of dental caries in the MB, there were higher instances of AMTL on maxillae as well as of dental abscesses. The dental wear, however, remained minimal in both Tomb A61 and Tomb B35. Tomb B35 presented an example of both a congenital/growth disorder, as well as of a neoplastic disease, whereas the sample from Tomb A61 did not present a case of either. The number of skeletal lesions pertaining to infection was similar between Tomb A61's sample and Tomb B35. The percentage of vertebral osteoarthritis as identified by the presence of osteophytes was similar across both tombs when the percentages were calculated from the expected total number of elements. As was the case for cribra orbitalia. The presence of septal apertures, however, was greater on average in Tomb B35 than in Tomb A61.

If the presence of both sexes from all ages, is thought to represent an egalitarian, kinship-based society, just as Ortner and Frohlich (2011) suggested, then this same occurrence in a MB tomb would indicate that the societal structure in the

	Duell-Ferguson (2017)	Blau (2006)	Blau (2006)
Aspects for Comparison between EB I and MB Jericho Tombs	**A61 Sample EB I, (MNI = 14)**	**B35 MB, (MNI = 45)**	**E1 MB, (MNI = 7)**
Demography			
Fragments attributable to juveniles >12 years old	3.60 % (out of 1,529 fragments)	9.80 % (out of 3,701 fragments)	1.00 % (out of 313 fragments)
Sexes interred in the tomb	Both male and female	Both male and female	Both male and female
Pathologies Listed			
% AMTL, on observed mandibles	8.16 % (n = 49)	9.30 % (n = 108)	3.60 % (n = 55)
% AMTL, on observed maxillae	0 % (n = 36)	31.40 % (n = 35)	2.60 % (n = 39)
% LEH, on observed teeth	10.71 % (n = 56)	-	-
% Caries, on observed teeth	5.36 % (n = 56)	1.60 % (n = 304)	0 % (n = 2)
% Calculus, on observed teeth	0 % (n = 56)	1.00 % (n = 304)	0 % (n = 2)
Level of dental wear, on observed teeth	Little	Little	None
No. of observed dental abscesses	0	1 (mandible)	1 (mandible)
% Osteophytes - for vertebrae observed - for vertebrae expected (MNI x 24)	 11.11 % OR 1.19 %	 2.39 % OR 1.20 %	0 %
% Cribra orbitalia - from orbits observed - from orbits expected (MNI x 2)	 9.09 % OR 3.57 %	 23.1 % OR 3.33 %	0 %
No. of congenital disorders	0	1	0
No. of neoplastic diseases	0	1	0
No. of skeletal lesions	Possibly 2	Possibly 2	0
Non-metric variations			
% Septal apertures, for distal humeri expected (MNI x 2)	7.14 %	12.22 %	0 %

Table 7.1: Aspects of demography, pathology and non-metric variation from Tomb A61, compared to MB tombs from Jericho. Information for the MB tombs is summarised from Blau (2006), this research thesis (highlighted), and personal knowledge of Tombs B35 and E1

MB was still kinship-based, despite being referred to as an urban city-state. As a non-metric variation, septal apertures have been connected to both environmental and genetic origins (White & Folkens, 2005, pp. 406–7). If this is so, this may contribute to the notion that the tombs contained kin groups. When considering the architecture and grave goods associated with these MB tombs such as Tomb B35, Yasur-Landau (1992, p. 245) proposed that Jericho was a city, but one ruled by a patriarchy of key family group, or clans, rather than a single leader ruling over a stratified society. Whilst this would fit with the osteology, the assumed growth in population density with urbanisation would also suggest an increase in infectious diseases, and this increase is not evident from the population comparison. The presence of dental abscesses in the MB compared with that seen in the EB I, may be attributable to a higher consumption of fermentable carbohydrates, along with the increase in AMTL. However, without age analyses from Tomb B35, it is also possible that the MB population simply contained a greater number of older individuals than seen in Tomb A61.

Overall, it would appear that despite many changes in the landscape and settlement patterns between the EB I and the MB in the Southern Levant, the osteological study of these remains imply that the two Jericho populations lived under relatively similar conditions. Whilst the archaeology of the tell illustrates an increase in settlement size between the two periods, the osteology suggests similar food consumption, rate of infectious diseases and osteoarthritis.

The osteological differences between the EB I and MB Jericho populations are therefore rather unremarkable as they currently stand, and would benefit greatly from further studies such as aDNA and stable isotope analyses.

7.2. Settlement Patterns in Jericho During the Early Bronze Age I

The next discussion is whether or not the human remains from Tomb A61 can contribute to our understanding of settlement patterns at Jericho during the EB I, which Chapter 2 highlighted was a topic of debate. In particular, whether or not the population at EB I Jericho was continuous with the Chalcolithic population, was

continuous with the inclusion of a new population, or whether EB I Jericho was settled by an entirely new population.

In this regard, the most useful marker to estimate biological distance is likely to be population variation (White & Folkens, 2005, pp. 410–1). Again, aDNA and stable isotope analyses would be the most effective modern tools to analyse population variation and biological distances. In their absence, morphological comparisons of non-metric variations may be less effective, but they are still an avenue worth exploring. It is here that the variation in tali shape becomes particularly interesting. For comparison, the variation in tali shape was considered from the analysis conducted by Lisowski et al. (1957), which included 231 individuals from 41 different tombs of Jericho, ranging from Late Chalcolithic through to the MB.

It is important to briefly mention that the dating of tombs was still preliminary so close after excavation, with the only remains from the Late Chalcolithic apparently coming from Tomb A61. It is not published why Cambridge received a part of Tomb A61. This contributes to the earlier issue that the portion of Tomb A61 at the Nicholson Museum being a sample only of unknown quantity to begin with. As examples of this preliminary dating, Lisowski et al. (1957) catalogued their portion of Tomb A61 as Late Chalcolithic and Tomb A13 as EB IA. Kenyon (1983, Appendix A) later re-evaluated Tomb A61 as Proto-Urban (now referred to as EB I), and Tomb A13 as EB I (now most likely considered EB II). It is likely that all tombs analysed in 1957 belonged to a period later than Tomb A61, which itself was only represented by "a few fragments" in their analysis (Lisowski et al., 1957, p. 126). The results from the 41 tombs did not differentiate between the different periods.

Lisowski et al.'s (1957) analysis noted the level of variation in tali shape across all 68 catalogued. They described that all of the tali, adult and juvenile, had some degree of forward extension and medial projection of the medial articular facet, as well as extended neck angles. None of these tali had straight medial articular facets nor extended neck angles (Lisowski et al., 1957, pp. 137–9). Yet, two of the tali in the

sample from Tomb A61 had straight medial articular facets with no extended neck angles (Figure 7.1).

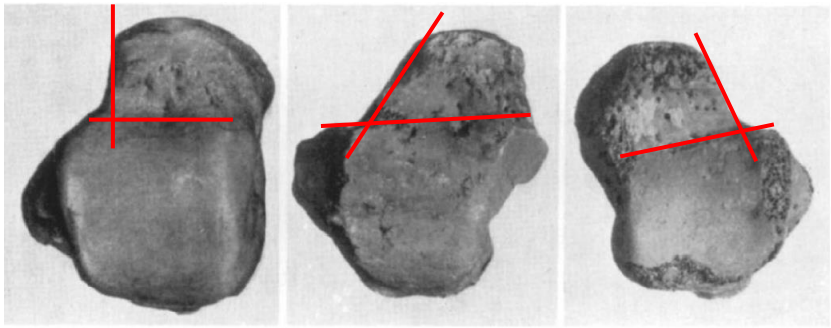


Fig. 12. Showing a left and right Jericho talus on the right with a marked neck-body angle and forward extension with medial projection of the medial facet. Modern European talus on the left for comparison.

Figure 7.1: Above: Examples of tali from EB II – MB Jericho, exhibiting extended neck angles, as well as forward and medial projection of the medial articular facets (right and middle), compared to a 'modern European talus', which are not present in EB II – MB Jericho (left): Image sourced from Lisowski et al. (1957). Below: Examples of tali from Tomb A61, with some exhibiting extended neck angles and facet projection (right), whilst others had no extended neck angles nor fact projection (left and middle)

Without any samples of the Chalcolithic Jericho population, it is not possible to say for sure that this variation is indicative of a new population entering the settlement. What is clear though, is that tali with straight medial articular facets and no extended neck angles were no longer present in the subsequent Jericho populations.

7.3. Fragmented and Commingled Human Skeletal Remains in Archaeology

The last discussion for this chapter refers to the usefulness of fragmented and commingled human skeletal remains in osteoarchaeology. Osteoarchaeologists are

often discouraged when faced with the prospect of sorting through and analysing a sample like Tomb A61. A small sample size maybe be less time-consuming, but the information yielded is often not considered useful for population studies. A large sample, though providing a greater amount of information from which to draw conclusions, then presents the osteoarchaeologist with a massive and time-consuming task. As discussed in Chapter 3, the damaged nature of the remains can often result in the sample being overlooked, as the effort warranted is deemed to be greater than the information that can be obtained.

Previous discussions in both this chapter and Chapter 6 have highlighted the evidence that could, as well as could not, be obtained from Tomb A61's sample; and so therefore does not need to be repeated. Essentially, though not as determinate as performing osteological analyses on modern-day samples, there is still much that is now understood about the EB I Jericho from analysing the sample human material from Tomb A61. The last issue remaining is what the fragmentation and commingling can in fact add to our overall understanding. Robb (2016) and Lambacher et al. (2016) have recently addressed the boundaries of what can be determined from analysing the nature of fragmentation and commingling, with Robb (2016) producing simulations for burial practices based off previously completed analyses.

After an MNI is ascertained for a sample, a Bone Representation Index (BRI) can be completed for each individual bone (Lambacher et al., 2016; Robb, 2016). For example: the MNI in this sample is 14, based off the number of right petrous bones found. Considering this, the sample should then also yield 28 tibias/femurs/humeri/etc, representing two of each long bone from the 14 individuals. Obviously, this is not the case, otherwise the MNI would have been calculated from all bones of the body, not just from the right petrous bones of the skull. Therefore, each bone can be equated to a representative percentage within the sample. A BRI was therefore calculated for several individual bones, especially those that contribute towards specific areas of the body as assigned by Robb (2016) to simulate different burial practices (Table 7.2).

Bones	MNE (observed)	MNE (expected)	BRI %
Petrous Bone	26	28	92.86
Vertebra	36	336	10.71
Innominate	5	28	17.86
Clavicle	5	28	17.86
Scapula	10	28	35.71
Sternum	0	14	0
Ulna	20	28	71.43
Femur	21	28	75.00
Humerus	23	28	82.14
Fibula	4	28	14.29
Tibia	9	28	32.14
Radius	12	28	42.86
Metacarpals	16	140	11.43
Metatarsals	33	140	23.57
Carpals	7	224	3.13
Tarsals	29	196	14.80
Talus	13	28	46.43
Phalanges	50	784	6.38

Table 7.2: The calculated Bone Representation Indices (BRI's) for several bones found within the Tomb A61 sample. Each bone was designated by the most repeated zone. The minimum number of elements observed was compared to the number of elements expected, based off the MNI of 14, creating a percentage of representation (or BRI) for each bone

The intent is to simulate the effect of different burial practices through the nature of fragmentation, by analysing the patterns produced by the BRI's. Robb (2016) recreated several burial practices based off different BRIs and varying levels of preservation. The two burial practices of particular interest to this thesis, was the comparison of primary sequential deposition, which was proposed by Kenyon (1960b) as the mode of burial practice for Tomb A61, to secondary deposition, as the suggested practice occurring at EB IA Bâb edh-Dhrâ'. In both cases, the presence of cranial preferentialism, or the selective treatment and retention of the skulls, was also assessed.

The BRI's from Tomb A61 were grouped and compared to those estimated in Robb's (2016) simulations for burials of 'poor preservation'. The simulations included: 1) Primary sequential deposition, with and without cranial preferentialism

(Figure 7.2), as compared to 2) Secondary deposition, again with and without cranial preferentialism (Figure 7.3).

What becomes immediately apparent is that the curve produced by the BRI's from Tomb A61 matched the curves produced by cranial preferentialism on both Figures 7.2 and 7.3. This could indicate that cranial preferentialism was indeed occurring within Tomb A61. In the single paragraph published on the tomb, which was written after the second season of excavation where it was renamed Tomb A130, Kenyon (1960c:32) mentions that "…against the northern wall were piled 14 skulls." There is also mention of a single articulated skeleton and two half skeletons laying in front of the piled skulls. It is quite interesting that there are 14 skulls mentioned in this paragraph, which is the same as the calculated MNI from Tomb A61's sample. Yet 21 separately bagged skulls were recorded from this sample alone, with another 45 found in the remainder of Tomb A61 housed at the Nicholson Museum. However, without any original excavation reports this cannot be attributed to anything greater than coincidence.

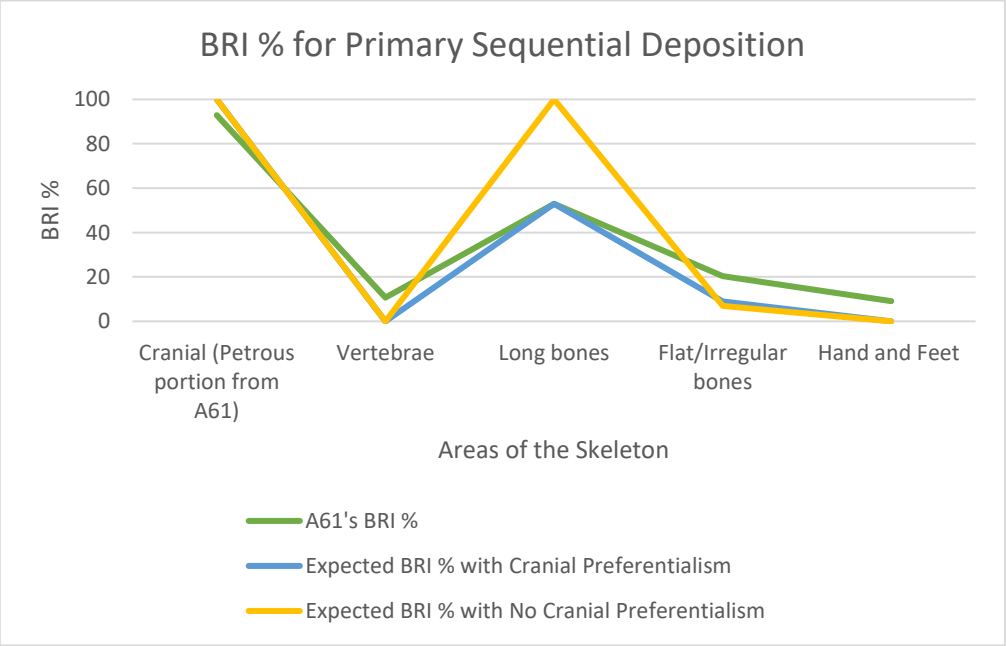


Figure 7.2: The BRI for five key areas of the skeleton from Tomb A61. Then compared to the expected BRI's for a tomb with primary sequential deposition, both with and without cranial preferentialism, as simulated by Robb (2016)

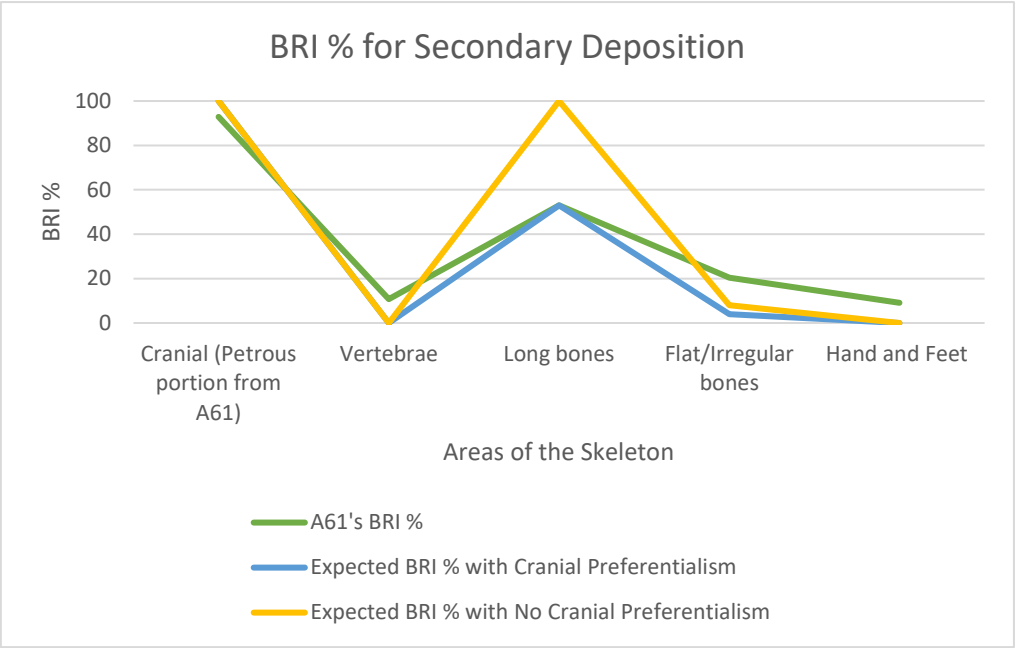


Figure 7.3: The BRI for five key areas of the skeleton from Tomb A61. Then compared to the expected BRI's for a tomb with secondary deposition, both with and without cranial preferentialism, as simulated by Robb (2016)

What is important, is that this evidence suggests that cranial preferentialism was occurring within the tomb layout. In addition, the action of separately bagging skulls during excavation also counts as a post-deposition form of cranial preferentialism. What is less certain, however, is whether the type of burial practice can be confidently determined. Both primary sequential deposition and secondary deposition appear to have a similar effect on the nature of fragmentation (Figure 7.4). Further analysis of excavation reports would be required to assist in accurately determining the burial practices used for Tomb A61.

The final observation was that the BRI for the crania and long bones from Tomb A61 matched the expected BRI for fragments of poor preservation, however the vertebrae, flat or irregular bones, and bones of the hand and feet exhibited a slightly higher BRI than anticipated. To analyse this further, the BRIs from Tomb A61 were compared to the expected BRIs from both poor and excellent levels of preservation (Figure 7.5). In this instance, the selected mode of burial was primary sequential deposition with cranial preferentialism, due to the literary tradition from

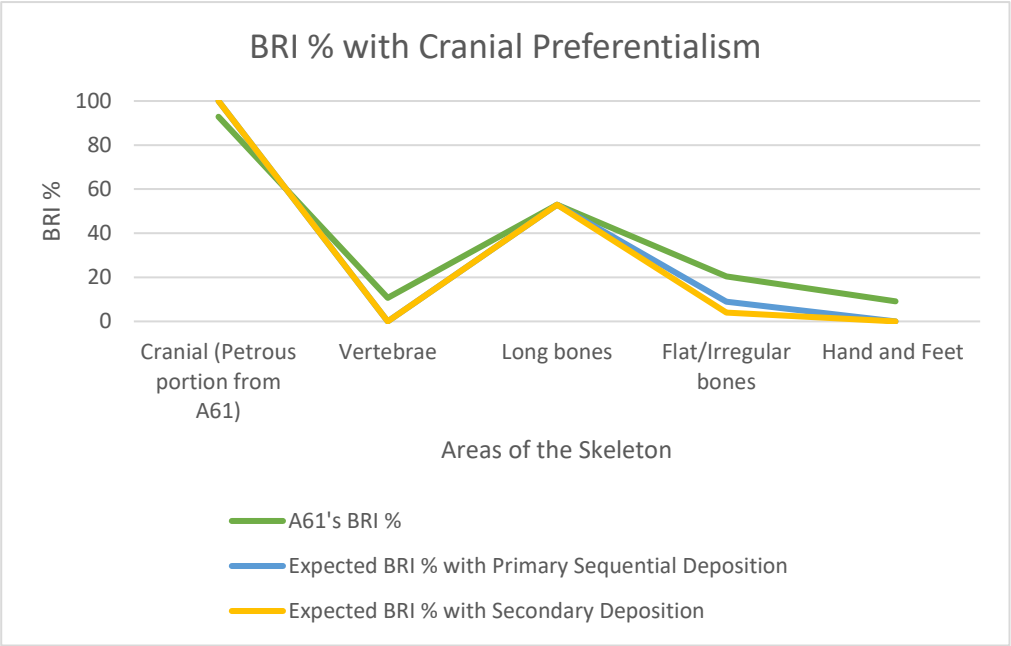


Figure 7.4: The BRI for five key areas of the skeleton from Tomb A61. Then compared to the expected BRI's for a tomb with cranial preferentialism, either of primary sequential and secondary deposition, as simulated by Robb (2016)

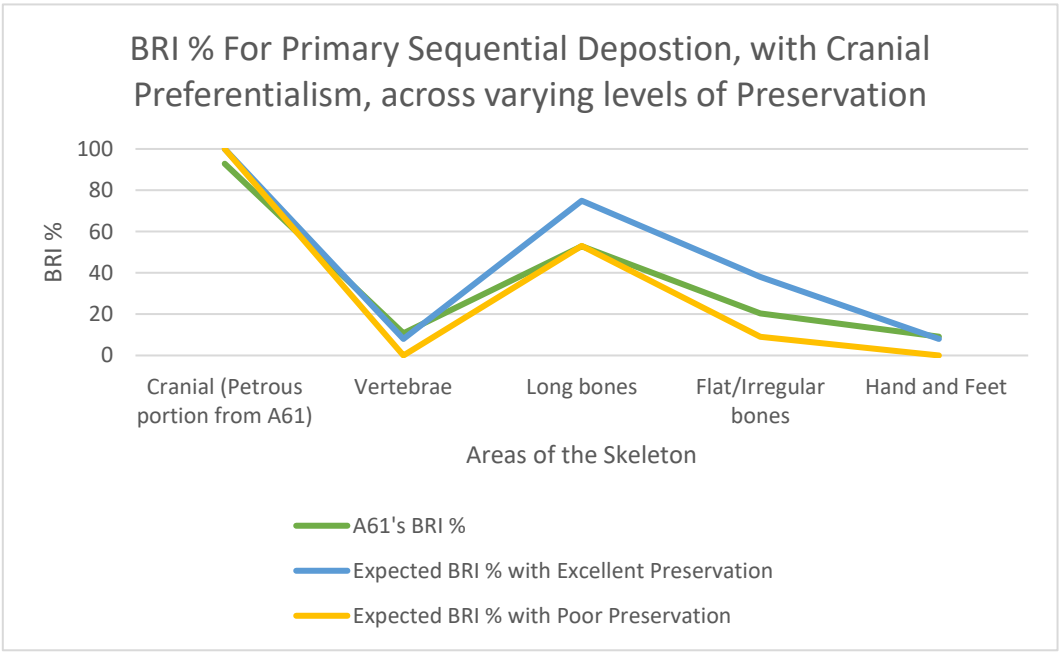


Figure 7.5: The BRI for five key areas of the skeleton from Tomb A61. Then compared to the expected BRI's for a tomb of primary sequential deposition with cranial preferentialism, assessing excellent against poor preservation, as simulated by Robb (2016)

Kenyon (1960b) and in light of the similarity between the two deposition curves in Figure 7.4. The result was a BRI for the crania, vertebrae and bones of the hand and feet, which closely matched expectations for fragmentation of excellent preservation. Meanwhile, the long bones and flat/irregular bones were more closely matched to the curve produced by poor levels of preservation. This may be an indication of a far greater level of preservation upon excavation during the 1950's, but during the transport and storage in the decades since, the larger long and flat/irregular bones have been compressed and more readily disintegrated than the smaller bones.

There are many disadvantages to consider when analysing human skeletal material that is heavily fragmented and commingled, with the belief that the information obtained from such a sample will be insignificant compared to the effort spent analysing it. Yet by undertaking this thesis, it can be demonstrated that the information may prove invaluable when other archaeological resources are scarce. The material may even harbour information unobtainable without the fragmentation.

7.4. Conclusion

The intention of this chapter was to see how the osteological profile created for Tomb A61 could be used to contribute to the further discussions and debates surrounding this material. It is clear that the results produced by this thesis readily contribute to some debates more than others. Further research in the future would be required to obtain a more comprehensive contribution to these debates. Yet it is beneficial to produce an osteoarchaeological profile for EB I Jericho. The results can then be added to the ever-growing literature on both the EB I Southern Levant, and fragmented and commingled human remains, to aid these future studies.

8. Conclusion

The EB I Southern Levant was a time of transition between the non-urban Chalcolithic and the urban EB II. For the living, settlements were predominantly dispersed villages which varied in size and layout. The subsistence economy appeared to have depended on a combination of agriculture, horticulture and pastoralism. Most settlements were sedentary and located in close proximity to permanent water sources, whilst the location of some settlements in more arid regions suggest a continuing level of mobility. Wealth and housing distributions suggest that EB I society was structured on kinships, with influence in the community spreading horizontally along family groups. Regarding the dead, funerary structures were as varied as the settlements. Funerary structures of the EB I contained either single or multiple internments, with their construction requiring varying levels of energy expenditure. Some were simple pits or unmodified caves, some involved modifying natural structures such as caves, and then others were purposely-built subterranean and above ground structures.

Tomb A61 was an EB I tomb from the site of Jericho, located centrally in the Southern Levant. The osteoarchaeological profile developed from a sample of this tomb represented a settlement and population that fit into this image of the EB I Southern Levant. Tomb A61 was a modified underground chamber that contained the burial of multiple individuals, by means of either secondary deposition or primary sequential deposition. The tomb was geographically separated from the settlement, which was positioned a few hundred metres to the south east. The individuals within the tomb were not discriminated by sex or age, suggesting a kinship burial. The presence of caries supports the consumption of food produced by agriculture and horticulture, with the cereals and legumes ground sufficiently to not incur dental wear. There were few pathologies present, but most significantly there was no evidence of diseases that are often associated with populations that are living in close quarters.

The unstudied human skeletal remains from Tomb A61 provided the unique opportunity to analyse legacy data from the site of Jericho. The EB I represents a period of the ancient Southern Levant which is still in active discussion amongst archaeologists. Yet it also represents a bigger issue in archaeology; one that concerns the excavation, curation, study and publication of human remains from the Southern Levant.

Over the course of this thesis, both the lack of clarity regarding interpretations of the EB I Southern Levant, and the disjointed development and study of osteoarchaeology, have been explored. Being representative of both these ongoing archaeological issues, this osteological analysis of the human skeletal remains from Jericho's Tomb A61 was intended to contribute to these discussions. This thesis is merely the beginning of the research that is still required for the human remains from Jericho, but such research will be possible now because a sample of this rapidly deteriorating material has been catalogued and analysed for future scholars to utilise.

8.1. Future Directions

In the last ten years, this lack of integration between osteology and archaeology in the literature has been identified, but little has then been published in the way of closing the gap. Whilst studies in palaeodemography, palaeopathology and palaeodiet are continuing to flood the literature, there is still a long way to go before a uniform approach to osteoarchaeology will be reached. In Australia especially, these two disciplines still struggle to meet, but it is anticipated that this thesis is just the beginning for future undergraduate approaches to human remains in archaeology.

For future research of the Jericho collection stored at the University of Sydney's Nicholson Museum, the next step is to continue cataloguing the remainder of the archaeological material. The human remains are particularly susceptible to destruction, especially after the length of time that has passed since their excavation

in the 1950's. On top of the amount of fragmentation already thought to have occurred since excavation, further degradation was evident on a week-to-week basis when reviewing the remains. As students, the first thing we are taught is that to excavate is to destroy, yet it is through excavation that we learn about the past. It is a delicate balance that all archaeologists must manage in current archaeological fieldwork. What is clear though is that the artefacts, the human remains included, need to be curated and catalogued to the best capability so that the information they hold is not lost forever. For this reason, the fragment-by-fragment catalogue begun in this thesis is already being continued by Callan Birkmann-Little, a University of Sydney PhD Candidate from the Department of Anatomy and Histology. This catalogue will not only then be complete for Tomb A61, but for all human skeletal remains from the tombs housed at the Nicholson Museum at the University of Sydney.

After this catalogue is completed, further research can then be conducted on the skeletal remains from the tombs. For example, research on the various degrees of burning that has occurred to the skeletal material of Tomb A61 is currently underway by Miranda Evans, a current University of Sydney Honours student from the Department of Archaeology. Her thesis is a taphonomic study of the pattern of burning on the bones, to then analyse for any underlying trends that may indicate features of burial practice during the EB I at Jericho. Any local trends will then be compared to other human remains from EB I sites of the Southern Levant which suggest burning was part of the burial practice, to ascertain any interregional trends.

Though aDNA testing was not possible within the restraints of this thesis, this research is also currently underway by Matthew Williams, from the Australian Centre for Ancient DNA at the University of Adelaide. Human teeth from Tomb A61 and Tomb B35 are on loan from the Nicholson Museum to Williams for such genetic testing. This will hopefully provide insight into the genetic profiles for the Jericho population during the EB I and the MB. This study will greatly contribute to the questions regarding population variation discussed in this thesis that were not able to be answered by macroscopic osteology alone.

Teeth are not the only option for testing aDNA however, as current research has shown that samples from the petrous bone in the skull produce comparable, if not better, results than teeth can (Hansen et al., 2017; Pinhasi et al., 2015). This discovery is crucial for future analysis of ancient genetics, as the petrous bone is another highly durable skeletal element which cannot be compromised by dental pathologies like teeth can. It can also be beneficial for the highly fragmented human remains from Jericho. As demonstrated in Tomb A61, the petrous bone formed the MNI for the sample, along with a BRI of 92.86%.

Overall, the combination of these analyses on the skeletal remains, as well as the pottery and the grave goods, would provide a comprehensive study of the Jericho tombs from the Nicholson Museum at the University of Sydney. A single comprehensive study such as this would allow other institutions with parts of the Jericho collection to compare and contribute to for the greater archaeology of the Southern Levant.

All of these future avenues of research for Jericho's Tomb A61 represent the scope still left to be investigated. The information that can be obtained from undertaking osteoarchaeological studies has been explored within this thesis, but it presents just one aspect of the archaeology of Jericho and the EB I Southern Levant. Archaeology is continually becoming increasingly interdisciplinary, with osteoarchaeology representing just one of these interdisciplinary branches. By evaluating the branch of osteoarchaeology, this thesis has contributed to the growing database of ancient human remains from the Southern Levant.

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Appendix A

Distribution list for tombs excavated from Jericho by Kenyon. Images sourced from: (Kenyon, 1983, pp. 638–42)

TOMB CATALOGUE AND DISTRIBUTION LIST

VARIOUS queries have been made during the last three years of work on the Jericho publication in Cambridge, concerning various objects from the tombs and their location, for the purpose of further research. As a distribution list was not published in either of the volumes dealing with the tomb material, *Jericho I* and *II*, it is appended here.

In some instances, the objects from an individual tomb have been distributed to more than one location and this is noted in the catalogue below. Only the tombs, either intact or robbed, which had material have been listed in the catalogue. The general period of the burial goods is recorded in the second column and their location is listed in the third column. The abbreviations of the towns and cities are also listed below, giving the names of the institutions to which material was sent at the end of each excavation season. Space here does not allow for a detailed record of individual objects from each tomb, but the tomb register of finds is now permanently assigned to the Cambridge University Museum of Archaeology and Anthropology, where it may be consulted for more complete information.

ABBREVIATIONS

Am	Amman (The National Museum)
At	Atlanta (Emory University, Georgia, USA)
B	Birmingham (City Museums and Art Gallery)
C(U)	Cambridge (University Museum of Archaeology and Anthropology)
C(P)	Cambridge, Mass. (Peabody Museum, Harvard University)
D(T)	Dublin (Trinity College)
D(U)	Durham (The University)
E	Edinburgh (The University)
G	Glasgow (The University)
J(A)	Jerusalem (The American School of Oriental Research)
J(E)	Jerusalem (École Biblique de S. Étienne)
J(P)	Jerusalem (The Palestine Archaeological Museum)
L(C)	Leeds (City Museum)
L(U)	Leeds (The University)
Le	Leiden (Oudheidkundig Museum)
Li	Liverpool (The University, Institute of Archaeology)
Lo(I)	London (The University, Institute of Archaeology)
Lo(B)	London (The British Museum)
LM	Jericho (The local museum, Khirbat al Mafjar)
Lu	Lund (The University)
M	Melbourne (Australian Institute of Archaeology)
M(U)	Manchester (The University)

O	Oxford (The Ashmolean Museum)
R	Rome (Pontifical Biblical Institute)
SA	St Andrews (The University Museum)
St	Stockholm (Medelhavsmuseet)
Sy	Sydney (The University)
T	Toronto (Royal Ontario Museum)

TOMB CATALOGUE AND DISTRIBUTION LIST

Tomb no.	*Period*	*Location*	*Tomb no.*	*Period*	*Location*
A 1	MB	J(A)	A 127	EB.I	Am
A 12	MB	C(U)	A 128	EB–MB(D)	M
A 13	EB.I	O	A 129	EB–MB(D)	D(T), T
A 15	MB	Am	A 130	EB–MB(M)	T
A 20	MB	Am	A 131	EB–MB(D)	B
A 23	EB–MB(D)	J(A)	A 132	EB–MB(D)	B
A 26	EB–MB(D)	B	A 133	EB–MB(D)	M
A 28	EB–MB(D)	Sy	A 134	MB	Am
A 30	Prob. EB	R	A 136	EB–MB	L(U)
A 34	MB	B	A 142	EB–MB	D(T)
A 38	MB	O			
A 46	MB	J(A)	B 1	MB	R
A 51	MB	C(U)	B 3	MB	Am
A 61	PU	Sy	B 5	EB–MB(P)	R
A 72	EB–MB(D)	Am	B 12	Roman	Am
A 82	EB–MB(D)	SA	B 14	EB–MB(D)	Sy
A 84	PU	J(A)	B35	MB	Sy
A 85	EB.I	O	B 44	EB–MB(D)	M
A 86	EB–MB(D)	Li	B 45	EB–MB(P)	D(T)
A 91	EB–MB(D)	D(T)	B 46	MB	Am
A 94	PU	Am, B, C(U),	B 47	MB	Sy
		D(T), J(A),	B 48	MB	Am, T
		Li, M, O, SA	B 50	MB	At
A 94II	PU	Am, L(C)	B 51	MB	Am, B, M(U)
A 95	EB–MB(D)	Am	B 52	EB–MB	D(U)
A 100	MB	Am			
A108	EB	Am	C 1	Roman	Sy
A 110	EB–MB(D)	L(U)			
A 111	EB–MB(D)	O	D 1	EB–MB(SS)	Am
A 113	EB–MB	J(A)	D 2	EB–MB(SS)	M
A 114	PU, EB III	G, J(A)	D 4	EB–MB	SA
A 117	EB–MB(P)	J(A)	D 5	EB–MB(SS)	Le, T
A 122	EB	Li	D 6	MB	M
A 123	EB–MB	Am, Li	D 7	PN	C(U)
A 124	PU	Am	D 8	PN	C(U)

Tomb no.	*Period*	*Location*
D 9	MB	J(A), SA
D 10	EB–MB(SS)	B
D 11	EB–MB(P)	Lo(I)
D 12	EB	Am, C(U), D(U), L(U), Li, M, T
D 13	MB	Li
D 15	EB–MB	J(A)
D 20	EB–MB	Am
D 22	MB	Am
E 1	MB	Sy
E 4	EB–MB, MB	C(U)
F 2	EB	Am, J(A), Sy
F 3	EB	C(U), D(T), E, G, L(C), Li
F 4	EB	Am, At, B, C(P), Lo(I), M, O, SA, Sy
F 5	EB	Am
G 1	MB	B
G 2	MB, Roman	Am
G 5	Roman	J(A)
G 7	MB	J(A)
G 8	EB–MB(?P)	Lo(I)
G 16	EB–MB(?P)	Am
G 18	EB–MB(P)	Am
G 23	EB–MB(P)	D(T)
G 26	EB–MB(P)	D(T)
G 27	EB–MB(P)	Am, B
G 28	EB–MB(P)	J(A)
G 29	EB–MB(P)	Am, O
G 31	EB–MB(?P)	Lo(I)
G 33	EB–MB	J(A)
G 36	EB–MB(P)	C(U)
G 37	EB–MB	O, SA
G 39	EB–MB(P)	M
G 40	EB–MB(P)	Li
G 42	EB–MB(P)	Am
G 44	EB–MB(P)	Lo(I)
G 46	EB–MB	Am
G 50	EB–MB	Sy
G 52	EB–MB(P)	Am, M
G 53	EB–MB(P)	M
G 57	EB–MB(?P)	Am, L(U)
G 58	EB–MB(P)	SA
G 63	EB–MB(P)	At
G 64	EB–MB(P)	Am, L(U)
G 65	EB–MB(P)	SA
G 66	Roman	J(A)
G 68	Roman	M
G 70	EB–MB(P)	Lo(I)
G 73	MB	C(U), O
G 74	EB–MB(D)	C(U), O
G 75	EB–MB(P)	L(C)
G 76	EB–MB(P)	Lo(I)
G 77	EB–MB(P)	Le
G 81	Roman	O
G 82	MB	Le
H 2	EB–MB(P)	Li
H 3	EB–MB(P)	J(A)
H 4	EB–MB(P)	B
H 5	EB–MB(P)	Am
H 6	EB–MB(P)	J(P)
H 7	EB–MB(P)	Am
H 8	EB–MB(P)	Lo(I)
H 9	EB–MB(P)	J(P)
H 10	EB–MB(P)	O
H 11	EB–MB(P)	St
H 12	EB–MB(P)	SA
H 13	EB–MB(P)	Am, M
H 14	EB–MB(P)	M
H 15	EB–MB(P)	L(U)
H 16	EB–MB(P)	C(U)
H 17	EB–MB(P)	J(A)
H 18	EB–MB(P)	Am
H 19	EB–MB(P)	Sy
H 20	EB–MB(P)	Am, C(U), J(A), Li, Lo(I), Sy
H 21	EB–MB(P)	Sy
H 22	EB–MB(P)	Lu
H 23	Roman	Am, Sy

Tomb no.	*Period*	*Location*
J 1	EB–MB	Am
J 3	EB–MB	Am
J 4	EB–MB	L(U)
J 7	MB	Li
J 9	MB	M
J 11	EB–MB(P)	Le
J 12	MB	C(U)
J 14	EB–MB	Am, B
J 15	EB–MB(P)	Sy
J 17	EB–MB(P)	G
J 19	MB	J(A)
J 20	EB–MB	Le, T
J 21	EB–MB(P)	J(A)
J 28	EB–MB(P)	At
J 37	EB–MB	L(U)
J 39	MB	SA
J 41	Roman	LM
J 42	MB	At
J 45	MB	J(A)
J 54	MB	Am, M
K 1	PU	At
K 2	PU	B, Le, T
K 3	MB	B
K 5	EB–MB	SA
K 22	EB–MB(M)	M
K 23	Roman	O
K 24	EB–MB(M)	T
K 26	EB–MB	At
K 27	EB–MB(D)?	Lo(I)
K 28	EB–MB(D)?	SA
L 1	EB–MB(D)	J(A)
L 2	EB–MB(SS)	Am
L 3	EB–MB(D)	Le
L 4	EB–MB(D)	SA
L 5	EB–MB(D)	L(C)
L 6	EB–MB(D)	C(U)
L 7	EB–MB(D)	D(U)
L 8	EB–MB	M
M 1	EB–MB(P)	D(U)
M 4	EB–MB(P)	L(U)
M 5	EB–MB(P)	L(U)
M 6	EB–MB(P)	L(C)
M 8	EB–MB(P)	Lo(I)
M 9	EB–MB(P)	SA
M 10	EB–MB(P)	Le
M 11	MB	SA
M 12	EB–MB(C)	Lo(I)
M 13	EB–MB(C)	Am
M 14	EB–MB(C)	O
M 16	EB–MB(C)	O
M17	EB–MB(C)	Lo(I)
M 18	EB–MB(M)	D(U)
M 19	EB–MB(P)	M
M 20	EB–MB	L(U)
N.S.1	Roman	D(T), J(A), L(U), Sy
N.S.2	Roman	Sy
N 2	EB–MB(M)	Lo(I)
N 4	EB–MB(M)	Lo(I)
O 1	EB–MB(O)	Am
O 4	EB–MB(O)	Am, At, B, O, SA, T
O +	MB	R
P 1	MB	At
P 2	EB–MB	L(U)
P 3	EB–MB	Am, Le, T
P 4	EB–MB	D(T)
P 5	EB–MB	J(E)
P 6	EB–MB	L(U)
P 9	EB–MB	Li
P 10	EB–MB	At
P 12	EB–MB	Am, At, B, L(U), Lo(I), O, SA
P 15	EB–MB	Lo(I)
P 16	EB–MB	D(T)
P 17	MB	Am
P 19	MB	Lo(B)

Tomb no.	*Period*	*Location*	*Tomb no.*	*Period*	*Location*
P 21	MB	Am	P 29	Roman	L(C), SA
P 22	MB	At, D(U), Le	P 30	EB–MB	Lo(I)
P 23	MB	Le			
P 24	EB–MB	Am, At, B, D(T), Le, O	W.H.1	EI.II	Am, C(U), J(A), Sy
P 25	EB–MB	D(T)	W.H.1 +	EI.II	J(A)
P 26	EB–MB	D(U)	W.H.2	EI.II	J(A)
P 27	EB–MB	Lo(I)	W +	EB–MB	B

Appendix B

List of Fragments Diagnostic of Sex:

Fragment Reference No.	Bone	Segment	Side	Sex (1-5)	Reference
NM2008.187.177	Mandible	Mental eminence	n/a	4	Buikstra and Ubelaker 1994:20
NM2008.188.40	Temporal	Mastoid	Left	3	“”
NM2008.188.257	Frontal	Right superior orbital ridge	n/a	2	“”
NM2008.188.323	Temporal	Mastoid	Right	1	“”
NM2008.188.331	Frontal	Left superior orbital ridge	n/a	2	“”
NM2008.188.332	Temporal	Mastoid	Right	3	“”
NM2008.188.348	Frontal	Left superior orbital ridge	n/a	1	“”
NM2008.188.379	Temporal	Mastoid	Left	3	“”
NM2008.188.387	Frontal	Glabella and superior orbital ridges	n/a	4	“”
NM2008.188.406	Frontal	Left superior orbital ridge	n/a	5	“”
NM2008.188.417	Occipital	Nuchal region	n/a	5	“”
NM2008.189.20	Innominate	Greater sciatic notch	Left	3	Buikstra and Ubelaker 1994:18
NM2008.189.282	Mandible	Mental eminence	n/a	2	Buikstra and Ubelaker 1994:20
NM2008.189.283	Frontal	Right superior orbital margin	n/a	2	“”
NM2008.189.317	Frontal	Left superior orbital ridge	n/a	4	“”
NM2008.189.323	Occipital	Nuchal region	n/a	3	“”
NM2008.189.324	Temporal	Mastoid	Right	3	“”
NM2008.189.332	Temporal	Mastoid	Right	4	“”
NM2008.189.333	Temporal	Mastoid	Left	4	“”
NM2008.189.336	Frontal	Right superior orbital margin	n/a	2	“”
NM2008.189.358	Frontal	Left superior orbital ridge	n/a	4	“”
NM2008.189.359	Temporal	Mastoid	Left	5	“”
NM2008.189.360	Temporal	Mastoid	Right	5	“”
NM2008.189.346	Occipital	Nuchal region	n/a	4	“”

Appendix C

List of Juvenile Fragments Diagnostic of Age:

Fragment Reference No.	Bone	Segment	Side	Age Range (years)	Reference
NM2008.187.32	Maxilla	LPM[1] and LC[1]	Left	5 ± 1.5	Schaefer, Scheuer, and Black 2009:94-5
NM2008.187.33	Maxilla	RPM[1] and RC[1]	Right	5 ± 1.5	Schaefer, Scheuer, and Black 2009:94-5
NM2008.187.41	Radius	Proximal diaphysis	Unknown	14.40	Cardoso et al.
NM2008.187.42	Femur	Proximal epiphysis	Unknown	≤19	Schaefer, Scheuer, and Black 2009:276
NM2008.187.75	Calcaneus	Epiphyseal surface	Unknown	≤18	Schaefer, Scheuer, and Black 2009:335
NM2008.187.115	Femur	Proximal diaphysis	Left	1.34	Cardoso et al.
NM2008.187.116	Femur	Proximal diaphysis	Left	5.47	Cardoso et al.
NM2008.187.117	Femur	Greater trochanter epiphysis	Unknown	≤19	Schaefer, Scheuer, and Black 2009:276
NM2008.187.118	Femur	Distal epiphysis	Unknown	≤20	Schaefer, Scheuer, and Black 2009:276
NM2008.187.119	Radius	Proximal diaphysis	Unknown	4.46	Cardoso et al.
NM2008.187.120	Radius	Fusing distal epiphysis	Left	14-22	Schaefer, Scheuer, and Black 2009:119
NM2008.187.121	4th Metatarsal	Diaphysis	Left	≤16	Schaefer, Scheuer, and Black 2009:335
NM2008.187.153	Ulna	Proximal diaphysis	Left	≤18	Schaefer, Scheuer and Black 2009:213
NM2008.187.154	Ulna	Proximal diaphysis	Right	4.44	Cardoso et al.
NM2008.187.176	Mandible	Lm_2 - Ri_2	n/a	4-6 ± 2yrs	Schaefer, Scheuer, and Black 2009:94-5
NM2008.187.188	Innominate	Ileum	Right	≤18	Schaefer, Scheuer, and Black 2009:253
NM2008.187.189	Innominate	Ischium	Left	≤18	Schaefer, Scheuer, and Black 2009:253
NM2008.187.198	Metacarpal/ metatarsal	Diaphysis	Unknown	≤16.5	Schaefer, Scheuer, and Black 2009:228
NM2008.187.203	Hand phalanx	Diaphysis	Unknown	≤16.5	Schaefer, Scheuer, and Black 2009:228
NM2008.187.237	Innominate	Iliac crest	Unknown	≤16.5	Schaefer, Scheuer, and Black 2009:253
NM2008.187.242	Clavicle	Medial diaphysis	Left	≤29	Schaefer, Scheuer, and Black 2009:150
NM2008.188.22	Ulna	Proximal diaphysis	Right	3.98	Cardoso et al.
NM2008.188.23	Ulna	Proximal diaphysis	Left	3.06	Cardoso et al.

NM2008.188.42	Maxilla	Unerupted I^1	Unknown	6 ± 2	Schaefer, Scheuer, and Black 2009:94-5
NM2008.188.55	$3^{rd}/4^{th}$ Metatarsal	Diaphysis	Left	≤16	Schaefer, Scheuer, and Black 2009:335
NM2008.188.57	4^{th} Metatarsal	Diaphysis	Right	≤16	Schaefer, Scheuer, and Black 2009:335
NM2008.188.58	4^{th} Metatarsal	Diaphysis	Left	≤16	Schaefer, Scheuer, and Black 2009:335
NM2008.188.63	Hand Phalanx	Diaphysis	Unknown	≤16.5	Schaefer, Scheuer, and Black 2009:228
NM2008.188.82	Tibia	Proximal diaphysis and epiphysis	Right	≤20	Schaefer, Scheuer, and Black 2009:225
NM2008.188.83	Tibia	Distal epiphysis	Unknown	≤18	Schaefer, Scheuer, and Black 2009:225
NM2008.188.84	Humerus	Distal diaphysis	Unknown	≤18	Schaefer, Scheuer, and Black 2009:183
NM2008.188.85	Vertebra	Body	n/a	≤4	Schaefer, Scheuer, and Black 2009:119
NM2008.188.86	Vertebra	Body	n/a	≤25	Schaefer, Scheuer, and Black 2009:120
NM2008.188.87	Vertebra	Body	n/a	≤25	Schaefer, Scheuer, and Black 2009:120
NM2008.188.88	Vertebra	Body	n/a	≤25	Schaefer, Scheuer, and Black 2009:120
NM2008.188.91	Hand Phalanx	Diaphysis	Unknown	≤16.5	Schaefer, Scheuer, and Black 2009:228
NM2008.188.92	Hand Phalanx	Diaphysis	Unknown	≤16.5	Schaefer, Scheuer, and Black 2009:228
NM2008.188.93	Metacarpal/ metatarsal	Diaphysis	Unknown	≤16	Schaefer, Scheuer, and Black 2009:335
NM2008.188.94	Femur/ Humerus	Proximal epiphysis	Unknown	≤21	Schaefer, Scheuer, and Black 2009:183
NM2008.188.97	Innominate	Ischium	Unknown	≤10	Schaefer, Scheuer, and Black 2009:253
NM2008.188.110	Femur/ Humerus	Proximal epiphysis	Unknown	≤21	Schaefer, Scheuer, and Black 2009:183
NM2008.188.115	Mandible	$RM^{1/2}$-$RM^{2/3}$	n/a	≤12 ± 2.5	Schaefer, Scheuer, and Black 2009:95
NM2008.188.117	Tooth	Forming PM^1	Unknown	5-6 ± 2	Schaefer, Scheuer, and Black 2009:94-5
NM2008.188.118	Tooth	Forming PM^2	Unknown	5-6 ± 2	Schaefer, Scheuer, and Black 2009:94-5
NM2008.188.119	Tooth	Forming M_2	Unknown	4-6 ± 2	Schaefer, Scheuer, and Black 2009:94-5
NM2008.188.141	Tibia	Proximal diaphysis and epiphysis	Right	12.36	Cardoso et al.
NM2008.188.142	Femur	Proximal diaphysis	Unknown	1.09	Cardoso et al.
NM2008.188.143	Femur/ Humerus	Proximal epiphysis	Unknown	≤21	Schaefer, Scheuer, and Black 2009:183
NM2008.188.144	Femur	Proximal diaphysis	Unknown	≤20	Schaefer, Scheuer, and Black 2009:295
NM2008.188.145	Phalanx	Diaphysis	Unknown	≤16	Schaefer, Scheuer, and Black 2009:228
NM2008.188.149	Ulna	Proximal diaphysis	Left	≤18	Schaefer, Scheuer, and Black 2009:213

NM2008.188.204	Innominate	Ischium	Left	≤18	Schaefer, Scheuer, and Black 2009:253
NM2008.188.206	Femur	Proximal diaphysis	Right	10.15	Cardoso et al.
NM2008.188.207	Femur	Proximal epiphysis	Unknown	12.13	Cardoso et al.
NM2008.188.208	Femur	Proximal diaphysis	Left	2.06	Cardoso et al.
NM2008.188.234	Femur	Proximal diaphysis	Left	1.72	Cardoso et al.
NM2008.188.235	Femur	Proximal diaphysis	Right	1.60	Cardoso et al.
NM2008.188.236	Vertebra	Body	n/a	≤25	Schaefer, Scheuer, and Black 2009:120
NM2008.188.237	Vertebra	Body	n/a	≤25	Schaefer, Scheuer, and Black 2009:120
NM2008.188.238	Vertebra	Body	n/a	≤25	Schaefer, Scheuer, and Black 2009:120
NM2008.188.239	Innominate	Ischium	Unknown	≤10	Schaefer, Scheuer, and Black 2009:253
NM2008.188.240	Innominate	Iliac crest	Unknown	≤23	Schaefer, Scheuer, and Black 2009:253
NM2008.188.243	Fibula	Distal diaphysis	Unknown	10.46	Cardoso et al.
NM2008.188.246	Femur	Proximal diaphysis	Right	≤20	Schaefer, Scheuer, and Black 2009:295
NM2008.188.247	Innominate	Iliac crest	Unknown	≤23	Schaefer, Scheuer, and Black 2009:253
NM2008.188.248	Calcaneous	Epiphyseal surface	Unknown	≤20	Schaefer, Scheuer, and Black 2009:335
NM2008.188.351	Innominate	Iliac crest	Unknown	≤23	Schaefer, Scheuer, and Black 2009:253
NM2008.188.368	Femur	Proximal diaphysis	Unknown	Fetal	Cardoso et al.
NM2008.188.393	Occipital	Sphenoocciptial synchondrosis	n/a	4y7m - 18	Schaefer, Scheuer, and Black 2009:13,15
NM2008.189.14	Innominate	Ischium	Right	9-10	Rissech et al.
NM2008.189.15	Phalanx	Diaphysis	Unknown	≤16.5	Schaefer, Scheuer, and Black 2009:228
NM2008.189.16	Femur	Proximal diaphysis	Left	≤19	Schaefer, Scheuer, and Black 2009:276
NM2008.189.17	Tibia	Proximal diaphysis	Left	≤20	Schaefer, Scheuer, and Black 2009:295
NM2008.189.43	Hand Phalanx	Diaphysis	Unknown	≤16.5	Schaefer, Scheuer, and Black 2009:228
NM2008.189.56	Ulna	Proximal diaphysis	Right	6.30	Cardoso et al.
NM2008.189.83	Femur	Proximal diaphysis	Unknown	1-5	Schaefer, Scheuer, and Black 2009:276 Cardoso et al.
NM2008.189.93	Femur	Distal diaphysis and epiphysis	Right	≤20	Schaefer, Scheuer and Black 2009:276
NM2008.189.94	Femur	Distal epiphysis	Unknown	≤20	Schaefer, Scheuer and Black 2009:276

NM2008.189.95	Humerus	Distal diaphysis	Right	≤18	Schaefer, Scheuer and Black 2009:183
NM2008.189.96	Innominate	Iliac crest	Unknown	≤23	Schaefer, Scheuer and Black 2009:253
NM2008.189.97	Vertebra	Body	n/a	≤25	Schaefer, Scheuer and Black 2009:120
NM2008.189.98	Tibia	Proximal epiphysis	Unknown	≤20	Schaefer, Scheuer and Black 2009:295
NM2008.189.99	Humerus	Proximal epiphysis	Left	14.16	Cardoso et al.
NM2008.189.121	Innominate	Ischium	Right	9-10	Rissech et al.
NM2008.189.134	Metacarpal	Diaphysis	Unknown	≤16.5	Schaefer, Scheuer and Black 2009:228
NM2008.189.137	Foot Phalanx	Diaphysis	Unknown	≤18	Schaefer, Scheuer and Black 2009:335
NM2008.189.143	Ulna	Proximal diaphysis	Left	≤18	Schaefer, Scheuer and Black 2009:213
NM2008.189.151	Radius	Proximal diaphysis	Right	9.66	Cardoso et al.
NM2008.189.157	Femur	Distal diaphysis	Right	7.36	Cardoso et al.
NM2008.189.179	Mandible	RM_2 - RPM_1	n/a	7-9 ± 2	Schaefer, Scheuer and Black 2009:95
NM2008.189.182	Mandible	Rm_2-Rc	n/a	2-3 ± 1	Schaefer, Scheuer and Black 2009:94
NM2008.189.185	Vertebra	Body	n/a	≤25	Schaefer, Scheuer and Black 2009:120
NM2008.189.193	Humerus	Distal diaphysis	Right	8.65	Cardoso et al.
NM2008.189.194	Humerus	Diaphysis	Left	2	Schaefer, Scheuer and Black 2009:174 Cardoso et al.
NM2008.189.195	Femur	Proximal diaphysis	Left	10.33	Cardoso et al.
NM2008.189.196	Femur	Proximal diaphysis	Unknown	1.47	Cardoso et al.
NM2008.189.197	Femur	Proximal diaphysis	Unknown	0.27	Cardoso et al.
NM2008.189.198	Femur	Proximal diaphysis and epiphysis	Unknown	11.41-12.49	Cardoso et al.
NM2008.189.199	Femur	Proximal diaphysis	Unknown	2.6	Cardoso et al.
NM2008.189.200	Vertebra	Body	n/a	≤25	Schaefer, Scheuer and Black 2009:120
NM2008.189.201	Vertebra	Body	n/a	≤25	Schaefer, Scheuer and Black 2009:120
NM2008.189.204	Tibia	Proximal diaphysis	Unknown	1.38	Cardoso et al.
NM2008.189.209	Vertebra	Body	n/a	≤25	Schaefer, Scheuer and Black 2009:120
NM2008.189.257	Ulna	Proximal diaphysis	Right	4.91	Cardoso et al.
NM2008.189.259	Ulna	Proximal diaphysis	Left	1.77	Cardoso et al.

NM2008.189.260	Ulna	Proximal diaphysis	Left	≤18	Schaefer, Scheuer and Black 2009:213
NM2008.189.269	Tibia	Proximal diaphysis	Right	1.51	Cardoso et al.
NM2008.189.295	Maxilla	Li^1 - Lm^2	Left	3 ± 1	Schaefer, Scheuer and Black 2009:94
NM2008.189.296	Maxilla	Ri^2 - Rm^2	Right	3 ± 1	Schaefer, Scheuer and Black 2009:94
NM2008.189.297	Tooth	Forming I^1	Right	3 ± 1	Schaefer, Scheuer and Black 2009:94
NM2008.189.340	Mandible	Lm_1 - LM_1	n/a	6-8 ± 2	Schaefer, Scheuer and Black 2009:95
NM2008.189.341	Maxilla	Forming PM	Unknown	8-9 ± 2	Schaefer, Scheuer and Black 2009:95
NM2008.189.342	Tooth	Forming M^2	Unknown	5-7 ± 2	Schaefer, Scheuer and Black 2009:94-5
NM2008.189.343	Tooth	Forming M_2	Unknown	5-7 ± 2	Schaefer, Scheuer and Black 2009:94-5

Appendix D

List of Fragments with Pathologies:

Fragment Reference No.	Bone	Segment	Side	Pathology Present	Reference
NM2008.187.35	Tooth	I_2	Right	Linear Enamel Hypoplasia (LEH)	(White & Folkens, 2005):329
NM2008.187.37	Tooth	Premolar	Unknown	Occlusal cavity	(White & Folkens, 2005):329
NM2008.187.153	Ulna	Proximal shaft	Left	Osteophytic growth	(White & Folkens, 2005):318
NM2008.187.170	Tooth	Premolar	Unknown	LEH	(White & Folkens, 2005):329
NM2008.187.171	Tooth	Canine	Right	LEH	(White & Folkens, 2005):329
NM2008.187.177-8	Mandible	LI_2 - RM_3	n/a	RM_2 AMTL	(Grauer, 2011, p. 560)
NM2008.188.3	Tooth	Molar	Unknown	Occlusal cavity	(White & Folkens, 2005):329
NM2008.188.336	Tooth	PM^3	Left	LEH	(White & Folkens, 2005):329
NM2008.188.352	Tooth	PM_3	Right	LEH	(White & Folkens, 2005):329
NM2008.189.5	Mandible	Right condyle to RC	n/a	RM_1 and RM_2 AMTL	(Grauer, 2011, p. 560)
NM2008.189.28	Vertebra	Lumbar, body	n/a	Osteophytic lipping (OL)	(White & Folkens, 2005):326
NM2008.189.103	Vertebra	Lumbar, body	n/a	OL 5mm	(White & Folkens, 2005)
NM2008.189.109	Vertebra	Body	n/a	OL 2mm, compression 18→25mm	(White & Folkens, 2005):326
NM2008.189.174	Tooth	PM_3	Unknown	LEH	(White & Folkens, 2005):329
NM2008.189.175	Tooth	I_2	Right	Cavity	(White & Folkens, 2005):329
NM2008.189.179	Mandible	RM_2-RPM_1	n/a	Rm_2 AMTL, RM_1 porous alveolar	(Grauer, 2011, p. 560)
NM2008.189.207	Vertebra	Axis/C2	n/a	Impacted dens	(White & Folkens, 2005):312
NM2008.189.283	Frontal	Right orbital roof	n/a	Cribra orbitalia	(White & Folkens, 2005):322
NM2008.189.292	Vertebra	Body	n/a	OL 5mm	(White & Folkens, 2005):326

Appendix E

List of Fragments with Non-Metric Variation:

Fragment Reference No.	Bone	Segment	Side	Non-Metric Variation	Reference
NM2008.187.145	Humerus	Olecranon fossa	Left	Septal aperture	(Finnegan, 1978)
NM2008.187.204	Talus	-	Left	Extended neck angle	(Lisowski et al., 1957)
NM2008.188.67	Talus	Plantar surface	Right	Singular articular facet	Schaefer et al. 2009
NM2008.188.122	Tooth	Molar fragment	Unknown	Carabelli's cusp	(Harris, 2007)
NM2008.188.303	Skull	-	n/a	Extra-sutural bone	Buikstra and Ubelaker 1994
NM2008.188.311	Frontal	Glabella	n/a	Metopic/ supranasal suture	Buikstra and Ubelaker 1994
NM2008.188.331	Frontal	Left superior orbital margin	n/a	Supraorbital spur	Buikstra and Ubelaker 1994
NM2008.188.348	Frontal	Glabella	n/a	Metopic/ supranasal suture	Buikstra and Ubelaker 1994
NM2008.189.21	Clavicle	Mid-shaft	Right	Transclavicular canal	(Jelev & Surchev, 2007)
NM2008.189.58	Humerus	Olecranon fossa	Left	Septal aperture	(Finnegan, 1978)
NM2008.189.226	Clavicle	Mid-shaft	Unknown	Transclavicular canal	(Jelev & Surchev, 2007)
NM2008.189.283	Frontal	Right superior orbital margin	n/a	Supraorbital notch	Buikstra and Ubelaker 1994
NM2008.189.317	Frontal	Left superior orbital margin	n/a	Supraorbital notch	Buikstra and Ubelaker 1994
NM2008.189.334	Frontal	Glabella	n/a	Metopic/ supranasal suture	Buikstra and Ubelaker 1994
NM2008.189.358	Frontal	Glabella and left superior orbital margin	n/a	Metopic/ supranasal suture + notch	Buikstra and Ubelaker 1994

Appendix F

Catalogue for the sample of skeletal remains from Tomb A61, Jericho, that are held at the Nicholson Museum, University of Sydney:

REF	Reg No.	Bag no.	Tomb No.	Label	Identification	Description	Zone	Side	Preservation %	Notes	Weight/Count	Age/Sex	Extra Info/Reference
2	NM2008.187	1	A61	General Bones 17/3/52 EWH	Unidentified fragments		n/a	n/a	n/a		837.03g		
3	NM2008.187	2	A61	General Bones 17/3/52 EWH	Clavicle	Lateral component	2,3	Left	75-100				
4	NM2008.187	2	A61	General Bones 17/3/52 EWH	Clavicle	Lateral component		2 Left	25-75				
5	NM2008.187	2	A61	General Bones 17/3/52 EWH	Clavicle	Mid-section		3 Right	0-25				
6	NM2008.187	2	A61	General Bones 17/3/52 EWH	Scapula	Glenoid fossa, neck and upper lateral border	2,3,5,7	Left	0-25				
7	NM2008.187	2	A61	General Bones 17/3/52 EWH	Scapula	Partial superior border		6 Unknown	0-25				
8	NM2008.187	2	A61	General Bones 17/3/52 EWH	Rib	Unknown; mid-section		3 Right	0-25	Burnt			
9	NM2008.187	2	A61	General Bones 17/3/52 EWH	Innominate	Unknown	n/a	Unknown	0-25				
10	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Sacral; body only		1 n/a	25-75				
11	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Sacral; partial body only		1 n/a	25-75	Possible indentation for juvenile			
12	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Thoracic; body, one pedicle and superior articular process	1,2or3	n/a	25-75	Burnt			
13	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	C1; Right superior/inferior facets and transverse foramen		2 n/a	25-75				
14	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	C2; Left superior/inferior facets, transverse foramen & posterior arch		3 n/a	25-75				
15	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Cervical; transverse foramen & superior/inferior articular processes	2,3	n/a	0-25				
16	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Cervical; superior/inferior articular processes and lamina	2,3	n/a	0-25				note 3 animal bones in bag 2
17	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Cervical; C1 or C2 as articular facet present	2or3	n/a	0-25				
18	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	25-75	body shape/size suggests cervical			
19	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	25-75	body shape/size suggests cervical			
20	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	25-75	body shape/size suggests cervical			
21	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	25-75	body shape/size suggests cervical			
22	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	25-75	body shape/size suggests cervical			
23	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	0-25				
24	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	25-75	Very porous appearance; burnt			
25	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	25-75				
26	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; body only		1 n/a	25-75				
27	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Thoracic; laminae and spine only		4 n/a	25-75	Spine not bifed or wide			
28	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Cervical; laminae only		4 n/a	0-25				
29	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Thoracic; spine and partial lamina only		4 n/a	25-75	Burnt; spine not bifed or flat			
30	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; single articular process and lamina only	2or3	n/a	0-25				
31	NM2008.187	2	A61	General Bones 17/3/52 EWH	Vertebra	Unknown; segment unknown	n/a	n/a	0-25				
32	NM2008.187	3	A61	General Bones 17/3/52 EWH	Skull	Maxilla; PM^1 and C^1 crowns only		1 Right	25-75	both crowns unerupted with canine above pm still		5 ± 1.5 years	matches 33
33	NM2008.187	3	A61	General Bones 17/3/52 EWH	Skull	Maxilla; PM^1 and C^1 crowns only		1 Left	25-75	both crowns unerupted with canine above pm still		5 ± 1.5 years	matches 32
34	NM2008.187	3	A61	General Bones 17/3/52 EWH	Molar	Most likely deciduous 1st or 2nd molar		1 Unknown	100				
35	NM2008.187	3	A61	General Bones 17/3/52 EWH	Incisor	RI_2; Crown; in 2 articulating fragments		7 Right	25-75	LEH			
36	NM2008.187	3	A61	General Bones 17/3/52 EWH	Incisor	Crown; fragment only		7 Unknown	25-75				
37	NM2008.187	3	A61	General Bones 17/3/52 EWH	Premolar	Half a tooth; split vertically		1 Unknown	25-75	Cavity with some decay on occlusal surface			
38	NM2008.187	3	A61	General Bones 17/3/52 EWH	Teeth fragments	Unidentified molar or premolar fragments	n/a	Unknown	n/a	2 show some/moderate dental wear	7		
39	NM2008.187	3	A61	General Bones 17/3/52 EWH	Teeth fragments	Unidentified roots	n/a	Unknown	n/a		7		
40	NM2008.187	3	A61	General Bones 17/3/52 EWH	Teeth fragments	Unidentified teeth fragments	n/a	Unknown	n/a	≤1cm	5		
41	NM2008.187	4	A61	General Bones 17/3/52 EWH	Radius	Juvenile; proximal diaphysis	5,6,7	Unknown	25-75			≤18	SSB - 199, metaphysis 16.75mm = 14.40 yrs
42	NM2008.187	4	A61	General Bones 17/3/52 EWH	Femur	Juvenile; proximal epiphysis		4 Unknown	0-25			≤19	SSB - 276
43	NM2008.187	4	A61	General Bones 17/3/52 EWH	Unidentified fragment	Juvenile; epiphyseal surface present	n/a	Unknown	n/a				
44	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Alveloar processes; unknown region	n/a	Unknown	0-25				1 rock in bag 5
45	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Parietal	3or4	Unknown	0-25	Middle meningeal grooves			
46	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Parietal	3or4	Unknown	0-25	Middle meningeal grooves			
47	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Parietal	3or4	Unknown	0-25	Middle meningeal grooves			
48	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Parietal	3or4	Unknown	0-25	Middle meningeal grooves			
49	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Temporal; IAM and EAM		7 Right	0-25				
50	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
51	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
52	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
53	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
54	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
55	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
56	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25	Partially burnt; external surface only			
57	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region; 1 side suture line	n/a	Unknown	0-25	Burnt external surface, partially burnt internal surface			
58	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25	Burnt external surface only			
59	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
60	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
61	NM2008.187	5	A61	General Bones 17/3/52 EWH	Skull	Unknown region	n/a	Unknown	0-25				
62	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metacarpal	3rd	1,2,3	Right	100				2 rib fragments in bag 6
63	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metacarpal	1st; missing partial proximal end	2,3	Unknown	75-100				
64	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metacarpal	2nd	1,2,3	Left	100				
65	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metacarpal	2nd; proximal end	1,3	Left	25-75				
66	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metatarsal	2nd; proximal end	1,3	Right	75-100				
67	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metatarsal	Unknown (missing proximal facets)	1,3	Right	75-100				
68	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metatarsal	Unknown; shaft only		3 Unknown	75-100				
69	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metatarsal	Unknown (missing some proximal facets); proximal end	1,3	Unknown	75-100				
70	NM2008.187	6	A61	General Bones 17/3/52 EWH	Metatarsal	Unknown; proximal end		1 Unknown	0-25				
71	NM2008.187	6	A61	General Bones 17/3/52 EWH	Carpal	Hamate	HAM	Left	100				
72	NM2008.187	6	A61	General Bones 17/3/52 EWH	Carpal	Capitate	CAP	Left	75-100				
73	NM2008.187	6	A61	General Bones 17/3/52 EWH	Tarsal	Navicular	NAV	Unknown	25-75				
74	NM2008.187	6	A61	General Bones 17/3/52 EWH	Tarsal	Navicular	NAV	Unknown	0-25				
75	NM2008.187	6	A61	General Bones 17/3/52 EWH	Tarsal	Juvenile; Calcaneus	CAL	Unknown	25-75	Possibly juvenile; hint of epiphyseal surface		≤18	SSB - 335
76	NM2008.187	6	A61	General Bones 17/3/52 EWH	Tarsal	Talus	1,2,3,4	Left	100			Variation?	

77	NM2008.187	6	A61	General Bones 17/3/52 EWH	Tarsal	Talus	2,4		Left	25-75				
78	NM2008.187	6	A61	General Bones 17/3/52 EWH	Phalanges	Hand; unknown region	1,2,3		Unknown		100			
79	NM2008.187	6	A61	General Bones 17/3/52 EWH	Phalanges	Hand; unknown region	1,2,3		Unknown		100			
80	NM2008.187	6	A61	General Bones 17/3/52 EWH	Phalanges	Hand; proximal 1st digit	1,2,3		Unknown		100			
81	NM2008.187	6	A61	General Bones 17/3/52 EWH	Phalanges	Foot; unknown region	1,2,3		Unknown	75-100				
82	NM2008.187	7	A61	General Bones 17/3/52 EWH	Humerus	Shaft; mid-section	7,8,9,10,11		Unknown	25-75				2 non-long bone fragments in bag 7
83	NM2008.187	7	A61	General Bones 17/3/52 EWH	Radius	Shaft; mid-section	6,7,8		Unknown	25-75	Burnt			
84	NM2008.187	7	A61	General Bones 17/3/52 EWH	Radius	Shaft; mid-section	6,7,8		Unknown	25-75				
85	NM2008.187	7	A61	General Bones 17/3/52 EWH	Radius	Shaft; mid-section	6,7,8		Unknown	25-75				
86	NM2008.187	7	A61	General Bones 17/3/52 EWH	Radius	Shaft; mid-section	6,7,8		Unknown	25-75				
87	NM2008.187	7	A61	General Bones 17/3/52 EWH	Ulna	Shaft; mid-section in 3 articulating sections	E,F,G		Unknown	25-75				
88	NM2008.187	7	A61	General Bones 17/3/52 EWH	Ulna	Shaft; mid-section	F		Unknown	0-25	Burnt			
89	NM2008.187	7	A61	General Bones 17/3/52 EWH	Ulna	Shaft; mid-section	F		Unknown	0-25				
90	NM2008.187	7	A61	General Bones 17/3/52 EWH	Ulna	Shaft; mid-section	E,F		Unknown	25-75				
91	NM2008.187	7	A61	General Bones 17/3/52 EWH	Femur	Proximal end; head only		4	Unknown	0-25				
92	NM2008.187	7	A61	General Bones 17/3/52 EWH	Femur	Shaft; mid-section		6	Unknown	0-25				
93	NM2008.187	7	A61	General Bones 17/3/52 EWH	Femur	Distal end	9or10		Unknown	0-25				
94	NM2008.187	7	A61	General Bones 17/3/52 EWH	Tibia	Proximal end	1or3		Unknown	0-25				
95	NM2008.187	7	A61	General Bones 17/3/52 EWH	Tibia	Distal end	5,6		Unknown	0-25				
96	NM2008.187	7	A61	General Bones 17/3/52 EWH	Tibia	Distal end	5,6		Unknown	0-25				
97	NM2008.187	7	A61	General Bones 17/3/52 EWH	Patella	Proximal end	PAT		Unknown	25-75				
98	NM2008.187	7	A61	General Bones 17/3/52 EWH	Head of long bone	Humerus or Femur?	1 or 4?		Unknown	0-25				
99	NM2008.187	7	A61	General Bones 17/3/52 EWH	Head of long bone	Humerus or Femur?	1 or 4?		Unknown	0-25	Burnt			
100	NM2008.187	7	A61	General Bones 17/3/52 EWH	Shaft of long bone	Femur?	6?		Unknown	0-25	Very thick cortical bone			
101	NM2008.187	7	A61	General Bones 17/3/52 EWH	Long bone fragments	Unidentified fragments	n/a		n/a	n/a	5 fragments burnt/partially burnt		31	
102	NM2008.187	8	A61	General Bones 12/3/52 EWH	Vertebra	C2	1,2,3,4		n/a	75-100				2 unknown fragments
103	NM2008.187	8	A61	General Bones 12/3/52 EWH	Vertebra	C1; left superior/inferior facet		3	n/a	25-75				
104	NM2008.187	8	A61	General Bones 12/3/52 EWH	Vertebra	C1; facet for dens		1	n/a	0-25				
105	NM2008.187	8	A61	General Bones 12/3/52 EWH	Vertebra	C1; part of posterior arch		4	n/a	0-25				
106	NM2008.187	8	A61	General Bones 12/3/52 EWH	Vertebra	Cervical; body only		1	n/a	25-75				
107	NM2008.187	8	A61	General Bones 12/3/52 EWH	Vertebra	Cervical; articular facets only	2or3		n/a	0-25				
108	NM2008.187	8	A61	General Bones 12/3/52 EWH	Vertebra	Unknown; spine only		4	n/a	25-75	C7? Not bifed but articular process between I/S and A/P			
109	NM2008.187	8	A61	General Bones 12/3/52 EWH	Vertebra	Unknown; body only		1	n/a	0-25				
110	NM2008.187	8	A61	General Bones 12/3/52 EWH	Rib	Unknown; body only		3	Unknown	0-25				
111	NM2008.187	8	A61	General Bones 12/3/52 EWH	Rib	Unknown; body only		3	Unknown	0-25				
112	NM2008.187	8	A61	General Bones 12/3/52 EWH	Rib	Unknown; tubercle?		2	Unknown	0-25				
113	NM2008.187	8	A61	General Bones 12/3/52 EWH	Scapula	Lateral border		7	Unknown	0-25				
114	NM2008.187	8	A61	General Bones 12/3/52 EWH	Scapula	Coracoid process		1	Left	0-25				
115	NM2008.187	9	A61	General Bones 12/3/52 EWH	Femur	Juvenile; Proximal diaphysis	3,5,6		Left	25-75			≤19	SSB - 276, metaphysis 16.5mm = 1.34 yrs
116	NM2008.187	9	A61	General Bones 12/3/52 EWH	Femur	Juvenile; Proximal diaphysis	3,5		Left	0-25			≤19	SSB - 276, metaphysis 24mm = 5.47 yrs
117	NM2008.187	9	A61	General Bones 12/3/52 EWH	Femur	Juvenile; greater trochanter epiphysis		1	Unknown	0-25			≤19	SSB - 276
118	NM2008.187	9	A61	General Bones 12/3/52 EWH	Femur	Juvenile; distal epiphysis	9,10,11		Unknown	0-25			≤20	SSB - 276
119	NM2008.187	9	A61	General Bones 12/3/52 EWH	Radius	Juvenile; proximal diaphysis	5,6,7		Unknown	25-75			≤18	SSB - 199, metaphysis 11mm = 4.46 yrs
120	NM2008.187	9	A61	General Bones 12/3/52 EWH	Radius	Juvenile; distal end	3,4,9,10,J		Left	25-75	Epiphysiseal line still present; mid-fusing		14-22	SSB - 199
121	NM2008.187	9	A61	General Bones 12/3/52 EWH	Metatarsal	Juvenile; 4th	1,2,3		Left	75-100			≤16	SSB - 335
122	NM2008.187	9	A61	General Bones 12/3/52 EWH	Metatarsal	1st metatarsal distal end	2,3		Unknown	0-25				
123	NM2008.187	10	A61	General Bones 12/3/52 EWH	Unidentified fragments		n/a		n/a	n/a		874.85g		
124	NM2008.187	11	A61	General Bones 12/3/52 EWH	Tarsal	Talus	1,2,3,4		Left	75-100				
125	NM2008.187	11	A61	General Bones 12/3/52 EWH	Tarsal	Talus	1,2,3,4		Right		100			
126	NM2008.187	11	A61	General Bones 12/3/52 EWH	Tarsal	Talus	1,2,3,4		Right	75-100				
127	NM2008.187	11	A61	General Bones 12/3/52 EWH	Tarsal	Talus	1,2,3,4		Right	75-100				
128	NM2008.187	11	A61	General Bones 12/3/52 EWH	Tarsal	Navicular; articular surface with talus only	NAV		Unknown	25-75				
129	NM2008.187	11	A61	General Bones 12/3/52 EWH	Tarsal	Calcaneus; middle talar articular surface		5	Right	0-25				
130	NM2008.187	11	A61	General Bones 12/3/52 EWH	Carpal	Trapezium?	TPM		Unknown	75-100				
131	NM2008.187	11	A61	General Bones 12/3/52 EWH	Phalanges	Hand	n/a		n/a	n/a	multiple		16	
132	NM2008.187	11	A61	General Bones 12/3/52 EWH	Metacarpal	Second; proximal end	1,3		Left	25-75				
133	NM2008.187	11	A61	General Bones 12/3/52 EWH	Metacarpal	Unknown; distal end		2	Unknown	0-25				
134	NM2008.187	11	A61	General Bones 12/3/52 EWH	Phalanx	Foot	1,2,3		Unknown		100			
135	NM2008.187	11	A61	General Bones 12/3/52 EWH	Metacarpal/metatarsal	Unknown; mid-section		3	Unknown	25-75				
136	NM2008.187	11	A61	General Bones 12/3/52 EWH	Metacarpal/metatarsal	Unknown; mid-section		3	Unknown	25-75				
137	NM2008.187	11	A61	General Bones 12/3/52 EWH	Metatarsal	Fifth; proximal end	1,3		Unknown	25-75				
138	NM2008.187	11	A61	General Bones 12/3/52 EWH	Metatarsal	Fourth; proximal end	1,3		Right	75-100				
139	NM2008.187	11	A61	General Bones 12/3/52 EWH	Metatarsal	Second; proximal end	1,3		Left	25-75				
140	NM2008.187	11	A61	General Bones 12/3/52 EWH	Metatarsal	Second/or third; proximal end	1,3		Right	25-75	Small in size, but completely formed			
141	NM2008.187	12	A61	General Bones 12/3/52 EWH	Rib	First; mid-section		3	Unknown	25-75				
142	NM2008.187	12	A61	General Bones 12/3/52 EWH	Vertebra	Unknown; segment unknown	n/a		n/a	0-25				
143	NM2008.187	12	A61	General Bones 12/3/52 EWH	Scapula/Skull	Unknown	n/a		Unknown	n/a	Very thin bone, internal structure not clearly skull			
144	NM2008.187	12	A61	General Bones 12/3/52 EWH	Scapula/Skull	Unknown	n/a		Unknown	n/a	Very thin bone, internal structure not clearly skull			
145	NM2008.187	13	A61	General Bones 12/3/52 EWH	Humerus	Distal end	4,7,8		Left	0-25	septal aperture			
146	NM2008.187	13	A61	General Bones 12/3/52 EWH	Humerus	Shaft; mid-section approaching distal end	7,8		Left	0-25				
147	NM2008.187	13	A61	General Bones 12/3/52 EWH	Humerus	Shaft; mid-section approaching distal end	7,8		Right	0-25				
148	NM2008.187	13	A61	General Bones 12/3/52 EWH	Humerus	Shaft; mid-section	9,10		Unknown	0-25				
149	NM2008.187	13	A61	General Bones 12/3/52 EWH	Humerus	Shaft; mid-section	9,10		Unknown	0-25				
150	NM2008.187	13	A61	General Bones 12/3/52 EWH	Humerus	Shaft; mid-section	9,10		Unknown	0-25				
151	NM2008.187	13	A61	General Bones 12/3/52 EWH	Humerus	Shaft; mid-section	9,10		Unknown	0-25				
152	NM2008.187	13	A61	General Bones 12/3/52 EWH	Radius	Shaft; mid-section	6,7,8		Unknown	25-75				

153	NM2008.187	13	A61	General Bones 12/3/52 EWH	Ulna	Juvenile; Proximal end	C,D,E		Left	0-25	Small in size and possible osteophytic growth?	≤18	
154	NM2008.187	13	A61	General Bones 12/3/52 EWH	Ulna	Juvenile; Proximal end	C,D,E		Right	0-25	Small in size	≤18	metaphysis 12mm = 4.44yrs
155	NM2008.187	13	A61	General Bones 12/3/52 EWH	Ulna	Shaft; mid-section	E,F		Unknown	25-75			
156	NM2008.187	13	A61	General Bones 12/3/52 EWH	Ulna	Shaft; mid-section	E,F		Unknown	25-75			
157	NM2008.187	13	A61	General Bones 12/3/52 EWH	Femur	Distal end; one epicondyle only	9or10		Unknown	0-25			
158	NM2008.187	13	A61	General Bones 12/3/52 EWH	Femur	Shaft; mid-section		6	Unknown	0-25			
159	NM2008.187	13	A61	General Bones 12/3/52 EWH	Tibia	Shaft; proximal end	1,2,3,4,7		Unknown	0-25	Articular surfaces not present, but tibial tuberosity present		
160	NM2008.187	13	A61	General Bones 12/3/52 EWH	Tibia	Proximal end	1or3		Unknown	0-25	One articular surface present		
161	NM2008.187	13	A61	General Bones 12/3/52 EWH	Tibia	Shaft; mid-section	8,9,10		Unknown	25-75			
162	NM2008.187	13	A61	General Bones 12/3/52 EWH	Patella	Fragment	PAT		Right	25-75			
163	NM2008.187	13	A61	General Bones 12/3/52 EWH	Patella	Fragment	PAT		Unknown	0-25			
164	NM2008.187	13	A61	General Bones 12/3/52 EWH	Long bone	Shaft; mid-section; juvenile?	n/a		Unknown	n/a	Significantly small radius suggests juvenile		
165	NM2008.187	13	A61	General Bones 12/3/52 EWH	Long bone	Shaft; mid-section; juvenile?	n/a		Unknown	n/a	Significantly small radius suggests juvenile		
166	NM2008.187	13	A61	General Bones 12/3/52 EWH	Long bone	Shaft; mid-section; juvenile?	n/a		Unknown	n/a	Significantly small radius suggests juvenile		
167	NM2008.187	13	A61	General Bones 12/3/52 EWH	Long bone fragments	Unidentified fragments	n/a		n/a	n/a		21	
168	NM2008.187	14	A61	General Bones 12/3/52 EWH	Molar	Crown and one root		1	Unknown	75-100	Burnt		
169	NM2008.187	14	A61	General Bones 12/3/52 EWH	Molar	Crown		1	Unknown	25-75	Forming/Disssolving		
170	NM2008.187	14	A61	General Bones 12/3/52 EWH	Premolar fragments	Crown; partial		1	Unknown	25-75	one has LEH	2	
171	NM2008.187	14	A61	General Bones 12/3/52 EWH	Teeth fragments	Unidentified fragments	n/a		n/a	n/a	2 fragments make RC_1 = LEH	16	
172	NM2008.187	15	A61	General Bones (Burnt) 13/3/52 EWH	Molar	Crown		1	Unknown	25-75	Forming/Disssolving		
173	NM2008.187	15	A61	General Bones (Burnt) 13/3/52 EWH	Tooth fragment	Root	n/a		Unknown	25-75	Canine?		
174	NM2008.187	15	A61	General Bones (Burnt) 13/3/52 EWH	Tooth fragment	Crown fragment	n/a		Unknown	0-25			
175	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Mandible	LM3 - LM1		1	n/a	25-75	Very wide sulcus and low mandibular height		
176	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Mandible	Lm2 - Ri2	1,2,7		n/a	0-25	unerupted I and PM visible under alveolar, M1 close	4-6 ± 2yrs	
177	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Mandible	LI2 - RI2		7	n/a	0-25	mental eminence - 177 and 178 articulate		4
178	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Mandible	RPM1 - RM3		1	n/a	25-75	RM2 missing antemortem - 177 and 178 articulate		
179	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Mandible	Right mandibular condyle		5	n/a	0-25			
180	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Maxilla	LI1 - LPM2		12	Left	0-25			
181	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Skull	Unidentified fragment	n/a		n/a	0-25			
182	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Skull	Unidentified fragment	n/a		n/a	0-25			
183	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Skull	Unidentified fragment	n/a		n/a	0-25			
184	NM2008.187	16	A61	General Bones (Burnt) 13/3/52 EWH	Skull	Unidentified fragment	n/a		n/a	0-25			
185	NM2008.187	17	A61	General Bones (Burnt) 13/3/52 EWH	Ulna	Distal end; missing stylus	G,H,J		Unknown	25-75			
186	NM2008.187	17	A61	General Bones (Burnt) 13/3/52 EWH	Unidentified juvenile	Juvenile; unfused epiphysis	n/a		Unknown	n/a	mastoid?		
187	NM2008.187	17	A61	General Bones (Burnt) 13/3/52 EWH	Unidentified juvenile	Juvenile; unfused epiphysis	n/a		Unknown	n/a	humerus trochlea?		
188	NM2008.187	17	A61	General Bones (Burnt) 13/3/52 EWH	Innominate	Juvenile; ileum	10,12		Right	25-75		≤18	SSB - 253
189	NM2008.187	17	A61	General Bones (Burnt) 13/3/52 EWH	Innominate	Juvenile; ischium	8,9		Left	75-100		≤18	SSB - 253
190	NM2008.187	17	A61	General Bones (Burnt) 13/3/52 EWH	Long bone	Juvenile; unidentified fragment	n/a		Unknown	n/a			
191	NM2008.187	17	A61	General Bones (Burnt) 13/3/52 EWH	Long bone	Juvenile; unidentified fragment	n/a		Unknown	n/a			
192	NM2008.187	17	A61	General Bones (Burnt) 13/3/52 EWH	Unidentified fragment	Juvenile?; osteophytic growths?; fusion of two bones?	n/a		Unknown	n/a			
193	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Metacarpal	Second	1,2,3		Right		100		
194	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Metacarpal	Second	1,2,3		Left	75-100	Same length and width as above		
195	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Metacarpal	Third	1,2,3		Right		100		
196	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Carpal	Hamate	HAM		Right		100		
197	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Metacarpal/metatarsal	Unknown; proximal section	1,3		Unknown	25-75	Evidence of pathology on base, making ID n/a?		
198	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Metacarpal/metatarsal	Juvenile; unknown; distal section of diaphysis		3	Unknown	75-100		≤16.5	SSB - 228
199	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Metacarpal/metatarsal	Unknown; distal section	2,3		Unknown	75-100			
200	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Metacarpal/metatarsal	Unknown; distal section	2,3		Unknown	25-75			
201	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Metatarsal	3rd; proximal end	1,3		Left	25-75			
202	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Phalanges	Hand	n/a		n/a	n/a	Multiple	5	
203	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Phalanx	Juvenile; hand; diaphysis	2,3		n/a	75-100		≤16.5	SSB - 228
204	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Tarsal	Talus	1,2,3,4		Left	75-100			
205	NM2008.187	18	A61	General Bones (Burnt) 13/3/52 EWH	Tarsal	Calcaneous; Posterio-lateral section	1,2		Left	25-75			
206	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Humerus	Proximal end; head only		1	Left	0-25			
207	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Humerus	Shaft; mid-section	9,10		Unknown	0-25			
208	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Radius	Distal end	3,4,8,9,10,J		Left	25-75			
209	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Radius	Proximal end; neck and tuberosity		5	Unknown	0-25	Bleached colour		
210	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Radius	Proximal end; head and tuberosity	1,2,5		Unknown	0-25	Burnt		
211	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Radius	Shaft; mid-section		8	Unknown	0-25	Same colour above		
212	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Radius	Shaft; mid-section in 2 articulating fragments	6,7,8		Unknown	25-75			
213	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Radius	Shaft; mid-section in 2 articulating fragments	6,7,8		Unknown	25-75			
214	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Ulna	Shaft; mid-section in 2 articulating fragments	E,F,G,H		Unknown	25-75			
215	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Ulna	Shaft; mid-section	F,G		Unknown	0-25			
216	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Tibia	Proximal end; one condylar facet	1or3		Unknown	0-25			
217	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Fibula	Shaft; mid-section in 2 articulating fragments	4,5		Unknown	25-75			
218	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Fibula	Shaft; mid-section	4,5		Unknown	0-25			
219	NM2008.187	19	A61	General Bones (Burnt) 13/3/52 EWH	Long bone fragments	Unidentified fragments	n/a		n/a	n/a	Multiple, one burnt and one bleached coloured	13	
220	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Lumbar	1,2,3,4		n/a	75-100			
221	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Lumbar; spine and inferior articular facets		4	n/a	25-75			
222	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Lumbar; some body and one superior articular facet	1,2or3		n/a	25-75			
223	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Thoracic	1,2,3,4		n/a	75-100			
224	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Thoracic	1,2,3,4		n/a	75-100			
225	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Thoracic	1,2,3,4		n/a	75-100			
226	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Thoracic; spine and inferior articular facets		4	n/a	25-75			
227	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Thoracic; spine and inferior articular facets		4	n/a	25-75			
228	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	C1; right articular facets		2	n/a	25-75			

229	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Unknown; body only		1	n/a	25-75					
230	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Unknown; body only		1	n/a	25-75					
231	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Unknown; body only		1	n/a	25-75	Burnt				
232	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Unknown; body only		1	n/a	25-75	Some pathology may be present				
233	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Vertebra	Unidenified fragments	n/a		n/a	n/a	Multiple, one burnt and one bleached coloured		9		
234	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Scapula	Glenoid fossa and upper lateral border	2,3,7		Right	0-25					
235	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Scapula	Scapula spine		6	Unknown	0-25					
236	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Innominate	Iliac crest		12	Unknown	0-25					
237	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Innominate	Juvenile; iliac crest diaphysis		12	Unknown	0-25				≤16.5	SSB - 253
238	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Rib	First; posterior end		10	Left	25-75					
239	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Rib fragments	Unknown, posterior ends		1	Right	n/a	Multiple, tubercles present		6		
240	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Rib fragments	Unknown, posterior ends		1	Left	n/a	Multiple, tubercles present		3		
241	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Rib	Unknown; posterior end		1	Left	0-25	Osteophyte on tubercle and circular hole (as seen in E1)				
242	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Clavicle	Juvenile; medial diaphysis		1	Left	25-75				≤29	SSB - 150
243	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Rib fragments	Unknown; mid-sections	2,3		n/a	n/a	Multiple		22		
244	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Metacarpal	Unknown; proximal section	1,3		Unknown	75-100	Some of base missing				
245	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Phalanges	Hand	n/a		n/a	n/a	Multiple		2		
246	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Mandible	Left Mandibular condyle		5	n/a	0-25					
247	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Skull	Unknown region	n/a		Unknown	0-25					
248	NM2008.187	20	A61	General Bones (Burnt) 13/3/52 EWH	Skull	Unknown region	n/a		Unknown	0-25					
249	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Scapula	glenoid fossa and acromion	2,3,4,5		Right	0-25					
250	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Scapula	glenoid fossa and partial acromion	2,3,4,5		Right	0-25					
251	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Scapula	glenoid fossa	2,3,5		Left	0-25					
252	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Ulna	Distal end	H,J		Left	0-25					
253	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Clavicle	Lateral end		2	Left	25-75					
254	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Fibula	Distal end	2,3		Right	0-25					
255	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Metatarsal	5th; proximal end	1,3		Right	25-75					
256	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Metatarsal	5th; proximal end	1,3		Left	25-75					
257	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Metatarsal	First; distal end	2,3		Unknown	25-75					
258	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Rib	Juvenile?; very small		2	Unknown	n/a					
259	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Animal bones		n/a		n/a	n/a			2		
260	NM2008.187	21	A61	General Bones (Burnt) 13/3/52 EWH	Rocks		n/a		n/a	n/a			2		
261	NM2008.187	22	A61	General Bones (Burnt) 13/3/52 EWH	Unidentified fragments		n/a		n/a	n/a		873.54g			

REF	Reg No.	Bag no.	Tomb No.	Label	Identification	Description	Zone		Side	Preservation %	Notes	Weight/Count	Sex/Age	Extra Info
2	NM2008.188	1	A61	(2) Burnt Layer Bones 15.3.52	Incisor	Crown only		7	n/a	25-75	Dissolving deciduous OR forming permanent			
3	NM2008.188	1	A61	(2) Burnt Layer Bones 15.3.52	Molar	Crown and top of root only; split down vertical plane		1	n/a	25-75	Cavity present on occlusal surface			
4	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Fibula	In four articulating fragments	1,2,3,4,5,6		Right	100	337mm in length			154.35-165.39cm = stature
5	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Fibula	Proximal end; in three articulating fragments	1,4,5,6		Left	25-75				
6	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Fibula	Shaft; mid-section	4or5		Unknown	0-25				
7	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Fibula	Shaft; mid-section	4or5		Unknown	0-25				
8	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Fibula	Shaft; mid-section	4or5		Unknown	0-25				
9	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Patella	Complete	PAT		Left	100				
10	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Patella	Complete	PAT		Left	100				
11	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Patella	Fragment	PAT		Unknown	25-75				
12	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Radius	Mid-section; in two articulating fragments	6,7,8		Unknown	25-75				
13	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Radius	Mid-section	6,7,8		Unknown	25-75				
14	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Radius	Neck and tuberosity		5	Unknown	0-25				
15	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Radius	Tuberosity and mid-section	5,6,7		Unknown	25-75				
16	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Radius	Shaft; mid-section	6or7or8		Unknown	0-25	Small radius - juvenile?			
17	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Radius	Portion of head only	1or2		Unknown	0-25				
18	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Radius	Shaft; mid-section	6or7or8		Unknown	0-25	Small radius - juvenile?			
19	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Radius	Shaft; mid-section		8	Unknown	0-25	Small radius - juvenile?			
20	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Ulna	Proximal end	C,D		Right	0-25	Quite robust			
21	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Ulna	Proximal end	C,D		Right	0-25				
22	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Ulna	Proximal end	C,D		Right	0-25	Small size - juvenile?			metaphysis 11.75mm = 3.98yrs
23	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Ulna	Proximal end	C,D		Left	0-25	Small size - juvenile?			metaphysis 11.25mm = 3.06 yrs
24	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Ulna	Shaft; mid-section	EorForG		Unknown	0-25				
25	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Ulna	Shaft; mid-section	EorForG		Unknown	0-25				
26	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Femur	Shaft; mid-section		6	Unknown	0-25				
27	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Femur	Shaft; mid-section		6	Unknown	0-25				
28	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Femur	Shaft; mid-section		6	Unknown	0-25				
29	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Femur	Shaft; mid-section	6,7,8		Unknown	0-25				
30	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Femur	Distal end; anterior half of an epicondyle	9or10		Unknown	0-25				
31	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Femur	Distal end; posterior half of an epicondyle	9or10		Unknown	0-25				
32	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Femur	Distal end; a partial epicondyle	9or10		Unknown	0-25				
33	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Tibia	Shaft; mid-section	8,9		Unknown	0-25	diameter and cortical thickness suggest juvenile			
34	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Tibia	Shaft; mid-section	8,9		Unknown	0-25				
35	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Femur	Shaft; mid-section (in 2 articulating fragments)		6	Left	25-75				
36	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Long bone fragments	Unidentified 8-10cm	n/a		n/a	n/a		2		
37	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Long bone fragments	Unidentified 6-8cm	n/a		n/a	n/a		8		
38	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Long bone fragments	Unidentified 4-6cm	n/a		n/a	n/a		23		
39	NM2008.188	2	A61	(2) Burnt Layer Bones 15.3.52	Long bone fragments	Unidentified 2-4cm	n/a		n/a	n/a		9		
40	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Temporal fragment; external/internal accoustic meatus and mastoid		6	Left	0-25				3
41	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Temporal fragment; internal accoustic meatus		6	Left	0-25				
42	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Juvenile; maxilla fragment with unerupted I1 in situ	12or13		Unknown	0-25	Incisor		6 ± 2 yrs	
43	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Unidentified fragment	n/a		n/a	n/a				
44	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Unidentified fragment	n/a		n/a	n/a				
45	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Unidentified fragment	n/a		n/a	n/a				
46	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Unidentified fragment	n/a		n/a	n/a				
47	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Unidentified fragment	n/a		n/a	n/a				
48	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Unidentified fragment	n/a		n/a	n/a				
49	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Unidentified fragment	n/a		n/a	n/a				
50	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Skull	Unidentified fragment	n/a		n/a	n/a				
51	NM2008.188	3	A61	(2) Burnt Layer Bones 15.3.52	Unidentified fragment	Zone size: 30-40mm	n/a		n/a	n/a		1		
52	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Fourth; proximal end	1,3		Right		Size and shape suggests juvenile; but missing epiphyseal end			
53	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	First	1,2,3		Right	75-100				
54	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Second	1,2,3		Right	75-100				
55	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Juvenile; second or third diaphysis	1,2,3		Left	75-100	missing distal head/epiphysis		≤16	SSB - 335
56	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Second or third; proximal end	1,3		Right	75-100	proximal/inferior corner broken off			
57	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Juvenile; fourth	1,2,3		Right	75-100	missing distal head/epiphysis		≤16	SSB - 335
58	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Juvenile; fourth	1,2,3		Left	75-100	missing distal head/epiphysis, size and shape matches one above		≤16	SSB - 335
59	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Unknown; proximal end	1,3		Unknown	25-75				
60	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metacarpal/metatarsal	Unknown; proximal end	1,3		Unknown	25-75				
61	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Fifth; distal end	2,3		Right	75-100				
62	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Phalanx	Foot	1,2,3		Unknown	100				
63	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Phalanx	Juvenile; hand	1,2,3		Unknown	100	epiphyseal surface present		≤16.5	SSB - 228
64	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Phalanx	Hand, proximal end	1,3		Unknown	75-100				
65	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Phalanx	Hand; proximal first	1,2,3		Unknown	100				
66	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Phalanx	Hand; distal end	2,3		Unknown	25-75				
67	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Talus	TAL		Right	100	Variation?			
68	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Talus			Left	75-100				
69	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Talus			Right	75-100				
70	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Calcaneous; posterio/medial portion	CAL		Left	25-75				
71	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Calcaneous; posterio/medial portion	CAL		Left	25-75				
72	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Calcaneous; fragment	CAL		Unknown	0-25				
73	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Calcaneous; fragment	CAL		Unknown	0-25				
74	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Calcaneous; fragment	CAL		Unknown	0-25				
75	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Cuboid	CUB		Left	75-100				
76	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Cuboid	CUB		Right	75-100	Size and shape matches one above			
77	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tarsal	Medial Cuneiform	MC		Right	100				
78	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Unidentified fragment	Zone size: 20-30mm	n/a		n/a	n/a	One of them - cuneiform?	2		
79	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Unidentified fragment	Zone size: 30-40mm	n/a		n/a	n/a	Osteophytic growth, looks like may have been a cuneiform	1		
80	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Unidentified fragment	Zone size: 50-60mm	n/a		n/a	n/a		1		
81	NM2008.188	4	A61	(2) Burnt Layer Bones 15.3.52	Tibia	Medial malleolus		5	Unknown	0-25				
82	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Tibia	Juvenile; proximal diaphysis with corresponding Proximal epiphysis	1,2,3,4,7		Right	0-25			≤20	SSB -225
83	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Tibia	Juvenile; distal epiphysis only	5,6		Unknown	0-25			≤18	SSB -225
84	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Humerus	Juvenile; distal diaphysis only	5,6,7,8		Unknown	25-75			≤18	SSB - 183
85	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Vertebra	Juvenile; body only		1	n/a	25-75	No neurocentral fusion		≤4	SSB - 119
86	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Vertebra	Juvenile; partial body only		1	n/a	25-75			≤25	SSB - 120

87	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Vertebra	Juvenile; partial body only		1	n/a	25-75				≤25	SSB - 120
88	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Vertebra	Juvenile; partial body only		1	n/a	25-75				≤25	SSB - 120
89	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Skull	Juvenile; mastoid process unfused?	6or7		Unknown	0-25					
90	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Radius	Juvenile; proximal diaphysis?	5,6,7		Unknown	25-75	Diameter & thickness suggest juvenile = 8mm diameter				
91	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Phalanx	Juvenile; hand	1,2,3		Unknown		100			≤16.5	SSB - 228
92	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Phalanx	Juvenile; hand, proximal end	1,3		Unknown	75-100				≤16.5	SSB - 228
93	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Metacarpal/metatarsal	Juvenile; distal diaphysis only	2,3		Unknown	25-75				≤16	SSB - 335
94	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Humerus/Femur	Juvenile; proximal epiphysis only?	n/a		Unknown	0-25	Cannot determine if fovea capitis present or not			≤21	SSB - 183
95	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Long bone fragments	Juvenile; Unidentified 20-40mm	n/a		n/a	n/a	epiphyseal surface present		2		
96	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Long bone fragments	Juvenile; Unidentified 40-60mm	n/a		n/a	n/a	epiphyseal surface present		5		
97	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Innominate	Juvenile; ischium fragment	2,6		Unknown	0-25	no os acetabuli present, but no measurements can be taken			≤10	SSB - 253
98	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Unidentified fragment	Juvenile; Zone size: 30-40mm	n/a		n/a	n/a	epiphyseal surface present		1		
99	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Unidentified fragments	Zone size: 40-50mm	n/a		n/a	n/a			2		
100	NM2008.188	5	A61	(2) Burnt Layer Bones 15.3.52	Metatarsal	Fourth; proximal end		1	Left	0-25					
101	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Rib fragment	Unknown; posterior end		1	Left						
102	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Rib fragments	Unknown; mid-section		3	Unknown	n/a	2 burnt, 2 partially burnt		8		
103	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Innominate	Auricular fragment	7,10		Unknown	0-25	not enough for age assessment				
104	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Innominate	Iliac crest fragment		12	Unknown	0-25					
105	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Vertebra	Sacral; body only		1	n/a	0-25					
106	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Vertebra	Unknown; lamina and articular facets	2or3		n/a	0-25					
107	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Vertebra	Sacral; right superior articular facet and partial body	1,2,4		n/a	0-25					
108	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Vertebra	Unknown; body and an articular facet	1,2or3		n/a	25-75					
109	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Tibia	Proximal lateral condyle		3	Left	0-25					
110	NM2008.188	6	A61	(2) Burnt Layer Bones 15.3.52	Humeus/femur	Juvenile?; Proximal head only	n/a		Unknown	n/a				≤21	SSB - 183
111	NM2008.188	7	A61	(2) Burnt Layer Bones 15.3.52	Fibula	Shaft; mid-section	3or4		Unknown	0-25					
112	NM2008.188	7	A61	(2) Burnt Layer Bones 15.3.52	Animal bones	Unidentified	n/a		n/a	n/a			5		
113	NM2008.188	8	A61	(2) Burnt Layer Bones 15.3.52	Rocks	n/a	n/a		n/a	n/a			9		
114	NM2008.188	9	A61	(2) Burnt Layer Bones 15.3.52	Unidentified fragments		n/a		n/a	n/a		471.39g			
115	NM2008.188	10	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Mandible	RM1/2-RM2/3		1	n/a	0-25	RM2/3 unerupted in situ			≤12 ± 2.5 yrs	
116	NM2008.188	10	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Skull	Maxilla; RI1-RPM2		13	Right	0-25	root of RI2 still in situ				
117	NM2008.188	10	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Premolar	PM^1; unerupted crown only still forming	12or13		Unknown	25-75				5-6 ± 2 yrs	
118	NM2008.188	10	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Premolar	PM^2; unerupted crown only still forming	12or13		Unknown	25-75	Similar size and formation to premolar above			5-6 ± 2 yrs	
119	NM2008.188	10	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Molar	M_2; unerupted crown only still forming		1	Unknown	25-75				4-6 ± 2 yrs	
120	NM2008.188	10	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Molar	Lower; roots and partial crown		1	Unknown	75-100					
121	NM2008.188	10	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Teeth fragments	Unidentified root fragment	n/a		Unknown	n/a			1		
122	NM2008.188	10	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Teeth fragments	Unidentified crown fragments	n/a		Unknown	n/a	1 molar crown frag has a carabelli cusp (M^1?)		14		
123	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Clavicle	Mid-section		3	Left	25-75					
124	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Innominate	Iliac crest fragment		12	Unknown	0-25					
125	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Scapula	Scapular spine fragment		6	Unknown	0-25					
126	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Scapula	Acromion process		4	Unknown	0-25	In two articulating fragments				
127	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Rib fragments	Unknown; mid-section		3	Unknown	n/a	One is 4cm, other two are 3cm		3		
128	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebra	Cervical; body only		1	n/a	25-75					
129	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebra	Unknown; body only		1	n/a	25-75	Pitting on anterior surface				
130	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebra	Unknown; partial body only		1	n/a	0-25	half burnt along longitudinal plane				
131	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebra	Unknown; partial body only		1	n/a	0-25					
132	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebra	Sacral; Proximal section	1,2,4		n/a	0-25					
133	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebra	C2; left superior articular facet and pedicle	1,3		n/a	25-75					
134	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebra	Thoracic; lamina and left superior articular facet	3,4		n/a	25-75					
135	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebral fragments	Unknown, unidentifiable fragments	n/a		n/a	n/a			4		
136	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Mandible	Right mandibular condyle		5	n/a	0-25					
137	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Phalanx	Distal	1,2,3		Unknown		100				
138	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Phalanx	Unknown; distal end		2	Unknown	25-75					
139	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metacarpal/metatarsal	Unknown; shaft only		3	Unknown	25-75					
140	NM2008.188	11	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Carpal	Trapezoid	TRA		Unknown	25-75					
141	NM2008.188	12	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Tibia	Juvenile; proximal epiphysis with articulating proximal diaphysis	1,2,3		Right	0-25	corner of epiphysis burnt, but diaphysis not at all - separated before fire			≤20	SSB -225, epiphysis 51.75mm = 12.36 yrs
142	NM2008.188	12	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Juvenile; proximal diaphysis	2,3,5		Unknown	0-25	Quite small in size as well			≤20	SSB - 295, metaphysis 15.5mm = 1.09 yrs
143	NM2008.188	12	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Humerus/Femur	Juvenile; proximal (head) epiphysis	n/a		Unknown	n/a	Quite small in size as well			≤21	SSB - 183
144	NM2008.188	12	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Juvenile; proximal diaphysis	2,3,5		Unknown	0-25	Quite small in size as well			≤20	SSB - 295
145	NM2008.188	12	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Phalanx	Juvenile; diaphysis only	2,3		Unknown	75-100				≤16	SSB - 228, 335
146	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Patella	Complete	PAT		Left	75-100					
147	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Patella	Complete	PAT		Left	75-100					
148	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Patella	Complete	PAT		Right	75-100					
149	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Ulna	Juvenile; proximal diaphysis	C,D,E		Left	25-75				≤18	SSB - 213
150	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Ulna	Shaft; mid-section	E		Right	25-75					
151	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Ulna	Shaft; mid-section	ForG		Unknown	0-25					
152	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Humerus	Shaft; mid-section	7,8		Right	25-75					
153	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Humerus	Shaft; mid-section	7,8		Unknown	0-25					
154	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Humerus	Shaft; mid-section	7,8		Unknown	0-25					
155	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Radius	Shaft; mid-section in two articulating fragments		8	Unknown	25-75	Juvenile? Diameter quite small in size				
156	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Radius	Shaft; mid-section in two articulating fragments		8	Unknown	25-75					
157	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Radius	Shaft; mid-section in two articulating fragments	8,9,10		Unknown	25-75					
158	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Radius	Shaft; mid-section		8	Unknown	0-25					
159	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Radius	Shaft; mid-section	8,9,10		Unknown	0-25					
160	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Radius	Shaft; mid-section	8,9,10		Unknown	0-25					
161	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Proximal end	3,4,5		Right	0-25					
162	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Distal articulation		11	Left	0-25					
163	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	An epicondyle	9or10		Unknown	0-25					
164	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	An epicondyle	9or10		Unknown	0-25					
165	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Distal articulation		11	Right	0-25					
166	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	An epicondyle	9or10		Unknown	0-25					
167	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Shaft; mid-section	6,7,8		Unknown	25-75	Very pronounced linea aspera				
168	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Shaft; mid-section		6	Unknown	25-75					
169	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Shaft; mid-section	7,8		Unknown	0-25					
170	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Tibia	Anterior, proximal shaft	3,4,7,8		Right	0-25					
171	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Tibia	Shaft; mid-section	7,8or8,9or9,10		Unknown	0-25					

172	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Tibia	A proximal condyle	2,1or3		Unknown	0-25					
173	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Tibia	Shaft; proximal section	1or3,7		Unknown	0-25					
174	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Femur	Proximal head		4	Unknown	n/a					
175	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Humerus/Femur	Proximal head	n/a		Unknown	n/a	Cannot determine if fovea capitis present or not				
176	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Fibula	Shaft; mid-section	3,4		Unknown	0-25					
177	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Fibula	Shaft; mid-section	5or6		Unknown	0-25					
178	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Fibula	Shaft; mid-section	3or4or5or6		Unknown	0-25					
179	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Long bone fragments	Unidentified 20-40mm	n/a		n/a	n/a			3		
180	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Long bone fragments	Unidentified 40-60mm	n/a		n/a	n/a			9		
181	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Long bone fragments	Unidentified 60-80mm	n/a		n/a	n/a			10		
182	NM2008.188	13	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Long bone fragments	Unidentified 80-100mm	n/a		n/a	n/a			4		
183	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metacarpal	Second; proximal end	1,3		Right	25-75					
184	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metatarsal	Fifth; proximal end and shaft	1,3		Right	75-100					
185	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metatarsal	Third; proximal end	1,3		Right	25-75					
186	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metatarsal	Fourth; proximal end	1,3		Right	25-75					
187	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metatarsal	Second or third; proximal end	1,3		Right	25-75	Identifying facets missing				
188	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metatarsal	Second; proximal end	1,3		Left	25-75					
189	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metatarsal	Third; proximal end	1,3		Left	25-75					
190	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metatarsal	Unknown; proximal end	1,3		Unknown	25-75	Identifying facets missing				
191	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metacarpal/metatarsal	Shaft; mid-section		3	Unknown	25-75					
192	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metacarpal/metatarsal	Head only		2	Unknown	0-25					
193	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metacarpal/metatarsal	Distal end	2,3		Unknown	75-100					
194	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Metacarpal/metatarsal	Distal end	2,3		Unknown	75-100					
195	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Phalanx	First proximal; hand	1,2,3		Unknown		100				
196	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Phalanx	Unknown; hand	2,3		Unknown	75-100					
197	NM2008.188	14	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Phalanx	Unknown; hand	2,3		Unknown	25-75					
198	NM2008.188	15	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Animal bone fragments	Unidentified fragments	n/a		n/a	n/a			5		
199	NM2008.188	15	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Rock		n/a		n/a	n/a			1		
200	NM2008.188	16	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Unidentified fragments							443.07g			
201	NM2008.188	17	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Skull	Frontal crest & right superio-medial orbital border; 3 articulating fragments	1,2		n/a	0-25	Dark 'spotting' or 'flecks' pattern the exterior surface		"young 1/2"		
202	NM2008.188	17	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Skull	Unknown fragment	Unknown		n/a	0-25	possibly frontal due to similar thickness and exterior 'spotting' marks				
203	NM2008.188	17	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Mandible	Right digastric fossa present, no alveolar	1,2,7		n/a	0-25					
204	NM2008.188	17	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Innominate	Juvenile; ischium	2,6,11		Left	0-25	acetabulum not yet completed fusion and ossification		≤18		SSB - 253
205	NM2008.188	17	A61	General Bones 20.3.52 E.W.H. (8 teeth)	Vertebra	Body fragment only		1	n/a	0-25					
206	NM2008.188	18	A61	General Bones 21.3.52 E.W.H.	Femur	Juvenile; proximal diaphysis	2,3,5		Right	0-25			≤20		SSB - 295, metaphysis 30.5mm = 10.15 yrs
207	NM2008.188	18	A61	General Bones 21.3.52 E.W.H.	Femur	Juvenile; proximal head epiphysis		4	Unknown	0-25	size and shape matches diaphysis above, but cannot be confirmed		≤20		SSB - 295, epiphysis 33.25mm = 12.13 yrs
208	NM2008.188	18	A61	General Bones 21.3.52 E.W.H.	Femur	Juvenile; proximal diaphysis	3,5		Left	0-25	younger than juvenile above		≤20		SSB - 295, metaphysis 19.25mm = 2.06 yrs
209	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	Shaft; mid-section in five articulating fragments	6,7,8		Unknown	25-75					
210	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	Shaft; mid-section in two articulating fragments		6	Unknown	0-25					
211	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	Shaft; mid-section		6	Unknown	25-75					
212	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	Shaft; mid-section	2,3,6		Unknown	0-25					
213	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	Proximal end, head missing	1,2,3,5,6		Left	25-75					
214	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	Head only		4	Right	0-25	fovea capitis present				
215	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	Head fragment only		4	Left	0-25	fovea capitis present				
216	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	A distal epicondyle	9or10		Unknown	0-25					
217	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Femur	A distal epicondyle	9or10		Unknown	0-25					
218	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Tibia	A proximal condyle	1or3		Unknown	0-25					
219	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Radius	Proximal end	1,2,5,6,7		Unknown	25-75					
220	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Radius	Shaft; mid-section	6,7,8		Unknown	25-75					
221	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Humerus	Shaft; mid-section	7,8		Unknown	0-25					
222	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Ulna	Shaft; mid-section	G,H		Unknown	0-25					
223	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Fibula	Shaft; mid-section	3or4or5or6		Unknown	0-25					
224	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Long bone fragments	Unidentified 20-40mm	n/a		n/a	n/a			5		
225	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Long bone fragments	Unidentified 40-60mm	n/a		n/a	n/a			15		
226	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Long bone fragments	Unidentified 60-80mm	n/a		n/a	n/a			5		
227	NM2008.188	19	A61	General Bones 21.3.52 E.W.H.	Long bone fragments	Unidentified 80-100mm	n/a		n/a	n/a			4		
228	NM2008.188	20	A61	General Bones 21.3.52 E.W.H.	Vertebra	Unknown; Partial body only		1	n/a	0-25					
229	NM2008.188	20	A61	General Bones 21.3.52 E.W.H.	Vertebra	Unknown; Partial body only		1	n/a	0-25					
230	NM2008.188	20	A61	General Bones 21.3.52 E.W.H.	Rib	Unknown; mid-section		3	Unknown	0-25					
231	NM2008.188	20	A61	General Bones 21.3.52 E.W.H.	Innominate	Partial iliac crest		12	Unknown	0-25					
232	NM2008.188	20	A61	General Bones 21.3.52 E.W.H.	Unidentified fragment	Zone size 50-60mm	9?		n/a	n/a	Pubic symphasis of innominate?				
233	NM2008.188	21	A61	General Bones 21.3.52 E.W.H.	Unidentified fragments		n/a		n/a	n/a		235.84g			
234	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Femur	Juvenile; proximal diaphysis	3,5		Left	0-25			≤20		SSB - 295, metaphysis 18mm = 1.72 yrs
235	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Femur	Juvenile; proximal diaphysis	3,5		Right	0-25	Less burnt, slightly smaller in size than above		≤20		SSB - 295, metaphysis 17.5mm = 1.60 yrs
236	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Juvenile; partial body only		1	n/a	25-75	not burnt		≤25		SSB - 120
237	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Juvenile; partial body only		1	n/a	25-75			≤25		SSB - 120
238	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Juvenile; partial body only		1	n/a	25-75	not burnt, smaller than 2 above		≤25		SSB - 120
239	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Innominate	Juvenile, ischial ramus of ischium		11	Unknown	0-25			≤10		SSB - 253
240	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Innominate	Juvenile, iliac crest fragment	10,12		Unknown	0-25			≤23		SSB - 253
241	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Unknown; Partial body only		1	n/a	25-75	not burnt				
242	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Femur	A distal epicondyle	9or10		Unknown	0-25					
243	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Fibula	Juvenile; distal diaphysis only	2,3,4		Unknown	25-75	strip not burnt		≤20		SSB - 309, metaphysis 17.25mm = 10.46 yrs
244	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone fragment	Juvenile diaphysis; 60-80mm	n/a		n/a	n/a			1		
245	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone fragment	Juvenile diaphysis; 40-60mm	n/a		n/a	n/a			1		
246	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Femur	Juvenile; proximal diaphysis	2,3		Right	0-25	both trochanters unfused - for aging		≤20		SSB - 295
247	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Innominate	Juvenile; iliac crest		10	Unknown	0-25	epiphyseal surface present		≤23		SSB - 253
248	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Calcaneous	Juvenile; plantar fragment	CAL		Unknown	0-25	epiphyseal surface present		≤20		SSB- 335
249	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Part of supra/infra orbital margin	1or2or12or13		Unknown	0-25					
250	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Unidentified fragments	Juvenile	n/a		n/a	n/a	epiphyseal surfaces present		8		
251	NM2008.188	22	A61	General Bones (Burnt) 18.3.52 E.W.H.	Animal		n/a		n/a	n/a			2		
252	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Frontal crest	1,2		n/a	0-25	not burnt				
253	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Unknown fragment 20-30mm	n/a		n/a	n/a	not burnt				
254	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Mandible	Mental spine & digastric fossae present, no alveolar/mental eminence		7	n/a	0-25	not burnt				
255	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Unknown fragment 50-60mm	n/a		n/a	n/a	not burnt, occiptal due to thickness? 5mm thick. Small grooves present				
256	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Zygomatic process of temporal		7	Right	0-25	not burnt				
257	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Frontal horizontal plate, superior orbital margin and meningeal grooves		1	Right	0-25	partial section burnt				2

258	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Internal accoustic meatus present		7	Right	0-25	not burnt			
259	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Unknown fragment 20-30mm	n/a		n/a	n/a	not burnt, 2 canals present			
260	NM2008.188	23	A61	General Bones (Burnt) 18.3.52 E.W.H.	Skull	Unknown fragment 20-30mm	n/a		n/a	n/a	not burnt, juvenile temporal mandibular fossa/zygometic process?			
261	NM2008.188	24	A61	General Bones (Burnt) 18.3.52 E.W.H.	Rib fragments	Unknown; mid-section		3	Unknown	n/a		2		
262	NM2008.188	24	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Cervical; body only		1	n/a	25-75	body shape indicative of cervical			
263	NM2008.188	24	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Unknown; body only		1	n/a	25-75				
264	NM2008.188	24	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Unknown; Transverse process	2or3		n/a	0-25				
265	NM2008.188	24	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Unknown; Transverse process	2or3		n/a	0-25				
266	NM2008.188	24	A61	General Bones (Burnt) 18.3.52 E.W.H.	Vertebra	Unknown; Transverse process	2or3		n/a	0-25				
267	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Metacarpal	Third; proximal end	1,3		Right	25-75				
268	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Metatarsal	Fifth; proximal end and shaft	1,3		Left	75-100				
269	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Metatarsal	Second	1,2,3		Right		100			
270	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Metatarsal	Third; proximal end	1,3		Left	25-75				
271	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Metatarsal	Fourth or fifth	1,2,3		Left	75-100	Mis-shapened proximal end seemingly morphed between the 4th/5th			
272	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Metacarpal/metatarsal	Unknown; distal end	2,3		Unknown	25-75				
273	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Metacarpal/metatarsal	Unknown; distal end	2,3		Unknown	25-75	not burnt, one above is burnt			
274	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Phalanx	Unknown; hand	2,3		Unknown	75-100				
275	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Phalanx	Proximal; hand	1,2,3		Unknown	75-100	First?			
276	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Tarsal	Calcaneous; dorsal half - fragmented transversally	CAL		Left	25-75				
277	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Tarsal	Medial Cuneiform	MC		Right	75-100				
278	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Tarsal	Talus; partial calcaneal articular surface and trochlea	TAL		Unknown	0-25				
279	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Tarsal	Talus; partial calcaneal articular surface and trochlea	TAL		Unknown	0-25				
280	NM2008.188	25	A61	General Bones (Burnt) 18.3.52 E.W.H.	Carpal	Unknown fragment 20-30mm	n/a		Unknown	n/a	Trapezium? Large fragment with defining articular surfaces missing			
281	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Mandible	Right mandibular condyle		5	n/a	0-25				
282	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Humerus	Shaft; distal end	7,8		Right	25-75				
283	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Humerus	Shaft; mid-section	9,10		Unknown	25-75				
284	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Patella	Complete	PAT		Right	75-100				
285	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Fibula	Shaft; mid-section	3or4or5or6		Unknown	0-25				
286	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Femur	Shaft; mid-section	7,8		Unknown	0-25				
287	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Humerus/Femur	Head only	n/a		Unknown	n/a	too fragmented to determine			
288	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Tibia	Shaft; mid-section in two articulating fragments	8or9or10		Unknown	25-75				
289	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Ulna	Proximal half	A,B,C,D		Right	25-75				
290	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Radius	Shaft; mid-section		8	Unknown	25-75				
291	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Femur	A distal epicondyle	9or10		Unknown	0-25				
292	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone	Unidentified shaft	n/a		n/a	n/a	animal? Shaft too flat to resemble human, too large to be juvenile			
293	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone	Unidentified shaft	n/a		n/a	n/a	animal or juvenile?			
294	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone	Unidentified shaft	n/a		n/a	n/a	animal or juvenile?			
295	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone fragments	Unidentified fragments 20-40mm	n/a		n/a	n/a		1		
296	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone fragments	Unidentified fragments 40-60mm	n/a		n/a	n/a		2		
297	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone fragments	Unidentified fragments 60-80mm	n/a		n/a	n/a		4		
298	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone fragments	Unidentified fragments 80-100mm	n/a		n/a	n/a		4		
299	NM2008.188	26	A61	General Bones (Burnt) 18.3.52 E.W.H.	Long bone fragments	Unidentified fragments >100mm	n/a		n/a	n/a		2		
300	NM2008.188	27	A61	General Bones (Burnt) 18.3.52 E.W.H.	Unidentified fragments		n/a		n/a	n/a		294.17g		
301	NM2008.188	28	A61	Skull FF 18.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	10		
302	NM2008.188	28	A61	Skull FF 18.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	6or7		Unknown	0-25	Probably parietal	5		
303	NM2008.188	28	A61	Skull FF 18.3.52 E.W.H.	Skull	Extrasutural bone	Unknown		n/a	0-25	wormian suture			
304	NM2008.188	28	A61	Skull FF 18.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		12		
305	NM2008.188	28	A61	Skull FF 18.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		32.07/83.30g		
306	NM2008.188	28	A61	Skull FF 18.3.52 E.W.H.	Long bone	Juvenile; unidentified	n/a		n/a	n/a	Epiphyseal surface only just developing - neoneatal?			
307	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	6		
308	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25		9		
309	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		17		
310	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		15.30/87.90g		
311	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Skull	Juvenile; Frontal	1or2		n/a	0-25	metopic suture present - aging			
312	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Skull	Occiptal; internal crest		5	n/a	0-25	Quite small in size as well			
313	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Skull	Temporal; petrous part		6	Left	0-25	use for MNI			
314	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Long bone fragment	Juvenile OR metacarpal/metatarsal??; shaft; mid-section	n/a		n/a	n/a	Very small diameter			
315	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Tooth	Molar; unknown position	1or12or13		Unknown	25-75				
316	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Tooth	RPM^3		13	Right	75-100				
317	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Tooth	Canine	1or12or13		Unknown	25-75				
318	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Teeth fragments	Root fragments	n/a		n/a	0-25		2		
319	NM2008.188	29	A61	Skull QQ 20.3.52 E.W.H.	Teeth fragments	Crown fragments	n/a		n/a	0-25		3		
320	NM2008.188	30	A61	Skull E4 21.3.52 G.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	12		
321	NM2008.188	30	A61	Skull E4 21.3.52 G.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		29		
322	NM2008.188	30	A61	Skull E4 21.3.52 G.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		5.10/75.23g		
323	NM2008.188	30	A61	Skull E4 21.3.52 G.W.H.	Skull	Temporal; external auditory meatus and mastoid		7	Right	0-25	Sex mastoid			1
324	NM2008.188	30	A61	Skull E4 21.3.52 G.W.H.	Skull	Temporal; petrous part		7	Right	0-25				
325	NM2008.188	30	A61	Skull E4 21.3.52 G.W.H.	Long bone fragment	Juvenile OR metacarpal/metatarsal??; shaft; mid-section	n/a		n/a	n/a	Very small diameter			
326	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Very thick bone - adult? But open sutures	11		
327	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		39		
328	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25		14		
329	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		68.88/355.40g		
330	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull fragments	Occipital; some nuchal crest		5	n/a	0-25	not enough for sexing	2		
331	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull	Frontal; left suprorbital margin and foramina		2	n/a	0-25	has a supraorbital spur	1 to 2		
332	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull	Temporal; mastoid		7	Right	0-25		2 to 3		
333	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull	Temporal; external auditory meatus		7	Right	0-25	these 3 don't fit, but match each other			
334	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Skull	Temporal; internal auditory meatus		7	Right	0-25				
335	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Vertebra	Thoracic; lamina and left superior articular facet and spine	3,4		n/a	25-75				
336	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Premolar	LPM^3		1	Left	75-100	LEH, some tooth wear			
337	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Molar	M^3	12or13		Unknown	75-100				
338	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Molar	M^2	12or13		Unknown	75-100	Some dental wear			
339	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Molar	M^1	12or13		Unknown	75-100	Some dental wear			
340	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Molar	Unknown	n/a		n/a	25-75	Moderate dental wear			
341	NM2008.188	31	A61	Skull γ 13.3.52 E.W.H.	Teeth fragments	Unidentified	n/a		n/a	n/a		9		
342	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	8		

343	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			20		
344	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			5		
345	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			18.44/156.57g		
346	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Mandible	Right gonal angle	1,3,5,6		n/a	25-75		robust muscle attachments, including extramolar sulcus			buccintator, pterygoids and masseter
347	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Mandible	Left gonal angle - RC (in 2 articualting fragments) with M1 in situ	1,2,6		n/a	25-75		gracile muscle attachments dif. person. M3 unerupted. Some dental wear			
348	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Skull	Frontal - crest and partial left supraobital margin	1,2		n/a	0-25		partial metopic still present			1
349	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Skull	Occipital; some transverse sulcus		5	n/a	0-25					
350	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Skull	Temporal - internal auditory meatus		7	Right	0-25					
351	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Innominate	Juvenile; iliac crest		10	Unknown	0-25				≤23	SSB - 253
352	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Premolar	PM_3		1	Right	75-100		LEH, some tooth wear			
353	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Incisor	I_2		7	Left		100				
354	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Incisor	I_1		7	Unknown	75-100					
355	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Incisor	I_2		7	Unknown	75-100		has a apex...			
356	NM2008.188	32	A61	Skull F4 21.3.52 E.W.H.	Tooth fragments	Unidentified	n/a		n/a	n/a			19		
357	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	12		
358	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			24		
359	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			10		
360	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			46.92/130.30g		
361	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Skull	Temporal; internal auditory meatus		7	Right	0-25					
362	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Skull	Temporal; internal auditory meatus		6	Left	0-25					
363	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Skull	Temporal; beginning of zygomatic process		6	Left	0-25					
364	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Vertebral fragments	Unidentified	n/a		n/a	n/a		animal even?	5		
365	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Vertebra	Axis; an articular facet	2or3		n/a	0-25					
366	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Rib	Tubercle	1,2		Left	0-25					
367	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Rib	Shaft; mid-section		2	Unknown	0-25					
368	NM2008.188	33	A61	Skull CC 17.3.52 E.W.H.	Femur	Juvenile; proximal diaphysis		3	Unknown	0-25		Very young juvenile - aging		≤20	SSB - 295, metaphysis 10mm = fetal
369	NM2008.188	34	A61	Skull ɑ (omega) 17.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	8		
370	NM2008.188	34	A61	Skull ɑ (omega) 17.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			35		
371	NM2008.188	34	A61	Skull ɑ (omega) 17.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			10		
372	NM2008.188	34	A61	Skull ɑ (omega) 17.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			44.65/122.43g		
373	NM2008.188	34	A61	Skull ɑ (omega) 17.3.52 E.W.H.	Skull	Frontal; crest	1,2		n/a	0-25					
374	NM2008.188	34	A61	Skull ɑ (omega) 17.3.52 E.W.H.	Skull	Occiptal; right occiptal condyle		5	n/a	0-25					
375	NM2008.188	35	A61	Skull AA 17.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		2 articulating fragments	13		
376	NM2008.188	35	A61	Skull AA 17.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			46		
377	NM2008.188	35	A61	Skull AA 17.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			14		
378	NM2008.188	35	A61	Skull AA 17.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			41.48/288.04g		
379	NM2008.188	35	A61	Skull AA 17.3.52 E.W.H.	Skull	Temporal; mastoid, EAM & IAM (in 2 aticulating fragments)		6	Left	0-25					3
380	NM2008.188	35	A61	Skull AA 17.3.52 E.W.H.	Skull	Temporal; internal auditory meatus		7	Right	0-25					
381	NM2008.188	35	A61	Skull AA 17.3.52 E.W.H.	Skull	Zygoma; temporal process		10	Left	0-25					
382	NM2008.188	36	A61	Skull EE 18.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	8		
383	NM2008.188	36	A61	Skull EE 18.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			26		
384	NM2008.188	36	A61	Skull EE 18.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			11		
385	NM2008.188	36	A61	Skull EE 18.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		Several rocks also present	63.50/176.06g		
386	NM2008.188	36	A61	Skull EE 18.3.52 E.W.H.	Skull	Temporal; internal auditory meatus		7	Right	0-25					
387	NM2008.188	36	A61	Skull EE 18.3.52 E.W.H.	Skull	Frontal; glabella, both supraorbital ridges (in 2 articulating fragments)	1,2		n/a	0-25		assess ridge for sex		4 to 5	
388	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	3		
389	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			27		
390	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			41.53/119.38g		
391	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull	Temporal; mastoid and external auditory meatus		6	Left	0-25				"young 4"	juvenile
392	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull	Juvenile; Temporal; mastoid and external auditory meatus		7	Right	0-25		measure for aging		"young 2"	juvenile
393	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull	Occipital; sphenooccipital synchondrosis		5	n/a	0-25		aging		4y7m-18	SSB - 13,15
394	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull	Temporal; internal auditory meatus		6	Left	0-25					
395	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull	Temporal; internal auditory meatus		6	Left	0-25		at least 2			
396	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Skull	Occipital; an occipital condyle		5	n/a	0-25					
397	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Molar	RM^1		13	Right	75-100					
398	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Molar	M^2? (in 3 articulating fragments	12or13		Unknown	75-100					
399	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Molar	Deciduous fragment - bulbous crown evident	n/a		n/a	0-25					
400	NM2008.188	37	A61	Skull KK 18.3.52 E.W.H.	Tooth fragments	Unidentified	n/a		n/a	0-25		plus 1 shell fragment	4		
401	NM2008.188	38	A61	Skull C 12.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	6		
402	NM2008.188	38	A61	Skull C 12.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			9		
403	NM2008.188	38	A61	Skull C 12.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			5		
404	NM2008.188	38	A61	Skull C 12.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			6.71/182.34g		
405	NM2008.188	38	A61	Skull C 12.3.52 E.W.H.	Skull	Occipital; internal crest		5	n/a	0-25		but no nuchal area?...			
406	NM2008.188	38	A61	Skull C 12.3.52 E.W.H.	Skull	Frontal; left lateral supraorbital margin		2	n/a	0-25		sexing margin			5
407	NM2008.188	38	A61	Skull C 12.3.52 E.W.H.	Skull	Temporal; EAM, mandibular notch and zygomatic process		7	Right	0-25					
408	NM2008.188	39	A61	Skull H4 21.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	3		
409	NM2008.188	39	A61	Skull H4 21.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			5		
410	NM2008.188	39	A61	Skull H4 21.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			4		
411	NM2008.188	39	A61	Skull H4 21.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			2.35/37.66g		
412	NM2008.188	39	A61	Skull H4 21.3.52 E.W.H.	Skull	Occipital; transverse sulcus		5	n/a	0-25		again but no nuchal area?..			
413	NM2008.188	40	A61	Skull J 17.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	3		
414	NM2008.188	40	A61	Skull J 17.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			9		
415	NM2008.188	40	A61	Skull J 17.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			6		
416	NM2008.188	40	A61	Skull J 17.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			13.52/89.35g		
417	NM2008.188	40	A61	Skull J 17.3.52 E.W.H.	Skull	Occipital; transverse sulcus		5	n/a	0-25		nuchal area present			5

REF	Reg No.	Bag no.	Tomb No.	Label	Identification	Description	Zone	Side	Preservation %	Notes	Weight/Count	Sex/Age	Extra Info
2	NM2008.189	11	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Mandible	Right condyle to RM_1 - articulates with REF 3	1,3,4,5,6	n/a	25-75	Unerupted RM3 in situ, sharp coronoid process			3rd molar too variable to age
3	NM2008.189	11	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Mandible	Right mental foramen - articulates with REF 2	1,2,7	n/a	0-25	partial premolar			3rd molar too variable to age
4	NM2008.189	11	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Teeth fragments	Unidentifed root fragments	n/a	n/a	n/a			3	
5	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Mandible	From right condyle to RC	1,2,3,4,5,6	n/a	25-75	Antemortem tooth loos RM_1 and RM_2			Very robust in shape and muscle attachments. Very long and narrow mandible
6	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Mandible	Right condyle and ramus	3,5,6	n/a	0-25	Wide mandibular condyle in comparison to 2			
7	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Mandible	Left coronoid process	3,4	n/a	0-25	coronoid process quite thin and sharp, and in row 5			
8	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Maxilla	RPM_2 to RI_1		13 Right	0-25	pitting on the palatal process			
9	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Maxilla	RPM_2 to RI_1		13 Right	0-25				
10	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Skull	Frontal; frontal crest and a right sinus present	1,2	n/a	0-25				
11	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Skull	Unidentified	n/a	n/a	n/a				
12	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Skull	Unidentified skull fragments	n/a	n/a	n/a	Broken along markedly open sutures; apparent scratch lines on one		3	
13	NM2008.189	12	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Skull	Unidentified skull fragments	n/a	n/a	n/a			7	
14	NM2008.189	13	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Innominate	Juvenile; almost complete ischium	2,4,6,11	Right	0-25	Possible for aging		9-10 yrs	Rissech et al
15	NM2008.189	13	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Phalanx	Juvenile; diaphysis only	2,3	Unknown	75-100			≤16.5	SSB - 228
16	NM2008.189	13	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	Juvenile; proximal diaphysis		3 Left	0-25	Epiphyseal surface present for greater trochanter		≤19	SSB - 276
17	NM2008.189	13	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Tibia	Juvenile; proximal diaphysis	4,7,8	Left	25-75			≤20	SSB - 295
18	NM2008.189	13	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Long bone fragment	Juvenile; diaphysis fragment 40-60mm	n/a	n/a	n/a				
19	NM2008.189	13	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Unidentified fragments	Juvenile; epiphyseal surfaces present	n/a	n/a	n/a			4	
20	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Innominate	Posterio-inferior acetabulum, superior ischium & greater sciatic notch	1,2,4,5	Left	0-25	Possible for sexing		2 to 3	
21	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Clavicle	Shaft; mid-section	2,3	Right	25-75	Lack of s-shape, antemortem hole across the inferior shaft.			
22	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Clavicle	Juvenile?; shaft mid-section	2,3	Left	25-75	Size suggests juvenile			
23	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Scapula fragments	Fragments from a border; 20-40mm	n/a	n/a	n/a			2	
24	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Scapula	Glenoid fossa	2,3,5	Right	0-25				
25	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Rib fragments	Unknown; mid-section fragments	n/a	n/a	n/a			11	
26	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Rib	Unknown; tubercle present	1,2	Right	0-25				
27	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Rib	Unknown; tubercle present	1,2	Right	0-25				
28	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Vertebra	Lumbar; body and left superior articular facet	1,3	n/a	25-75	Some osteophytic lipping present			
29	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Vertebra fragments	Lumbar; articular facets only	2,3	n/a	0-25			2	
30	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Vertebra	Thoracic; articular facets only	2,3	n/a	0-25				
31	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Vertebra fragments	Unknown; body only		1 n/a	n/a			2	
32	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Vertebra fragments	Unknown; unidentified fragments	n/a	n/a	n/a			11	
33	NM2008.189	14	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Calcaneous	Calncaneal tuber and partial articular with tibia present	CAL	Unknown	0-25				
34	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal	2nd	1,3	Left	75-100				
35	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal	2nd; proximal end	1,3	Left	25-75				
36	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal	3rd	1,2,3	Right	100				
37	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal	1st	1,2,3	Right	100				
38	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal/metatarsal	Unknown; shaft and partial proximal end	1,3	Unknown	25-75				
39	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal/metatarsal	Unknown; shaft and partial proximal end	1,3	Unknown	25-75				
40	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal/metatarsal	Unknown; shaft only		3 Unknown	25-75	small diameter suggesting juvenile			
41	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal/metatarsal	Unknown; shaft only		3 Unknown	25-75				
42	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Metacarpal/metatarsal	Unknown; shaft and partial distal end	2,3	Unknown	25-75				
43	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Phalanges	Juvenile; unknown hand	1,2,3	Unknown	n/a	Unfused proximal end		2 ≤16.5	SSB - 228
44	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Phalanges	Unknown hand; shaft and distal end only	2,3	Unknown	n/a			2	
45	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Phalanx	Unknown hand; intermediate phalanx	1,2,3	Unknown	100				
46	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Talus	Subtalar facets and trochlea fragmented off	TAL	Right	75-100	Size suggests juvenile			
47	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Talus	Plantar surface present only	TAL	Left	25-75				
48	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Calcaneous	Sustentacular tali and tibial articulation present	CAL	Right	25-75				
49	NM2008.189	15	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Radius	Shaft; mid-section with radial tuberosity	5,6,7	Unknown	25-75				
50	NM2008.189	16	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Shell	n/a	n/a	n/a	n/a				
51	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Radius	Shaft; mid-section with radial tuberosity	5,6,7	Left	25-75				
52	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Radius	Proximal head and partial neck only	1,2,5	Unknown	0-25				
53	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Radius fragments	Shaft; mid-section	n/a	n/a	n/a			4	
54	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Ulna	Proximal half	A,B,C,D,E	Left	25-75				
55	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Ulna	Proximal end	C,D,E	Left	0-25				
56	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Ulna	Juvenile; proximal diaphysis	C,D,E	Right	25-75				metaphysis 13mm = 6.30 yrs
57	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Ulna fragments	Shaft; midsections	E	n/a	n/a			6	
58	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	Shaft; mid-section (in 3 articulating fragments)	6,7,8	Unknown	25-75				
59	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Humerus	Distal end (in 2 articulating fragments)	3,4,5,6,7,8	Left	25-75	Septal aperture			
60	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Humerus	Head only		2 Unknown	0-25				
61	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Humerus	Shaft; mid-section	7,8	Right	25-75				
62	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Humerus	Shaft; mid-section	7,8	Left	25-75				
63	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Humerus	Shaft; mid-section	9,10	Unknown	25-75				
64	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	Shaft; mid-section		6 Unknown	25-75				
65	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	Shaft; mid-section	6,7,8	Left	25-75				
66	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	Shaft; mid-section	6,7,8	Right	25-75				
67	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	A distal epicondyle	9or10	Unknown	0-25				
68	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	A distal epicondyle	9or10	Unknown	0-25				
69	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	A distal epicondyle	9or10	Unknown	0-25				
70	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Tibia	Shaft; mid-section	8,9,10	Unknown	25-75				
71	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Tibia	Distal end	5,6	Left	0-25				
72	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Tibia	Shaft; mid-section	8or9	Unknown	0-25	Size suggests juvenile			
73	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Humerus/Femur	Head fragment only	n/a	n/a	n/a				
74	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	Shaft; mid-section (in 2 articulating fragments)	7,8	Unknown	0-25	Size suggests juvenile			
75	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	Shaft; mid-section	7,8	Unknown	0-25	Linea aspera? Very weak attachment sight though			
76	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Humerus	Shaft; mid-section	7,8	Unknown	0-25				
77	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Long bone fragment	Zone size; 20-40mm	n/a	n/a	n/a			2	
78	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Long bone fragment	Zone size; 40-60mm	n/a	n/a	n/a			7	
79	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Long bone fragment	Zone size; 60-80mm	n/a	n/a	n/a			4	
80	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Long bone fragment	Zone size; 80-100mm	n/a	n/a	n/a			7	
81	NM2008.189	17	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Long bone fragment	Zone size; >100mm	n/a	n/a	n/a			5	
82	NM2008.189	18	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Rib fragment	Body fragment		3 Unknown	0-25				
83	NM2008.189	18	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Femur	Juvenile; proximal diaphysis	3,5	Unknown	0-25	no epiphyseal surface for G.T., but one for head (head metaphysis fragmented)		1-5yrs	SSB - 276, and Cardoso
84	NM2008.189	18	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Rock	n/a	n/a	n/a	n/a			1	
85	NM2008.189	18	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Animal bones	n/a	n/a	n/a	n/a			3	
86	NM2008.189	19	A61	General Bones (Burned) Mainly Human 13.3.52 E.W.H.	Unidentified fragments	n/a	n/a	n/a	n/a		770.13g		
87	NM2008.189	20	A61	General Bones (Burned)	Innominate	Ilium		10 Unknown	0-25				
88	NM2008.189	20	A61	General Bones (Burned)	Skull	Temporal; IAM		6 Left	0-25				
89	NM2008.189	20	A61	General Bones (Burned)	Skull fragments	Parietal; meningeal grooves present	3or4	Unknown	0-25			5	
90	NM2008.189	20	A61	General Bones (Burned)	Skull fragments	Unknown	n/a	n/a	0-25	two present open sutures		6	
91	NM2008.189	20	A61	General Bones (Burned)	Skull	Occiptal; sigmoid suture		5 n/a	0-25				
92	NM2008.189	20	A61	General Bones (Burned)	Femur	Lesser trochanter		2 Unknown	0-25				
93	NM2008.189	21	A61	General Bones (Burned)	Femur	Juvenile; Distal diaphysis and corresponding distal epiphysis	7,8,9,10,11	Right	25-75			≤20	SSB - 276
94	NM2008.189	21	A61	General Bones (Burned)	Femur	Juvenile; Distal epiphysis		9 Unknown	0-25	Completely unfused still		≤20	SSB - 276
95	NM2008.189	21	A61	General Bones (Burned)	Humerus	Juvenile; Distal diaphysis	7,8	Right	0-25	no composite or condyle		≤18	SSB - 183
96	NM2008.189	21	A61	General Bones (Burned)	Innominate	Juvenile; Iliac crest epiphyseal surface		10 Unknown	0-25			≤23	SSB - 253

97	NM2008.189	21	A61	General Bones (Burned)	Vertebra	Juvenile; Unknown, body fragment only		1	n/a	0-25			≤25	SSB - 120
98	NM2008.189	21	A61	General Bones (Burned)	Tibia	Juvenile; Proximal epiphysis, one articular facet only	1or3,2		Unknown	0-25			≤20	SSB - 295
99	NM2008.189	21	A61	General Bones (Burned)	Humerus	Juvenile; Proximal epiphysis, partial head only	1,2		Left	0-25			≤21	SSB - 183, epiphysis width 33.25mm = 14.16 yrs
100	NM2008.189	22	A61	General Bones (Burned)	Vertebra	C1; Left articular surfaces and left arch/pedicle		3	n/a	25-75				
101	NM2008.189	22	A61	General Bones (Burned)	Vertebra	C1; dens articulation and partial left articular surfaces		3	n/a	0-25				
102	NM2008.189	22	A61	General Bones (Burned)	Vertebra	C2; left transverse foramina and inferior facet		3	n/a	0-25				
103	NM2008.189	22	A61	General Bones (Burned)	Vertebra	Lumbar	1,2,3,4		n/a	75-100	osteophytic lipping 5mm			
104	NM2008.189	22	A61	General Bones (Burned)	Vertebra	Lumbar; left half of body and left paedicle/lamins and spine	1,3,4		n/a	25-75				
105	NM2008.189	22	A61	General Bones (Burned)	Vertebra	Juvenile?; Lumbar	1,2,3,4		n/a	75-100	Size suggests juvenile - surface of body missing			
106	NM2008.189	22	A61	General Bones (Burned)	Vertebra	Lumbar; body and right superior articular facet	1,2		n/a	25-75				
107	NM2008.189	22	A61	General Bones (Burned)	Vertebra	Lumbar; inferior articular facets and spine	2,3,4		n/a	0-25				
108	NM2008.189	22	A61	General Bones (Burned)	Vertebra	Sacral; superior vertebral joint and left superior articular facet	1,3,4		n/a	0-25				
109	NM2008.189	22	A61	General Bones (Burned)	Vertebra	Unknown; body only		1	n/a	n/a	1 clearly larger (lumbar? Mild osteophytic lipping 2mm, body compression 25 to 18mm)		5	
110	NM2008.189	22	A61	General Bones (Burned)	Vertebra	Unknown; unidentified fragments	n/a		n/a	n/a			23	
111	NM2008.189	23	A61	General Bones (Burned)	Scapula	Glenoid fossa, coracoid and partial acromion	1,2,3,4,5		Right	25-75				
112	NM2008.189	23	A61	General Bones (Burned)	Scapula	Partial acromion process		4	Left	0-25				
113	NM2008.189	23	A61	General Bones (Burned)	Scapula fragments	Border fragments	n/a		Unknown	0-25			2	
114	NM2008.189	23	A61	General Bones (Burned)	Rib	Unknown; tubercle present	1,2		Left	0-25				
115	NM2008.189	23	A61	General Bones (Burned)	Rib fragments	Unknown, mid-sectoin fragments		3	Unknown	0-25			5	
116	NM2008.189	23	A61	General Bones (Burned)	Clavicle	Lateral end	2,3		Unknown	25-75				
117	NM2008.189	23	A61	General Bones (Burned)	Clavicle	Mid-section		3	Unknown	25-75				
118	NM2008.189	23	A61	General Bones (Burned)	Clavicle	Lateral end	2,3		Right	25-75	Very prominent conoid tubercle			
119	NM2008.189	23	A61	General Bones (Burned)	Innominate	Auricuar surface and greater sciatic notch	5,7,10		Right	0-25	Sexing? Look at photos…just shallow?			
120	NM2008.189	23	A61	General Bones (Burned)	Innominate	Partial acetabulum	1,2		Unknown	0-25				
121	NM2008.189	23	A61	General Bones (Burned)	Innominate	Juvenile; almost complete ischium	2,4,6,11		Right	0-25	Horizontal width of acetabular surface = 39mm		9-10 yrs	Rissech
122	NM2008.189	23	A61	General Bones (Burned)	Innominate fragments	Iliac crest and fossa fragments	10,12		Unknown	0-25			6	
123	NM2008.189	23	A61	General Bones (Burned)	Unidentified fragments	Unidentified fragments of the axial skeleton	n/a		n/a	n/a			7	
124	NM2008.189	24	A61	General Bones (Burned)	Calcaneous		CAL		Left		100 Very gracile			
125	NM2008.189	24	A61	General Bones (Burned)	Navicular		NAV		Right	75-100				
126	NM2008.189	24	A61	General Bones (Burned)	Cuneiform	Medial cunieform	CUN1		Right	25-75				
127	NM2008.189	24	A61	General Bones (Burned)	Calcaneous	Posterior portion only	CAL		Unknown	0-25				
128	NM2008.189	24	A61	General Bones (Burned)	Navicular	Juvenile?	NAV		Left	25-75	Size suggest juvenile			
129	NM2008.189	24	A61	General Bones (Burned)	Metacarpal	2nd; proximal end and shaft	1,3		Left	75-100				
130	NM2008.189	24	A61	General Bones (Burned)	Metatarsal	5th; proximal end and shaft	1,3		Right	25-75				
131	NM2008.189	24	A61	General Bones (Burned)	Metatarsal	3rd	1,2,3		Right	75-100				
132	NM2008.189	24	A61	General Bones (Burned)	Metatarsal	4th; proximal end and shaft	1,3		Right	75-100				
133	NM2008.189	24	A61	General Bones (Burned)	Metacarpal/metatarsal	Unknown; shaft only		3	Unknown	25-75				
134	NM2008.189	24	A61	General Bones (Burned)	Metacarpal	Juvenile; Unknown; shaft only		3	Unknown	25-75	slight epiphyseal surface present at distal end		≤16.5	SSB - 228
135	NM2008.189	24	A61	General Bones (Burned)	Phalanx	Foot; Unknown proximal	1,2,3		Unknown	75-100				
136	NM2008.189	24	A61	General Bones (Burned)	Phalanx	Hand; First proximal	1,2,3		Unknown		100			
137	NM2008.189	24	A61	General Bones (Burned)	Phalanx	Juvenile; Foot; unknown; shaft and head	2,3		Unknown	75-100			≤18	SSB - 335
138	NM2008.189	24	A61	General Bones (Burned)	Unidentified fragments	zone size 20-40mm	n/a		n/a	n/a	animal vertebra fragment?			
139	NM2008.189	25	A61	General Bones (Burned)	Humerus	Shaft; mid-section, nutrient foramen present	7,8		Right	0-25				
140	NM2008.189	25	A61	General Bones (Burned)	Humerus	Shaft; mid-section (in 2 articulating fragments)	7,8		Unknown	25-75				
141	NM2008.189	25	A61	General Bones (Burned)	Humerus	Shaft; distal-section	7,8		Right	0-25	Size suggest juvenile			
142	NM2008.189	25	A61	General Bones (Burned)	Humerus	Shaft; mid-section	9,10		Unknown	0-25				
143	NM2008.189	25	A61	General Bones (Burned)	Ulna	Juvenile; most of diaphysis	D,E,F,G,H		Left	75-100	not enough to measure length		≤18	SSB - 213
144	NM2008.189	25	A61	General Bones (Burned)	Ulna	Proximal end (in 2 articulating fragments)	A,B,C,D,E		Left	25-75				
145	NM2008.189	25	A61	General Bones (Burned)	Ulna	Shaft; proximal end	E		Left	0-25				
146	NM2008.189	25	A61	General Bones (Burned)	Ulna	Shaft; proximal end (in 2 articulating fragments)	E, F		Right	25-75	small diameter suggesting juvenile			
147	NM2008.189	25	A61	General Bones (Burned)	Ulna	Shaft; mid-section	EorForG		Unknown	0-25				
148	NM2008.189	25	A61	General Bones (Burned)	Ulna	Shaft; mid-section	EorForG		Unknown	25-75	Same colouring as fragment above			
149	NM2008.189	25	A61	General Bones (Burned)	Ulna	Shaft; mid-section	E		Unknown	25-75	Darker than two fragments above			
150	NM2008.189	25	A61	General Bones (Burned)	Radius	Distal end	3,4,8,9,10,J		Left	25-75				
151	NM2008.189	25	A61	General Bones (Burned)	Radius	Juvenile; proximal diaphysis (in 2 articulating fragments)	5,6,7,8,9,10		Right	75-100			≤18	SSB - 199, metaphysis 14mm = 9.66 yrs
152	NM2008.189	25	A61	General Bones (Burned)	Radius	Shaft; mid-section	6,7or8		Unknown	25-75				
153	NM2008.189	25	A61	General Bones (Burned)	Radius	Shaft; mid-section	6,7		Unknown	0-25	small diameter suggesting juvenile, burning pattern very interesting			
154	NM2008.189	25	A61	General Bones (Burned)	Radius	Shaft; mid-section	8,9,10		Left	25-75				
155	NM2008.189	25	A61	General Bones (Burned)	Patella		PAT		Right	75-100	Larger than left patella listed below - MNI issue?			
156	NM2008.189	25	A61	General Bones (Burned)	Patella		PAT		Left	75-100	Eburnation and osteophytic growith on antero-lateral surface			
157	NM2008.189	25	A61	General Bones (Burned)	Femur	Juvenile; distal end of diaphysis (in 3 articulating fragments)	6,7,8		Right	25-75			≤20	SSB - 276, metaphysis 50.25mm = 7.36 yrs
158	NM2008.189	25	A61	General Bones (Burned)	Femur	Shaft; mid-section	6or7,8		Unknown	0-25	Very pronounced linea aspera			
159	NM2008.189	25	A61	General Bones (Burned)	Femur	Shaft; mid-section	6or7,8		Unknown	0-25				
160	NM2008.189	25	A61	General Bones (Burned)	Femur	An epicondyle	9or10		Unknown	0-25				
161	NM2008.189	25	A61	General Bones (Burned)	Femur	An epicondyle	9or10		Unknown	0-25				
162	NM2008.189	25	A61	General Bones (Burned)	Tibia fragment	Proximal condylar fragment	1or3		n/a	0-25				
163	NM2008.189	25	A61	General Bones (Burned)	Fibula	Shaft; mid-section (in 2 articulating fragments)	3or4or5or6		Unknown	25-75				
164	NM2008.189	25	A61	General Bones (Burned)	Fibula	Shaft; mid-section	3or4or5or6		Unknown	25-75				
165	NM2008.189	25	A61	General Bones (Burned)	Long bone fragments	Zone size 40-60mm, compete circumference to fragment	n/a		Unknown	n/a	Juvenile? and so indeterminate			
166	NM2008.189	25	A61	General Bones (Burned)	Long bone fragments	Zone size 20-40mm	n/a		n/a	n/a			5	
167	NM2008.189	25	A61	General Bones (Burned)	Long bone fragments	Zone size 40-60mm	n/a		n/a	n/a			1	
168	NM2008.189	25	A61	General Bones (Burned)	Long bone fragments	Zone size 60-80mm	n/a		n/a	n/a			3	
169	NM2008.189	25	A61	General Bones (Burned)	Long bone fragments	Zone size 80-100mm	n/a		n/a	n/a			2	
170	NM2008.189	25	A61	General Bones (Burned)	Long bone fragments	Zone size <100mm	n/a		n/a	n/a			2	
171	NM2008.189	26	A61	General Bones (Burned)	Unidentified fragments		n/a		n/a	n/a		477.67g		
172	NM2008.189	27	A61	General Bones (Burned)	Rocks		n/a		n/a	n/a			5	
173	NM2008.189	28	A61	Bones (Teeth)	Premolar	PM,		1	Unknown	75-100				
174	NM2008.189	28	A61	Bones (Teeth)	Premolar	PM2		1	Unknown	75-100	linear enamel hyperplasia present			
175	NM2008.189	28	A61	Bones (Teeth)	Incisor	RI_2, crown only		7	Right	25-75	Caries on occlusal surface			
176	NM2008.189	28	A61	Bones (Teeth)	Molar	Lower; unknown		1	Unknown	75-100	dental wear on occlusal surface			
177	NM2008.189	28	A61	Bones (Teeth)	Molar	Lower; unknown; half crown and one root only		1	Unknown	25-75				
178	NM2008.189	28	A61	Bones (Teeth)	Tooth fragments		n/a		n/a	n/a			16	
179	NM2008.189	29	A61	Bones (Teeth)	Mandible	Juvenile; RM2 - RPM1	1,6		n/a	25-75	RM2 unerupted, rm2 AMTL, porous alveolar for RM1, RPM1 unerupted		7-9 ± 2 yrs	SSB - 95. Again, very robust with defining muscle attachments (see 2008.189.5)
180	NM2008.189	29	A61	Bones (Teeth)	Mandible	Mandibular condyle and coronoid process	3,4,5		Right	0-25	Very minimal ascending ramus			
181	NM2008.189	29	A61	Bones (Teeth)	Mandible	Mandibular condyle and mylohyoid groove	3,5,6		Right	0-25				
182	NM2008.189	29	A61	Bones (Teeth)	Mandible	Juvenile; Rm2-Rc	2,7		Right	0-25	Space for forming C, PM1 unerupted, PM2 not forming yet, still M2 root only		2-3 ± 1 yrs	SSB - 94
183	NM2008.189	29	A61	Bones (Teeth)	Mandible	Unknown fragment, partial aleolar present	1or2or7		Unknown	0-25				
184	NM2008.189	29	A61	Bones (Teeth)	Tooth fragments	From mandibular fragments?	n/a		n/a	n/a			4	
185	NM2008.189	30	A61	Bones (Teeth)	Vertebra	Juvenile; Unknown; body only		1	n/a	25-75			≤25	SSB - 120
186	NM2008.189	30	A61	Bones (Teeth)	Vertebra	Unknown; pedicle and lamina	2or3		n/a	0-25				
187	NM2008.189	30	A61	Bones (Teeth)	Fibula	Shaft; mid-section	5or6		Unknown	0-25				
188	NM2008.189	30	A61	Bones (Teeth)	Metatarsal	4th; proximal end and shaft	1,3		Right	75-100				
189	NM2008.189	30	A61	Bones (Teeth)	Rib fragments	Unknown; mid-section fragments	2or3		Unknown	n/a			8	
190	NM2008.189	30	A61	Bones (Teeth)	Rib	Head and tubercle		1	Right	0-25				
191	NM2008.189	30	A61	Bones (Teeth)	Unidentified fragment	Thin with growth end like epiphyseal/cartilage connection	n/a		n/a	n/a	Possibly sternal end of rib			
192	NM2008.189	31	A61	Bones (Teeth)	Rock		n/a		n/a	n/a			1	

193	NM2008.189	32	A61	Bones (Teeth)	Humerus	Juvenile; distal end of diaphysis	7,8		Right	25-75		Aging		distal metaphysis 36mm = 8.65 yrs old
194	NM2008.189	32	A61	Bones (Teeth)	Humerus	Juvenile; entire diaphysis	7,8,9,10,11		Left	75-100		Younger than above	2	diaphysial length = 128mm = 2yrs old (SSB 174). distal metaphysis = 1.85yrs or proximal = 2.18 yrs
195	NM2008.189	32	A61	Bones (Teeth)	Femur	Juvenile; proximal diaphysis	3,5,6		Left	25-75		Aging		proximal metaphysis 30.75mm = 10.33 yrs
196	NM2008.189	32	A61	Bones (Teeth)	Femur	Juvenile; proximal diaphysis	3,5		Unknown	0-25		Younger than above		proximal metaphysis 17mm = 1.47 yrs
197	NM2008.189	32	A61	Bones (Teeth)	Femur	Juvenile; proximal diaphysis	3,5,6		Unknown	25-75		Younger than above		proximal metaphysis 12.25mm = 0.27 yrs
198	NM2008.189	32	A61	Bones (Teeth)	Femur	Juvenile; proximal diaphysis with matching proximal epiphysis head	4,5		Unknown	0-25				proximal metaphysis 32.25mm = 11.41 yrs , and proximal epiphysis 33.75mm = 12.49 yrs
199	NM2008.189	32	A61	Bones (Teeth)	Femur	Juvenile; proximal diaphysis		5	Unknown	0-25				proximal metaphysis 20mm = 2.60 yrs
200	NM2008.189	32	A61	Bones (Teeth)	Vertebra	Juvenile; Unknown, body only		1	n/a	25-75			≤25	SSB - 120
201	NM2008.189	32	A61	Bones (Teeth)	Vertebra	Juvenile; Unknown, body only		1	n/a	25-75			≤25	SSB - 120
202	NM2008.189	32	A61	Bones (Teeth)	Innominate	Juvenile; Iliac crest epiphyseal surface		10	Unknown	0-25				
203	NM2008.189	32	A61	Bones (Teeth)	Metacarpal/metatarsal	Juvenile; unknown distal diaphysis only		3	Unknown	25-75				
204	NM2008.189	32	A61	Bones (Teeth)	Tibia	Juvenile; proximal diaphysis	1,3,4,7		Unknown	n/a				proximal metaphysis 26mm = 1.38 yrs
205	NM2008.189	32	A61	Bones (Teeth)	Unidentified	Juvenile	n/a		n/a	n/a				
206	NM2008.189	32	A61	Bones (Teeth)	Unidentified	Juvenile	n/a		n/a	n/a		vertebral end of rib? Head still unfused		
207	NM2008.189	33	A61	Bones (Teeth)	Vertebra	C2	1,2,3,4		n/a		100	small size, and impacted dens from injury/infection?		
208	NM2008.189	33	A61	Bones (Teeth)	Vertebra	Thoracic	1,2,3,4		n/a	75-100				
209	NM2008.189	33	A61	Bones (Teeth)	Vertebra	Juvenile; body only		1	n/a	25-75			≤25	SSB - 120
210	NM2008.189	33	A61	Bones (Teeth)	Vertebral fragments	Thoracic fragments	n/a		n/a	n/a			2	
211	NM2008.189	33	A61	Bones (Teeth)	Vertebra	Lumbar, body and an articular facet	1,2or3		n/a	25-75				
212	NM2008.189	33	A61	Bones (Teeth)	Vertebral fragments	Lumbar fragments	n/a		n/a	n/a			6	
213	NM2008.189	33	A61	Bones (Teeth)	Vertebral fragments	Unknown; body fragments only		1	n/a	n/a			4	
214	NM2008.189	33	A61	Bones (Teeth)	Vertebral fragments	Unknown; pedicle/lamina/spine fragments	2or3or4		n/a	n/a			20	
215	NM2008.189	33	A61	Bones (Teeth)	Rib	Unknown, mid-sectoin fragment	2or3		Unknown	0-25				
216	NM2008.189	34	A61	Bones (Teeth)	Innominate fragments	Iliac crest and fossa fragments	10,12		Unknown	0-25			2	
217	NM2008.189	34	A61	Bones (Teeth)	Clavicle	Shaft; mid-section	2,3		Left	25-75				
218	NM2008.189	34	A61	Bones (Teeth)	Scapula	Juvenile; Glenoid fossa and partial acromion	4,5		Right	0-25		fossa unfused and coronoid epiphyseal surface present, broken before acromion surface	≤18	SSB 164
219	NM2008.189	34	A61	Bones (Teeth)	Scapula	Acromion process		4	Right	0-25		adult		
220	NM2008.189	34	A61	Bones (Teeth)	Scapula	Juvenile; Glenoid fossa		5	Left	0-25		coronoid epiphyseal surface present - glenoid fused? No clear epiphyseal surface there	≤18	SSB 164
221	NM2008.189	34	A61	Bones (Teeth)	Scapula	Partial glenoid and partia acromion process	4,5		Left	0-25		adult		
222	NM2008.189	34	A61	Bones (Teeth)	Scapula fragment	lateral border fragments		7	Unknown	0-25			2	
223	NM2008.189	34	A61	Bones (Teeth)	Scapula	coronoid process		1	Unknown	0-25				
224	NM2008.189	34	A61	Bones (Teeth)	Scapula	scapular spine	6or8		Unknown	0-25				
225	NM2008.189	34	A61	Bones (Teeth)	Vertebra	Unidentified vertebral fragment	n/a		n/a	n/a				
226	NM2008.189	34	A61	Bones (Teeth)	Clavicle	Juvenile; shaft mid-section		2	Unknown	25-75		size sgguest juvenile - antemortem hole across edge of shaft just like NM2008.189.21		
227	NM2008.189	34	A61	Bones (Teeth)	Rib	First	1,2,3		Right	75-100				
228	NM2008.189	34	A61	Bones (Teeth)	Rib	First	1,2		Left	25-75		Slightly smaller than above		
229	NM2008.189	34	A61	Bones (Teeth)	Rib fragments	Head and/or tubercle		1	Right	0-25			2	
230	NM2008.189	34	A61	Bones (Teeth)	Rib fragments	Head and/or tubercle		1	Left	0-25			3	
231	NM2008.189	34	A61	Bones (Teeth)	Rib fragments	Shaft; mid-section	2or3		Unknown	n/a			51	
232	NM2008.189	34	A61	Bones (Teeth)	Unidentified fragment	Head of rib?	n/a		n/a	n/a		If so, head impacted in some way, not long enough to identify tubercle		
233	NM2008.189	34	A61	Bones (Teeth)	Unidentified fragment	Juvenile clavicle?	n/a		n/a	n/a		small size suggests juvenile - too thin and circular, but curved in fashion of clavicle		
234	NM2008.189	35	A61	Bones (Teeth)	Talus	missing inferior surface	TAL		Right	75-100		small size suggests juvenile		
235	NM2008.189	35	A61	Bones (Teeth)	Hamate		HAM		Right		100			
236	NM2008.189	35	A61	Bones (Teeth)	Metatarsal	2nd or 3rd; parts of base missing	1,2,3		Left	75-100				
237	NM2008.189	35	A61	Bones (Teeth)	Metatarsal	5th; proximal end and shaft	1,3		Left	25-75				
238	NM2008.189	35	A61	Bones (Teeth)	Metatarsal	Unknown; head and distal shaft	2,3		Unknown	75-100				
239	NM2008.189	35	A61	Bones (Teeth)	Metacarpal	Unknown	1,3		Unknown	75-100		Possible 2nd - in that case it's left		
240	NM2008.189	35	A61	Bones (Teeth)	Metacarpal/metatarsal	1st; head only		2	Unknown	0-25				
241	NM2008.189	35	A61	Bones (Teeth)	Phalanx	Hand; proximal	1,2,3		Unknown		100			
242	NM2008.189	35	A61	Bones (Teeth)	Phalanx	Hand; medial	1,2,3		Unknown		100			
243	NM2008.189	35	A61	Bones (Teeth)	Phalanges	Hand; unknown; distal half of shafts only	2,3		Unknown	25-75			3	
244	NM2008.189	35	A61	Bones (Teeth)	Scapula	lateral border fragment		7	Unknown	0-25				
245	NM2008.189	36	A61	Bones (Teeth)	Humerus	Shaft; mid-section (in 3 articulating fragments)	7,8,9,10,11		Left	25-75				
246	NM2008.189	36	A61	Bones (Teeth)	Humerus	Distal end; trochlea and partial medial condyle	4,5,6		Left	<25				
247	NM2008.189	36	A61	Bones (Teeth)	Humerus	Juvenile?; Shaft; mid-section	7,8,9,10		Right	25-75		Size suggests juvenile		
248	NM2008.189	36	A61	Bones (Teeth)	Humerus	Shaft; mid-section	7,8		Left	<25				
249	NM2008.189	36	A61	Bones (Teeth)	Humerus	Shaft; mid-section	9,10		Unknown	25-75				
250	NM2008.189	36	A61	Bones (Teeth)	Humerus	Shaft; mid-section	9,10		Unknown	<25				
251	NM2008.189	36	A61	Bones (Teeth)	Radius	(in 3 articulating fragments)	1 to 11		Left		100	225mm in length		157.34 - 168.38cm (Sex unknown, assumed Caucasoid - Trotter 1970)
252	NM2008.189	36	A61	Bones (Teeth)	Radius	Proximal end; head and tuberosity	1,2,5,6,7		Right	25-75				
253	NM2008.189	36	A61	Bones (Teeth)	Radius	Shaft; mid-section	6,7		Unknown	<25				
254	NM2008.189	36	A61	Bones (Teeth)	Radius	Proximal; partial head only	1or2,5		Unknown	<25				
255	NM2008.189	36	A61	Bones (Teeth)	Radius	Juvenile? Shaft; mid-sectiona and tuberosity	5,6,7		Unknown	25-75		Size suggests juvenile		
256	NM2008.189	36	A61	Bones (Teeth)	Radius	Juvenile? Shaft; mid-section	6,7,8		Unknown	25-75		Size suggests juvenile		
257	NM2008.189	36	A61	Bones (Teeth)	Ulna	Juvenile; Proximal diaphysis	C,D,E,F		Right	25-75			≤18	SSB - 213, metaphysis 12.25mm = 4.91 yrs
258	NM2008.189	36	A61	Bones (Teeth)	Ulna	Shaft; proximal end	C,E		Right	25-75				
259	NM2008.189	36	A61	Bones (Teeth)	Ulna	Juvenile; Proximal diaphysis	C,D,E		Left	25-75			≤18	SSB - 213, metaphysis 10mm = 1.77 yrs
260	NM2008.189	36	A61	Bones (Teeth)	Ulna	Juvenile; Proximal diaphysis	C,E		Left	<25			≤18	SSB - 213
261	NM2008.189	36	A61	Bones (Teeth)	Ulna	Proximal end; olecranon process	A,B,C		Left	<25				
262	NM2008.189	36	A61	Bones (Teeth)	Ulna	Shaft	C		Right	<25		Robust muscle attachments		
263	NM2008.189	36	A61	Bones (Teeth)	Femur	Proximal end; neck, greater and lower trochanters	1,2,3,5,6		Left	25-75				
264	NM2008.189	36	A61	Bones (Teeth)	Femur	Head only		4	Unknown	<25				
265	NM2008.189	36	A61	Bones (Teeth)	Femur	Shaft; mid-section	7,8		Left	25-75				
266	NM2008.189	36	A61	Bones (Teeth)	Femur fragments	An epicondyle	9or10,11		Unknown	<25			4	
267	NM2008.189	36	A61	Bones (Teeth)	Patella	Apex missing	PAT		Right	>75				
268	NM2008.189	36	A61	Bones (Teeth)	Patella	Apex missing	PAT		Right	>75				
269	NM2008.189	36	A61	Bones (Teeth)	Tibia	Juvenile; proximal diaphysis	1,3,4,7		Right	25-75		no epiphysis present, but clearly young tibia, proximal diaphyseal width = 27mm	≤20	SSB - 295, metaphysis 27mm = 1.51 yrs
270	NM2008.189	36	A61	Bones (Teeth)	Tibia	Distal end	5,6		Left	<25				
271	NM2008.189	36	A61	Bones (Teeth)	Tibia	Shaft; mid-section	8or9		Unknown	<25				
272	NM2008.189	36	A61	Bones (Teeth)	Tibia fragments	Juvenile; shaft; mid-sections	8or9or10		Unknown	25-75		size suggests juvenile	2	
273	NM2008.189	36	A61	Bones (Teeth)	Fibula	Distal end (in 2 articulating fragments)	2,3		Right	25-75				
274	NM2008.189	36	A61	Bones (Teeth)	Fibula	Shaft; mid-section	4,5or5,6		Unknown	25-75				
275	NM2008.189	36	A61	Bones (Teeth)	Fibula fragments	Shaft; mid-section	4or5or6		Unknown	25-75			2	
276	NM2008.189	36	A61	Bones (Teeth)	Long bone fragments	Unidentified long bone fragments	n/a		n/a	n/a			17	
277	NM2008.189	37	A61	Bones (Teeth)	Unidentified fragments		n/a		n/a	n/a			417.00g	
278	NM2008.189	1	A61	Skull J 15.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	10	
279	NM2008.189	1	A61	Skull J 15.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			33	
280	NM2008.189	1	A61	Skull J 15.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25			13	
281	NM2008.189	1	A61	Skull J 15.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			85.66/222.89g	
282	NM2008.189	1	A61	Skull J 15.3.52 E.W.H.	Mandible	Mental eminence and spine, and digastric fossa		7	n/a	0-25		small eminence		2
283	NM2008.189	1	A61	Skull J 15.3.52 E.W.H.	Skull	Frontal; Right supraorbital margin		13	n/a	0-25		Cribra Orbitalia, notch not foramen		2
284	NM2008.189	1	A61	Skull J 15.3.52 E.W.H.	Skull	Temporal; internal accoustic meatus		6	Left	0-25				
285	NM2008.189	1	A61	Skull J 15.3.52 E.W.H.	Skull	Juvenile; Temporal; Mastoid process	6or7,8		Unknown	0-25		very small, yet skull fragments very thick - can't sex		
286	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25		Sutures are open	18	
287	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25			37	
288	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25			15.87/109.33g	

289	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Skull	Temporal; internal accoustic meatus		6	Left	0-25				
290	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Skull	Temporal; internal accoustic meatus		7	Right	0-25				
291	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Vertebra	Unknown, body only (intact)		1	n/a	25-75				
292	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Vertebra	Unknown; Partial body only		1	n/a	0-25	osteophytic lipping 5mm			
293	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Vertebral fragments	Unknown fragments	n/a		n/a	n/a		9		
294	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Unidentified fragments	Zone size; 20-40mm	n/a		n/a	n/a		3		
295	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Skull	Maxilla; Li^1 - Lm^2		12	n/a	0-25	I1, I2 in situ just crowns still forming (I2 and M1? nearly erupting) - M1 crown missing		3 ± 1 yrs	SSB - 94
296	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Skull	Maxilla; Ri^2 - Rm^2		13	n/a	0-25	I2 in situ forming & cavity for forming I1 evident, doesn't clearly articulate with 295...		3 ± 1 yrs	SSB - 94
297	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Incisor	Forming crown still unerupted, in 2 articulating fragments		13	Right	25-75	Assumed missing I^1		3 ± 1 yrs	SSB - 94
298	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Tooth fragments	Adult forming crowns	n/a		n/a	n/a	One is a canine sith no root yet	3		
299	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Tooth fragments	Deciduous fragments	n/a		n/a	n/a		7		
300	NM2008.189	2	A61	Skull X 15.3.52 E.W.H.	Tooth fragments	Unidentifed fragments	n/a		n/a	n/a		5		
301	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	2		
302	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		22		
303	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25		3		
304	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		16.50/113.46g		
305	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Skull	Maxilla fragment	12or13		n/a	0-25				
306	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Skull	Temporal; internal accoustic meatus		7	Right	0-25				
307	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Skull	Occipital; left occipital condyle		5	n/a	0-25				
308	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Vertebra	Atlas (in two articulating fragments)	2,3		n/a	75-100	Matches with 307			
309	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Vertebra	Axis	1,2,3,4		n/a	100	Matches with 308			
310	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Mandible	Left condyle to sulcus	1,3,5,6		n/a	0-25	no alveolar present			
311	NM2008.189	3	A61	Skull Z 15.3.52 E.W.H.	Tooth fragment	Unidentified fragment	n/a		n/a	n/a		1		
312	NM2008.189	4	A61	Skull β 15.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	3		
313	NM2008.189	4	A61	Skull β 15.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		5		
314	NM2008.189	4	A61	Skull β 15.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		2.39/47.17g		
315	NM2008.189	4	A61	Skull β 15.3.52 E.W.H.	Mandible	Left gonial angle		6	n/a	0-25	defined muscle attachments			
316	NM2008.189	4	A61	Skull β 15.3.52 E.W.H.	Skull	Zygoma; left		10	Left	0-25	temporal and maxillary process broken off, but frontal still present, suture open			
317	NM2008.189	4	A61	Skull β 15.3.52 E.W.H.	Skull	Frontal; crest and partial left orbit	1,2		n/a	0-25	supraorbital notch, frontal sinuses and nasal process			4
318	NM2008.189	4	A61	Skull β 15.3.52 E.W.H.	Unidentified fragments	Zone size; 20-60mm	n/a		n/a	n/a	postcranial fragments	7		
319	NM2008.189	5	A61	Skull λ 15.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	6		
320	NM2008.189	5	A61	Skull λ 15.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		13		
321	NM2008.189	5	A61	Skull λ 15.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25		12		
322	NM2008.189	5	A61	Skull λ 15.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		14.48/189.67g		
323	NM2008.189	5	A61	Skull λ 15.3.52 E.W.H.	Skull	Occipital; nuchal and IOP (in 2 articulating fragments)		5	n/a	0-25	nuchal crest			3
324	NM2008.189	5	A61	Skull λ 15.3.52 E.W.H.	Skull	Temporal; EAM, IAM and mastoid (2 articulating fragments)		7	Right	0-25	Mastoid			3
325	NM2008.189	5	A61	Skull λ 15.3.52 E.W.H.	Skull	Unidentified fragment	n/a		n/a	0-25	osteophytic growth??			
326	NM2008.189	6	A61	Skull λ 15.3.52 E.W.H.	Skull	Incus	n/a		Unknown	0-25	Intact			
327	NM2008.189	6	A61	Skull λ 15.3.52 E.W.H.	Skull	Malleus	n/a		Unknown	0-25	Intact			
328	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	11		
329	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		22		
330	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25		4		
331	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		23.61/182.81g		
332	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull	Temporal; IAM, EAM and mastoid		7	Right	0-25	but juvenile looking			4
333	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull	Temporal; IAM, EAM and mastoid		6	Left	0-25	but juvenile looking			4
334	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull	Frontal; crest, nasal process	1,2		n/a	0-25	Partial metopic suture			
335	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull	Frontal; crest	1,2		n/a	0-25	may just be missing connecting fragment between it and 334			
336	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull	Frontal; Right supraorbital margin and zygomatic process		1	n/a	0-25	open suture			2
337	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull	Zygoma; left		10	Left	0-25				
338	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Skull fragments	Maxilla; alveolar with evidence of forming permanent teeth	12or13		Unknown	0-25		2		
339	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Mandible	Left mandibular condyle		5	n/a	0-25				
340	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Mandible	Lm_1 - LM_1		1	n/a	0-25	Forming crowns of LPM1 and LPM2 visible, LM1 erupted and cavity for forming adult C		6-8 ± 2 yrs	
341	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Maxilla	An unerupted premolar	12or13		n/a	0-25	premolar has partial root formed as well		8-9 ± 2 yrs	SSB - 95
342	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Molar	Forming M^2	12or13		Unknown	25-75	Crown only, no roots yet		5-7 ± 2 yrs	SSB - 94,95
343	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Molar	Forming M_2		1	Unknown	25-75	Crown only, no roots yet		5-7 ± 2 yrs	SSB - 94,95
344	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Premolar	Upper PM (PM^4?)	12or13		Unknown	25-75	Still forming? Root formation also begun			
345	NM2008.189	7	A61	Skull ε 15.3.52 E.W.H.	Teeth fragments	Unidentified fragments	n/a		n/a	n/a		35		
346	NM2008.189	8	A61	Skull ϑ 15.3.52 E.W.H.	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		7		
347	NM2008.189	8	A61	Skull ϑ 15.3.52 E.W.H.	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25		5		
348	NM2008.189	8	A61	Skull ϑ 15.3.52 E.W.H.	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		27.99/191.90g		
349	NM2008.189	8	A61	Skull ϑ 15.3.52 E.W.H.	Skull	Most of vault from occipital to coronal (in 8 articulating fragments)	3,4,5		n/a	25-75	Sutures are partially closed			
350	NM2008.189	8	A61	Skull ϑ 15.3.52 E.W.H.	Skull	Temporal; left external auditory meatus		6	Left	0-25				
351	NM2008.189	8	A61	Skull ϑ 15.3.52 E.W.H.	Skull	Temporal; internal accoustic meatus		7	Right	0-25				
352	NM2008.189	9	A61	Skull ϑ 15.3.52 E.W.H.	Skull	Incus	n/a		Unknown	0-25	Intact			
353	NM2008.189	10	A61	Skull S 13.3.52	Skull fragments	>20mm; With sutures present	n/a		n/a	0-25	Sutures are open	17		
354	NM2008.189	10	A61	Skull S 13.3.52	Skull fragments	Unidentified; >20mm	n/a		n/a	0-25		23		
355	NM2008.189	10	A61	Skull S 13.3.52	Skull fragments	>20mm; With meningeal lines present	n/a		n/a	0-25		2		
356	NM2008.189	10	A61	Skull S 13.3.52	Skull fragments	Unidentified; <20mm	n/a		n/a	0-25		27.95/387.13g		
357	NM2008.189	10	A61	Skull S 13.3.52	Rock		n/a		n/a	n/a		1		
358	NM2008.189	10	A61	Skull S 13.3.52	Skull	Frontal nasal process and left supraorbital margin	1,2		n/a	0-25	Partial metopic suture and notch			4
359	NM2008.189	10	A61	Skull S 13.3.52	Skull	Temporal; EAM, IAM and mastoid		6	Left	0-25				5
360	NM2008.189	10	A61	Skull S 13.3.52	Skull	Temporal; Mastoid process (in 2 articulating fragments		7	Right	0-25				5
361	NM2008.189	10	A61	Skull S 13.3.52	Skull	Temporal; IAM		7	Right	0-25				
362	NM2008.189	10	A61	Skull S 13.3.52	Skull	Temporal; zygomtic process		7	Right	0-25				
363	NM2008.189	10	A61	Skull S 13.3.52	Skull	Zygoma; left		10	Left	0-25				
364	NM2008.189	10	A61	Skull S 13.3.52	Skull	Occipital; partial nuchal region, transverse sulcus & internal crest		5	n/a	0-25				4
365	NM2008.189	10	A61	Skull S 13.3.52	Skull	Occipital; right occipital condyle		5	n/a	0-25				
366	NM2008.189	10	A61	Skull S 13.3.52	Skull	Occipital; left occipital condyle		5	n/a	0-25				
367	NM2008.189	10	A61	Skull S 13.3.52	Skull fragments	Unidentified fragments; 60-100mm	n/a		n/a	n/a	postmortem wear? ASK CALLAN	3		