# THE STERKFONTEIN WESTERN BRECCIAS: STRATIGRAPHY, FAUNA AND ARTEFACTS

By

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A thesis submitted to the Faculty of Science, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements for the degree of Doctor of Philosophy.

Johannesburg, 2009.

# Declaration

I declare that this thesis is my own unaided work. It is being submitted for the degree of Doctor of Philosophy in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.

________________________________________

(Signature of candidate)

________day of____________________2009

# Abstract

The Sterkfontein Caves are one of the dolomite cave systems located in Gauteng Province, South Africa. These caves are important to paleoanthropology because they have yielded a large number of fossils of early hominids, fauna, flora and some of the earliest stone tools in South Africa. The caves contain deposits classified as stratigraphic members within the Sterkfontein Formation. These members are named 1 to 6 in sequence of ascending order and age, and additional infills, the StW 53 Infill and the Post-Member 6 Infill, have also recently been identified. There are in addition deposits in three separate caverns: the Jacovec Cavern and the Name Chamber located underground, and the Lincoln Cave located adjacent to the main cave deposits. Member 1 is a thick sterile deposit lying on the floor of the Silberberg Grotto. Member 2 has produced the first and most complete *Australopithecus* hominid skull in direct association with its skeleton, together with other fossil faunal material, all of which are thought to comprise death trap assemblages. Member 2 is judged to be ca 3.3 mya by palaeomagnetic dating. Member 3 is the largest deposit in the Sterkfontein caves and shows localized concentrations of fossil bones on the exposed wall where lime miners have removed a massive stalagmite boss, but it remains unexcavated due to difficulties of access.

Member 4 is located in the eastern area of the open breccias exposed at the surface through weathering of the dolomite cave roof and is estimated to date to between 2.14 and 2.4 mya. Member 4 has also produced a large collection of *Australopithecus* and other fossil fauna but has no artefacts. The deposit was originally thought to have filled a large underground chamber and the northeastern part of Member 4 was originally named the Type Site by J.T. Robinson because it had yielded the type specimen of *Australopithecus transvaalensis* (TM1511), now classified as *A. africanus*. Member 5 was

previously thought to be a single large underground infill, but it has been sub-divided by Clarke and Kuman into the northern StW 53 Infill, an eastern Oldowan Infill, and Acheulean breccias in Member 5 West and East. This has been the revised stratigraphy to date.

This study is aimed at clarifying the stratigraphy and sequence of the younger archaeological breccias in the western area of the Sterkfontein deposits. The goal is to provide a more complete picture of the contents of these deposits. The westernmost breccias in the main excavation were thus further excavated to reveal a cleaner profile from which the sediments could be observed and to increase the sample sizes of materials from these deposits. Different Member 5 breccia types have now been identified in the western profile. This study argues that younger Member 4 deposits once filled the western area, and Member 5 deposits formed within the space left by collapsed areas of Member 4 breccia. It is likely that Member 4 deposits still exist in the far western parts of the surface excavation area, beyond the current profile exposed in the western face of Member 5. In other words, Member 4 breccia probably once filled the entire ancient chamber, and remnants of it still remain in portions of the western (Member 5) area, while cavities formed through collapse and solution of Member 4 were subsequently filled with Member 5.

The mid-Pleistocene Member 6 breccia was also excavated but did not produce artefacts or additional fauna. The previously excavated faunal assemblage was re-analysed for a more up-to-date taxa composition, adding taxa previously unidentified. It indicates that this deposit contains grassland environment fauna. The Member 6 and Post-Member 6 Infills together contain rich mid- to late-Pleistocene assemblages from diverse environments accumulated and modified by multiple agents. Artefacts from the Post-Member 6 Infill are of Middle Stone Age (MSA) period, but they lack MSA diagnostic pieces and include some early Acheulean core types that appear to derive from older, eroded Member 5 breccia. This assemblage, however, differs from the Sterkfontein early Acheulean in the higher proportion of small flaking debris, use of quartz as opposed to quartzite as the dominant stone tool making raw material, and the relatively fresher condition of artefacts.

*To my children for the sacrifices they made when I was away for studies.*

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I also wish to express my gratitude to the staff of the Palaeontology Department at the Northern Flagship Institution (Transvaal Museum), especially Dr. Francis Thackeray, Stephany Potze and Teresa Kearney for availing the Member 6 fauna for this study, and letting me use their zooarchaeology collection for skeletal element and taxa comparative purposes. Thanks to Miss Wendy Voorvelt for illustrating the artefact and drawing the western wall profile. Thanks go too to my parents, family and friends, without whose encouragement, support and endurance, none of this work could have been possible.

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# List of Abbreviations.

Table 1: Abbreviations of cranial and post-cranial skeletal elements

| **Element** | **Abbreviations** |
|---|---|
| Horncore | HORN |
| Cranial | CRAN |
| Occipital | OCC |
| Zygomatic Arch | ZYGM |
| Mastoid process | MAST |
| Temporal Bone | TEMP |
| Orbit | ORB |
| Os petrosum | OS PET |
| Maxilla | MAX |
| Pre-maxilla | PRE-MAX |
| Upper Lateral Incisor | $I^2$ |
| Upper Canine | UC |
| Upper Third Premolar | $P^3$ |
| Upper Fourth Premolar | $P^4$ |
| Upper First Molar | $M^1$ |
| Upper Second Molar | $M^2$ |
| Upper Third Molar | $M^3$ |
| Hemimandible | 1/2MAND |
| Lower Medial Incisor | $I_1$ |
| Lower Lateral Incisor | $I_2$ |
| Lower Canine | LC |
| Lower Fourth Premolar | $P_4$ |
| Lower Third Premolar | $P_3$ |
| Lower Second Premolar | $P_2$ |
| Lower First Premolar | P1 |
| Lower First Molar | $M_1$ |
| Lower Second Molar | $M_2$ |
| Lower Third Molar | $M_3$ |
| Upper premolar | UPm |
| Incisor | I |
| Premolar | PM |
| Upper molar | UM |
| Deciduous molar | dM |
| Indeterminate Lower First or Second Molar | M1/2 |
| Indeterminate Molar | M |
| Atlas | Atlas |
| Axis | Axis |
| Cervical Vertebra | CERV |
| Thoracic Vertebra | THOR |
| Lumbar Vertebra | LUMB |
| Sacrum | SACR |
| Caudal Vertebra | CAUD |
| Vertebra | VERT |
| Clavicle | CLAV |
| Rib | RIB |
| Sternum | STERN |

Table 2: Abbreviations of cranial and post-cranial skeletal elements continued

| **Element** | **Abbreviations** |
|---|---|
| Scapula | SCAP |
| Humerus | HUM |
| Ulna | ULNA |
| Radius | RAD |
| Radio-Ulna | RAD-ULNA |
| Carpal | CARP |
| Magnum | MAG |
| Scaphoid | SCAPH |
| Cuneiform | CUN |
| Lunate | LUN |
| Unciform | UNCI |
| Metacarpal | MTC |
| Proximal Phalanx | PHAL I |
| Intermediate Phalanx | PHAL II |
| Distal Phalanx | PHAL III |
| Sesamoid | SES |
| Innominate | 1/2PEL |
| Ischium | ISCH |
| Ilium | ILI |
| Pubis | PUB |
| Femur | FEM |
| Tibia | TIB |
| Fibula | FIB |
| Tarsal | TAR |
| Astragalus | ASTRAG |
| Calcaneum | CALC |
| External Cuneiform | EXCUN |
| Navicular Cuboid | NAVCUB |
| Metatarsal | MTT |
| Metapodial | MTP |
| Unidentified Bone Fragment | FRAG |
| Cuboid | CUB |
| Ulna Carpal | ULNACAP |
| Intermediate cuneiform | INT CUN |
| Long Bone Shaft | LBSF |
| Acetabulum | ACET |
| Lateral cuneiform | LAT CUN |
| Medial cuneiform | MED CUN |
| Coronoid process | CORO |
| Patella | PAT |
| Capitate | CAPT |
| Trapezoid | TRAP |
| Navicular | NAVCL |
| Internal cuneiform | INTR CUN |
| Pisiform | PISI |

Table 3: Artefact raw materials

| Raw Material | Abbreviations |
|---|---|
| Quartz | Q |
| Quartzite | QZE |
| Chert | C |
| Dolomite | D |
| Diabase | DIAB |
| Indeterminate Igneous | IG? |
| Mudstone | Mstone |
| Sandstone | Sstone |

Table 4: Artefact weathering condition

| Weathering condition | Abbreviations |
|---|---|
| Fresh | F |
| Slightly weathered | SW |
| Weathered | W |
| Very weathered | VW |

# Chapter 1

# Introduction

## 1.1 Background

The Sterkfontein Cave system is one of the dolomite cave systems in Gauteng Province, South Africa. This cave system is important for palaeoanthropological studies because it has preserved abundant early hominid fossils (Broom, 1936; Broom and Schepers, 1946; Broom *et al.*, 1950; Clarke, 1988, 1989, 1994, 1998, 1999; Clarke and Tobias, 1995), (Pickering and Moggi-Cecchi, 2004), Oldowan and Early Acheulean stone tools (Stiles and Partridge, 1979; Kuman, 1994a,b, 1996, 1998; Field, 1999), as well as environmental and ecological indicators in the form of fossil fauna and flora (Vrba, 1975, 1980; Stiles and Partridge, 1979; McKee, 1991; Bamford, 1999; Pickering, 1999). The cave is composed of a number of caverns that opened to the environment for sediment deposition at different times during the Pliocene and Pleistocene. Studies have shown that the caves were not occupied by hominids (*Australopithecus* or even *Homo*), but at times acted as traps for *Australopithecus* and animals living on the landscape (Pickering, 1999; Pickering *et al.*, 2004). The caves may also have acted as receptacles for organic and inorganic material from run-off, flooding and gravitation in their catchment areas or may have been used by carnivores for denning during later stages. However, the sheltered entrances to these caverns were perhaps later utilized as a refuge by early *Homo*, leading to the accumulation of the Oldowan and Acheulean stone tools, and shade trees growing at the cave entrances could also have been used by hominids (Kuman, 1994a,b, 1996, 1998; Pickering, 1999; Kuman and Clarke, 2000).

Stratigraphic studies of the deposits at Sterkfontein Caves have revealed distinct deposits with different sedimentological properties, fauna, artefacts and ages (Robinson, 1962; Partridge, 1978; Wilkinson, 1983, 1985; Partridge and Watt, 1991; Kuman, 1994b; Clarke, 1994, 2006), while others have been named infills within some of these members (Kuman and Clarke, 2000). The bulk of these deposits has been classified as Members 1-6 within the Sterkfontein Formation (Partridge, 1978). Members 1, 2 and 3 are the oldest deposits and are confined to an underground cavern beneath the main excavation in the Silberberg Grotto (Partridge, 1978; Tobias, 1979; Partridge and Watt, 1991) Partridge *et al.*1999, (Partridge, 2000; Kuman and Clarke, 2000; Clarke, 2006); see Figures 1.1 and 1.2. The subsequent deposits, Members 4, 5, and 6, also follow in age in that order, and are found in the exposed area of the site where the dolomite roof has weathered away (Partridge, 1978; Partridge and Watt, 1991; Partridge *et al.*, 1999; Partridge, 2000; Kuman and Clarke, 2000). A separate cavern, the Jacovec Cavern (see Figure 1.1), is located underground but is apparently unconnected to the six stratified members and contains *Australopithecus* fossils among other fossil faunal remains (Wilkinson, 1983, 1985; Partridge and Watt, 1991; Partridge *et al.*, 1999, 2000, 2003; Kibii, 2000, 2004), Partridge *et al.* (2000). Most recently, the StW 53 Infill, the Post-Member 6 Infill, the Lincoln Cave deposits (North and South) and the Name Chamber deposits have been identified (Reynolds, 1998; Kuman and Clarke, 2000; Reynolds *et al.*, 2003, 2007).

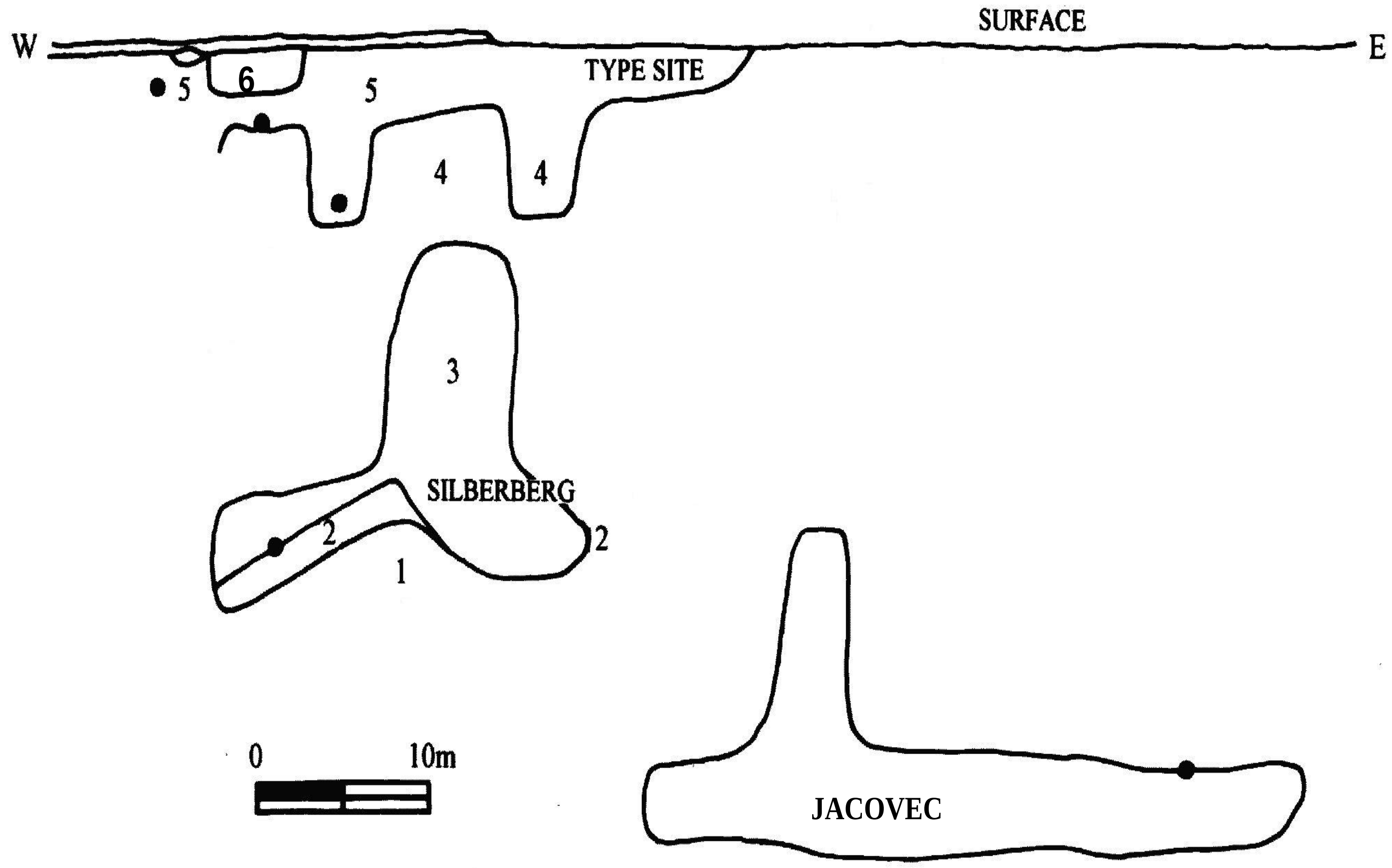


Figure 1.1: Stratigraphic profile of Sterkfontein caves. The numbers indicate the location of the various Members of the Sterkfontein Formation. The black dots are some of the hominid localities (courtesy of R. J. Clarke).

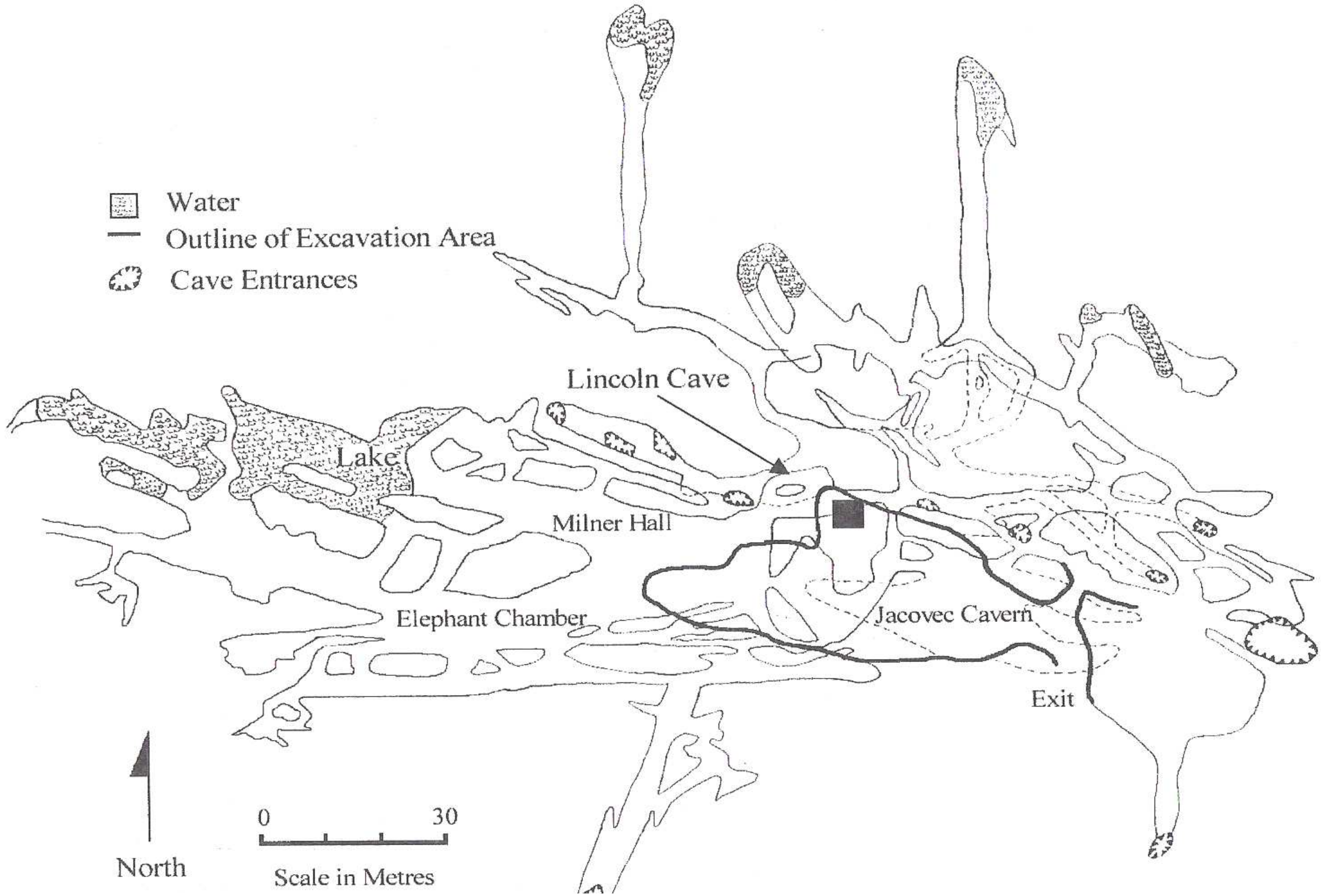


Figure 1.2: Sterkfontein Cave plan view showing the relationship of Lincoln Cave (shown by the arrow) and Post-Member 6 Infill (shown by the black square) from Reynolds *et al.* (2003)

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## 1.2 Research goals

The western extent of the Member 5 West early Acheulean deposit, the stratigraphy of the western area (Member 6 and Post-Member 6 Infill deposits), and the faunal and artefactual contents of the Member 6 and Post-Member 6 Infills have not been analysed in detail and thus have not been well understood. This study is aimed at clarifying the stratigraphy of the younger western breccias through excavations in the western profile and to establish the western extent of Member 5 West. Fauna and artefacts from new and previous excavations are analysed for a better understanding of the taxonomy, the taphonomy and the archaeology of the Member 6 and the Post-Member 6 Infill deposits.

## 1.3 Thesis outline

Sections 1.1 and 1.2 of this chapter have given the background and goals of this research, and the structure of this thesis is outlined in the rest of the chapter. Chapter two outlines the materials and discusses the methods used to achieve the research goals. The fauna from Member 6 and the Post-Member 6 Infill have been taxonomically identified and taphonomically analysed. Also outlined are the comparative samples consisting of skeletons of extant mammalian taxa and fossil extinct taxa where available, modified bones of known agents, experimental modifications and published descriptions and illustrations of modification marks that have aided these analyses.

Chapter three is devoted to the stratigraphy of the western breccias. During excavations at Sterkfontein Caves in the 1950s, Robinson (1962) identified the Lower Breccia (now Member 4) in the Type Site, the Middle Breccia (now Member 5), and the Upper Breccia (now Member 6) in the western part of the cave in what was then called the Extension Site. Different coloured, more calcified breccia blocks similar to those identified as Lower Breccia were observed in the Extension Site. This led Robinson to suggest that Member 4 may have completely filled the original cavern before collapse in the central area left a void in which the deposition of the subsequent deposits later occurred. Clarke (1994) and Kuman and Clarke (2000) have identified interfingering of portions of Member 4 and Member 5 in the western area, confirming Robinson's suggestion that Member 4 may have extended further west than previously thought (Figure 1.3). The deposition sequence suggested by Robinson and Clarke implies that additional components of Member 4 may still lie to the west of the surface excavation in the unexcavated area westward of Member 5 West. Excavations have therefore been conducted in the western area during the current study to establish the western extent of the Member 5 West, revealing part of Member 4 that still remains in the western end of the surface excavation. Stratigraphic details of Members 5 West were recorded before excavations, and Member 5 West and Member 6 stratigraphy was drawn during excavation, in an attempt to get accurate positions for these deposits to refine our understanding of the various deposits. The results of these excavations and the more up-to-date stratigraphic interpretation of the western profile and the stratigraphy of the western area are discussed in Chapter three.

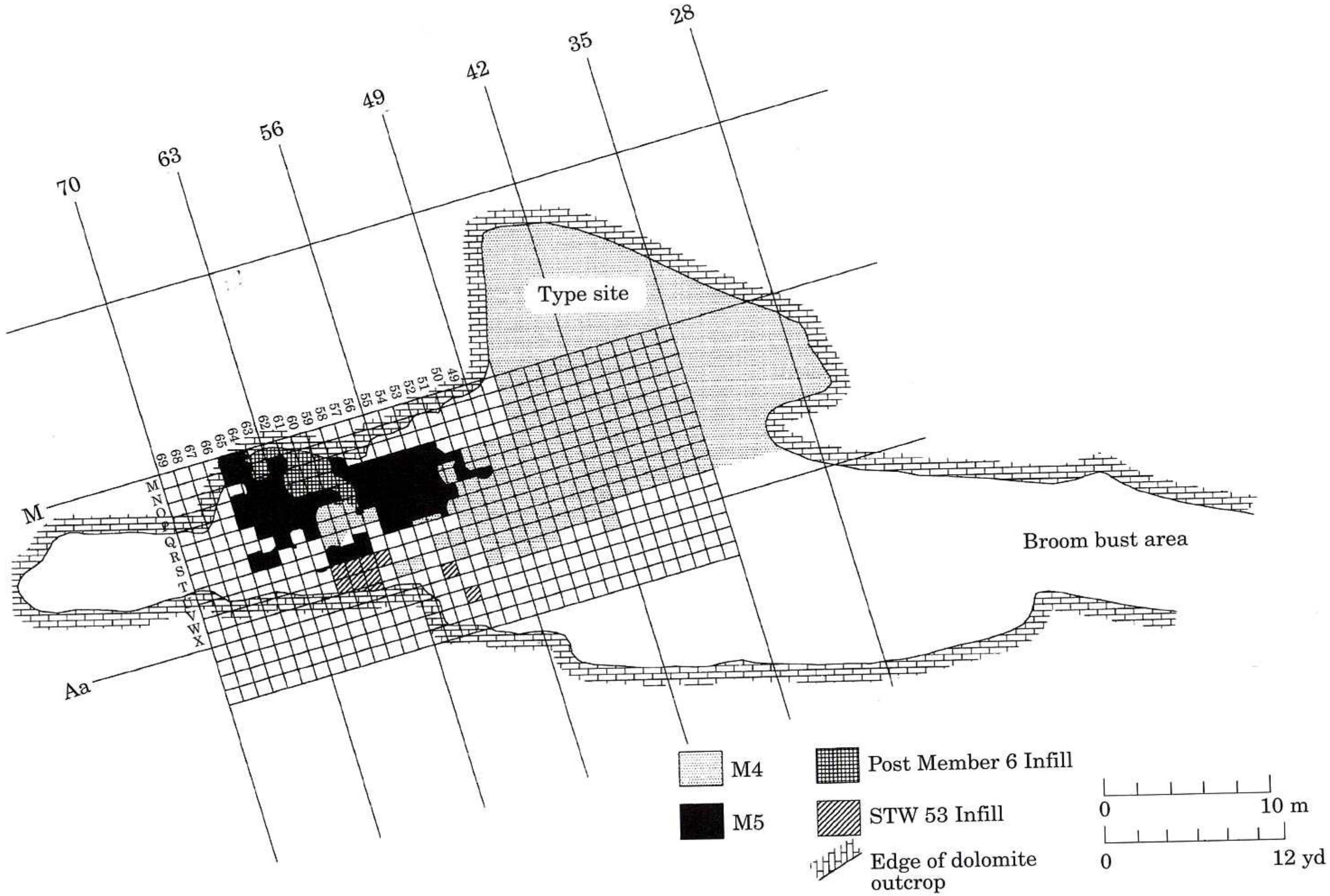


Figure 1.3: Sterkfontein Cave plan view showing the surface distribution of different breccia types in the Sterkfontein formation (from Kuman and Clarke 2000)

Chapter four presents the results and interpretation of the analysis of the fauna from Member 6. Member 6 breccia filled only a limited space between the dolomite roof and the underlying Member 5 breccia, prior to erosion of the northern area (Robinson, 1962; Partridge, 1978; Brain, 1981; Partridge and Watt, 1991; Clarke, 1994; Kuman and Clarke, 2000); see Figures 1.4, 1.2. It is now preserved as a small remnant of the original deposit overlying a flowstone capping Member 5 West. Robinson's excavation of Member 6 (his Upper Breccia) produced no stone tools apart from one manuport which was later stolen, and the faunal assemblage from the deposit was said to be too small to be informative (Brain, 1981). Apart from the above study by Brain of the Member 6 fauna, this deposit is not well understood due to its small faunal assemblage and the lack of stone tools from previous excavations (Robinson, 1962; Brain, 1981). Current excavations in the western area were expected to produce more Member 6 fauna and artefacts to expand the Member 6 faunal sample from which more conclusive interpretations on the contents and age estimates for the deposit could be based. However, no artefacts or more fauna were recovered from the new excavations of Member 6 breccia. Thus, fauna from previous excavations were systematically analysed for an up-to-date determination of taxa representation, modes of accumulation and the modification agents responsible for their current state, and for the clarification of the possible age estimate for the deposit.

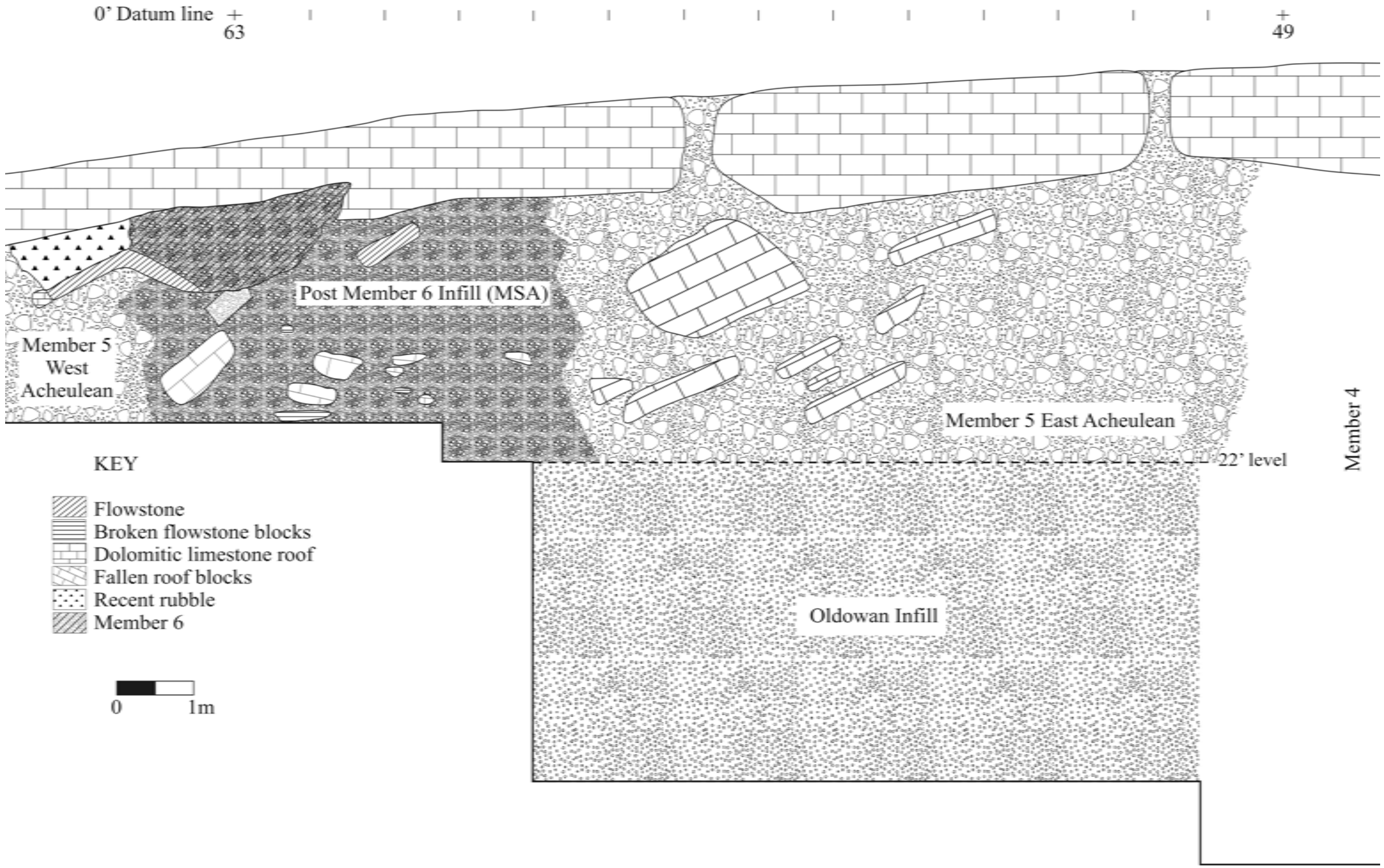


Figure 1.4: Sterkfontein Caves northern profile showing the position of the various members of the Sterkfontein formation identified in this profile (modified from Kuman and Clarke 2000).

Chapter five of this thesis outlines the results of the analysis of the entire faunal assemblage from the Post-Member 6 Infill, to provide the complete faunal taxa composition, modes of accumulation and modifications, as well as the interpretation of these aspects of the assemblage. The Post-Member 6 Infill occupies an erosion channel. This erosion has smoothed the undersurface of Member 6, leaving this portion of the older Member 6 breccia as a hanging remnant. It has also removed a large area which apparently once contained early Acheulean Member 5 breccia linking Member 5 West and Member 5 East. The early Acheulean in the area now filled with the Post-Member 6 Infill may have been decalcified and mixed with younger incoming sediments (Clarke, 1994; Kuman, 1994a,b, 1998; Kuman and Clarke, 2000; Reynolds, 2000). Excavations by Reynolds (1998, 2000) suggested possible extension of Post-Member 6 Infill sediments northwards into the adjacent Lincoln Cave through the excavated tunnel sediments in the northern profile. This suggestion is based on the similarity of faunal taxa and artefact composition from the area of square L63 in the main excavation with material in the Lincoln Cave breccia. The Lincoln Cave South sediments appear to be continuous with the Post-Member 6 Infill and have Middle Stone Age diagnostic artefacts. In a more northern breccia within the Lincoln Cave (Lincoln Cave North), a small deposit with a few early Acheulean tools eroded from Member 5 has been dated by Uranium Series on sandwiching flowstones to an age of between 252,600 $\pm$ 35 600 years and 116,300 $\pm$ 7 700 years, placing the deposit within the Middle Stone Age period of South Africa (Reynolds *et al.*, 2003). This implies that, despite its incorporation of Acheulean artefact contents, the Lincoln Cave North deposit accumulated during the Middle Stone Age period.

Similarities between the L63 and the Member 5 West assemblages indicate possible erosion or collapse of the older Member 5 West deposits and incorporation of some Acheulean artefacts and early *Homo* teeth into the younger Post-Member 6 Infill. Faunal species in the Member 5 West, Post-Member 6 Infill and the Lincoln Cave deposits indicate similar palaeo-environmental conditions during deposition. These deposits are, however, differentiated by their contents, e.g., hominid species and artefact assemblages (Kuman and Clarke, 2000). Only fauna from square L63 and artefacts from squares L63 and M63 in the Post-Member 6 Infill have been analysed (Reynolds, 2000), and the information we have from Reynolds' study is therefore incomplete. The current study, including the analysis of all previously excavated fauna and artefacts and those resulting from the current excavation of this deposit, thus gives a more complete interpretation of the assemblage.

Chapter six provides a detailed analysis of artefacts from the Post-Member 6 Infill. No diagnostic artefacts from the the area of the Post-Member 6 Infill (square L63) were found by Reynolds, but a high percentage of small flaking debris in the infill is indicative of the Middle Stone Age rather than the Acheulean at Sterkfontein Caves. The Acheulean artefacts in the Lincoln Cave North are also an indication of the erosion and inclusion of components of earlier breccias in the younger sediments during deposition, as no other entrance for such artefacts is apparent in the Lincoln Cave. The Member 5 West Acheulean artefact assemblage at Sterkfontein lacks small flaking debris, but it is rich in cores, manuports, large chunks and stone fragments. This reflects an unstable landscape affected by erosion and hence winnowing out of the small artefacts prior to cavern filling (Kuman, 1994b; Field, 1999; Reynolds, 2000). Also, the early Acheulean artefacts are generally more weathered than the preceding Oldowan and the succeeding MSA assemblages. In contrast, the L63 area in the Post-Member 6 Infill appears to have more contents in common with the Lincoln Cave South breccia, which has Middle Stone Age diagnostic artefacts (Reynolds, 2000). Technological and typological analyses have been conducted on the artefact assemblage to determine the industrial affinities, and hence the chronological position, and to decipher the behavioural traits of the hominids responsible for their manufacture. Site formation processes leading to the accumulation of the artefact assemblage have also been analysed.

Chapter seven provides the discussion and conclusions of this thesis. The study provides an up-to-date analysis of Member 6 fauna and a complete analysis of the Post-Member 6 Infill fauna and artefact samples from which informed interpretations of the assemblages can be made. A more up-to-date interpretation of the western area stratigraphy from the current study also provides information on the western extent of the Member 5 West and Member 4 breccias in the western reaches of the surface excavated area.

# Chapter 2

# Materials and Methods

## 2.1 Introduction

This chapter introduces the materials and explains the methods used in this study to achieve the goals outlined in Chapter One. The body of data available for this study (the materials) is described and the methods used in their analysis is explained in detail.

## 2.2 Materials

This study utilises the fossil faunal assemblage from Sterkfontein Member 6 and the Post-Member 6 Infill and the artefacts from the Post-Member 6 Infill to address the aims of this study put forward in Chapter One. Modern comparative samples of animal bones in the collections of the University of the Witwatersrand and the Transvaal Museum (Northern Flagship Institution) were used for faunal taxonomic and taphonomic identification.

### 2.2.1 Post-Member 6 Infill fossil fauna

The Post-Member 6 Infill assemblage consists of fossil material excavated in the 1960s by J. T. Robinson in the 1970s and 1980s by Alun Hughes, and those excavated by R. J. Clarke's team from 1991 onwards, all of which are curated at the University of the Witwatersrand. New excavations were conducted during the course of this study and produced additional fossil fauna. The material for this sample derive from 35 squares (each measuring 3'x 3'x 1'), and including the 25 grid squares filling the erosion channel between Member 5 East and West, as well as material from the 6' wide by 15' long excavated tunnel, thought to link Sterkfontein main excavation with the adjacent Lincoln Cave (Appendix A.1 and Appendix A.2). A single square (L63) of fauna (5,584 specimens) from the Post-Member 6 Infill has previously been analysed by Reynolds (2000) for comparison with materials from Lincoln Cave. In total, 14, 025 faunal specimens from the rest of the excavated Post-Member 6 Infill squares have been analysed during this study.

### 2.2.2 Member 6 fossil fauna

Member 6 fauna consists of the fossils excavated in the 1960s by J. T. Robinson analysed by Brain (1981) and curated at the Transvaal Museum. In addition, some specimens from the Extension Site not initially analysed by Brain, but which were considered to derive from Member 6 based on the catalogue number prefix (SE), texture and colour of the adhering breccia matrix, were included in this sample (identified with the help of Stephany Potze, Department of Palaeontology, NFI). Further excavations conducted during this study did not produced more fossil fauna or artefacts. A total of 466 specimens is now available for study as opposed to the 454 studied by Brain. Microfauna, also present in this assemblage, is not analysed, while some of the materials listed by Brain (1981) as belonging to Member 6 were also not found during the sorting of Member 6 faunal material for this study at the Northern Flagship Institution (see Appendix B.1).

### 2.2.3 Lithic artefacts

Apart from the single foreign stone (i.e., manuport) seen in the Member 6 deposit during earlier excavation by J. T. Robinson [which was stolen before extraction (Robinson, 1962)], no other artefacts have been recovered from the

Member 6 deposit. A small sample of artefacts was, however, recovered during earlier excavations of the Post-Member 6 Infill from the 1960s to the 1990s. Fifty artefacts from two squares have previously been analysed by Reynolds (2000) and compared with the Lincoln Cave artefacts. More recently, over 400 artefacts have been recovered from the younger infill between Member 5 East and West and the excavated area that tunnels underneath the northern profile, increasing the sample size of the relatively small assemblage of artefacts available for analysis from the Post-Member 6 Infill to 608 artefacts. The Post-Member 6 Infill lithic material derives from the squares infilling the solution cavity between Member 5 East and West, as well as from the 6' wide by 15' long excavated tunnel, thought to link Sterkfontein Caves and the adjacent Lincoln cave (see Appendices A.3 and A.4).

### 2.2.4 Comparative samples

Skeletal remains of extant African mammals, and descriptions of extinct mammals where necessary, have been used as comparative samples in the identification of fossil bones for this study. Extant mammals' skeletons used for this study are housed at the Transvaal Museum, the University of the Witwatersrand Bernard Price Institute for Palaeontology, and the School of Anatomical Sciences at the University of the Witwatersrand. Bone samples modified by known agents and published descriptions of modifications have been used in the identification of modifications on fossils from Sterkfontein Caves, e.g., a porcupine-gnawed bone assemblage from Nossob collected by Brain (1967) was used.

## 2.3 Methods

### 2.3.1 Stratigraphic study

One of the major aims of this study was to clarify the stratigraphic details of the western breccias of the Sterkfontein deposits. To this extent, excavations were conducted to expose more breccia to the far west of the site. Under the directorship of my supervisor (Professor Ron Clarke), a excavation crew of University staff stationed at the site excavated the western area of the site. We took Electronic Distance Measuring (EDM) points on the western wall of the site prior to excavations to assist with detailed stratigraphic drawing of the profile in this area. These excavations revealed fresh breccia surfaces on which observations on currently exposed breccia have been made, e.g., differences in sediment colour, texture, stone tool and faunal contents. Contacts between adjacent breccias were identified and recorded to determine the conformability of sediment interfaces. Interpretation of the stratigraphic profile was achieved based on these observations with the help of, and in consultative discussions with Professor Clarke.

### 2.3.2 Artefact analysis

Typological and technological analyses were conducted for the Post-Member 6 Infill artefacts to establish the stone tool typologies and technology, as well as to establish which artefact industry is represented. This has aided interpretation of the chronology of the site, as well as the site formation processes leading to artefact accumulations. Typological studies were conducted using the classification methods applied by Kuman (1994a, 1996, 1998); Kuman *et al.* (1997) and Field (1999) for other assemblages at the site and at other sites in the Sterkfontein valley. Other attributes such as abrasion, weathering, artefact size distribution and post-depositional breakage, all relating to site formation processes, were recorded and examined according to published guidelines following Schick (1987); Kuman (1994a,b). Artefact analysis in this assemblage involved sorting, classification of types, and distributional analysis of sizes, technology, and raw material.

Various researchers have devised classification schemes for different stone tool industries. Leakey (1971) established a typology for the Oldowan, Developed Oldowan and early Acheulean industries in East Africa with materials from Olduvai Gorge Bed I and II. This typology is generally accepted and widely used as the classification scheme of choice by other researchers, including those working in South Africa, for some of the early cultural periods such as those in the Sterkfontein valley, where Oldowan and Early Acheulean tool assemblages have been excavated and studied (Mason, 1957, 1962a,b; Kuman, 1994a,b, 1996, 1998).

The Middle Stone Age (MSA) has, however, been classified differently as it is characterised by flake and blade tools, e.g., denticulates, points and scrapers, and lacks Early Stone Age (ESA) core tools (Thackeray A., 1992).The Middle Stone Age was first classified as an industrial tradition, with variations described, such as Pietersburg, Mossel Bay, Hagenstad, Saw Mill, Alexandersfontein and Howiesons Poort (Goodwin and Van Riet Lowe, 1929; Goodwin, 1930; Mason, 1957, 1962a; Thackeray A., 1992).A scheme was later developed for the long sequence at Klasies River Mouth as a five stage sequence termed MSA I to IV, with a Howieson's Poort stage between the third and the fourth stages (Singer and Wymer, 1982). A similar scheme was used by Sampson (1972) for the southern Cape MSA assemblages, but with pre- and post- Howiesons Poort stages sandwiching the Howiesons Poort. These classifications have been modified by Volman (1981, 1984) into another more comprehensive MSA scheme: the MSA 1, MSA 2a, MSA 2b, Howiesons Poort and MSA 3. This later classification is now widely used and has been modified and applied for various MSA sites in South Africa, e.g., the study of the Florisbad MSA assemblages by Kuman (1989); Kuman *et al.* (1999) and by Wurz (2002).

Middle Stone Age sites in the Cape and the former Transvaal seem to vary in age and stone tool raw material and tool types, making their typology and technology vary considerably. Sites with sequences including the early MSA are limited and have been reported and described by Volman (1981, 1984). The earliest MSA 1 assemblages of South Africa have small broad flakes with facetted butts, cores for production of flakes with intersecting dorsal scars, where there is little formal retouch, rare retouched scrapers and no retouched points. This earliest MSA (MSA 1) is placed in Oxygen Isotope Stage (OIS) 6. It has been identified at sites such as Duinefontein 2, Peers Cave, Elands Bay Cave and possibly at Bushman Rockshelter (Volman, 1981, 1984). A later phase of MSA 1 in the Transvaal at Cave of Hearths was initially called Lower Pietersburg by Mason (1957), but later put in the MSA 2a by Volman (1984).

The MSA 2 is the next MSA in age and has been divided into two: MSA 2a (OIS 5c-6), and MSA 2b (OIS) 5e-5c. The MSA 2 has been identified at Klasies River Mouth as MSA I and II (for MSA 2a and MSA 2b respectively) by Singer and Wymer (1982), Klasies River Mouth and Mossel Bay (for MSA 2a and MSA 2b respectively) by Wurz (2002), and at Border Cave, Cave of Hearths Beds 4-9, Mwulu 1-2 and Apollo 11 Cave among others by Volman (1984). The MSA 2 has relatively large, narrow flakes and flake-blades which are larger than those of MSA 1. Formal retouch, denticulates and scrapers are more common and unifacial and bifacial points begin to appear. The occurrence of points and retouch increases from MSA 2a to MSA 2b, with denticulates being more common in MSA 2a, but absent or less common in MSA 2b. The frequency of sidescrapers increase compared to endscrapers from 2a to 2b. MSA 2b also has occasional small backed or truncated pieces.

The Howieson's Poort is estimated to date to OIS 5b-5a (*Ca.* 60,000-75,000 kya) and is identified at Howieson's Poort Rockshelter, Klasies River Mouth, Cave of Hearths Bed 9, Rose Cottage Cave, Border Cave, Mwulu 3 and Klipfonteinrand among others. The Howieson's Poort is characterised by numerous trapezoids, backed and truncated pieces, and by relatively small broader flakes with facetted butts made on fine grained and cryptocrystalline rocks as opposed to those used in earlier stages of MSA (Volman, 1984). The MSA 3 has been called MSA IV (Singer and Wymer, 1982) and Post Howieson's Poort (Wurz, 2002) at Klasies River Mouth. The MSA 3 has flake blades similar to those of the MSA 2, with unifacial points and laterally retouched blades more common.

To enable comparison of this artefact assemblage with others in the Sterkfontein valley and elsewhere in South Africa, classification of the artefacts in this assemblage followed that of MSA sites in South Africa, e.g., (Sampson, 1972; Volman, 1981, 1984; Singer and Wymer, 1982; Mason, 1988; Wurz, 2002), but also incorporated types used for the other assemblages in the valley (Kuman, 1994a,b, 1996, 1998; Kuman *et al.*, 1997; Field, 1999; Reynolds, 2000). The resulting typological classification is discussed below.

### 2.3.3 Typological classification

**Flakes**

Flakes and flake portions have been divided into three more specific categories in this assemblage.

*Complete flakes*

Complete flakes include pieces ≥20mm struck from cores. They have complete striking platforms, bulbs of percussion, as well as tapered, stepped or hinged terminations. Maximum lengths of flakes for this sample are taken in this study because the complete flakes' sample was too small for a complete technological analysis.

*Incomplete flakes*

These are broken flakes ≥20mm which may exhibit a bulb of percussion and/or tapered, stepped or hinged terminations. Incomplete flakes include split flakes, and proximal, lateral, medial or distal portions of flakes, but these further divisions of incomplete flakes were not used in this study because of the small sample size for incomplete flakes.

*Core trimming flakes*

These are complete flakes that have a triangular cross-section formed by dorsal scars that create a ridge, indicating previous platform working or removal of an angular portion of a core (Singer and Wymer, 1982; Field, 1999). Their purpose seems to be only for preparation of core striking platforms or core shaping, as they are neither retouched nor have signs of use wear.

### Cores

Cores are the remains of the original piece from which flakes have been detached and have negative flake scars on their surfaces. Cores in this assemblage have been classified as bipolar, freehand percussion flaked, or a combination of both. Leakey (1971) has classified freehand percussion-flaked cores by their shape and the worked edges, but with an emphasis on their use as tools. In studying the cores of the Sterkfontein early Acheulean and Oldowan, Field (1999) adopted and modified the types developed by Leakey and classified cores by shape, number and positions of flake scars, but without the emphasis on their assumed function, thereby referring to them as cores instead of core tools. The types used by Field have been adopted for use here where necessary, but with an emphasis on shape and flaking technique as done by Volman (1981) and Singer and Wymer (1982) in the study of the MSA of the southern Cape. Core types have been classified to include the core types below.

*Casual cores*

Casual cores have one or two flake removals. Although some pieces may have opportunistic removals such as those resulting form breakage during their use as hammerstones, casual core removals are considered to be intentional removals, either for testing of raw material quality or for flake tool production.

*Single platform cores*

These have also been referred to as edge cores by Field (1999) and have a set of contiguous removals off one platform, either a naturally flat edge or an edge made by flaking or splitting of the blank.

*Chopper cores*

These are pieces that are unifacially or bifacially flaked along one edge of a cobble. Occasionally, an opportunistic removal is made from another side of the core.

*Discoidal cores*

Discoidal cores are also known as radial cores and are bifacially flaked pieces with removals along all or most of the manuport circumference. Flaking takes place on two platforms creating a disc-like or bi-conical shape.

*Polyhedral cores*

These are cores that have been flaked on three or more separate platforms and have been flaked over most or all of the surface of the piece in a seemingly random pattern. Pieces with partial flaking are referred to as irregular polyhedral cores (Kuman, 1998; Field, 1999). Polyhedral cores have also been referred to as irregular cores by scientists working with MSA assemblages (Singer and Wymer, 1982).

*Cores on flakes*

These are flakes that have been subsequently knapped. This kind of knapping occurs on medium-to-large-sized flakes with manageable handling capability for knapping. The aim of such knapping may be flake removal or shaping of the initial flake, as in unfinished pieces possibly intended to produce Acheulean handaxes and cleavers, as at Olduvai Gorge (Leakey, 1971) and Sterkfontein (Kuman, 1994b; Field, 1999).

*Core fragments*

These are pieces $\geq$ 20mm which break off cores during the knapping process. They differ from chunks by the occurrence of occurrence clear evidence of knapping in the form of flake scars on one or more sides and a clear surface of breakage from the original core that has no evidence of flake scars.

*Bipolar cores and core remains*

Bipolar cores often with two opposing impact points, indicating that they have been knapped between a hammerstone and an anvil. Bipolar core remains are fragments of bipolar cores with some of the characteristics of bipolar cores. Bipolar cores and core remains have flat flake scars, unlike freehand flaked cores which have concave negative flake scars indicating negative bulbs of percussions. They may exhibit a flat profile or sometimes a spalled profile, plus crushing or splintering at the platforms.

### Small Flaking Debris

Small flaking debris includes all pieces <20mm in maximum dimension (Leakey, 1971; Kuman, 1994a,b; Field, 1999). While most have characteristics of other types classified in this assemblage such as complete flakes, incomplete flakes or chunks, they are grouped in this category due to their small dimensions.

### Chunks

Chunks are angular or blocky pieces $\geq$ 20mm in maximum length. They include pieces produced during knapping by the shattering of a core or flake, but exclude core fragments, which have clear flake scars and a surface of breakage from the main core (Kuman, 1998; Field, 1999).

### Manuports

These include natural cobbles or pebbles transported to site by hominids but which have not have been knapped or utilised. Manuports occur in raw material suitable for knapping when compared with cores in the Sterkfontein assemblages. Such pieces could also have been transported for use as missiles (Leakey, 1971).

### Hammerstones

These are cobbles or pebbles with pitting or battering indicating use as hammers to knock off flakes from other stones (cores) during knapping. They may also have one or more flake removals that result during accidental breakage of the stone during use (Leakey, 1971; Kuman, 1994b; Field, 1999).

### Formal tools

*Retouched pieces*

These are complete flakes, incomplete flakes, chunks, cores, core fragments and any other pieces that have flakes removed from one or more edges for the purpose of shaping, sharpening, or modifying the edges for use as tools.

They include bi-facially and unifacially retouched pieces, points, denticulates, denticulated scrapers and scrapers.

*Miscellaneous retouched pieces*

These are pieces (chunks, flakes, incomplete flakes, chips and core fragments) that have minor and/or inconsistent retouch along one or more edges for shaping or modifying the edge for use as a tool (Leakey, 1971; Kuman, 1989, 1994b; Field, 1999).

### 2.3.4 Condition

The condition of artefacts in this assemblage, like that of bone, is an indicator of the time period between tool manufacture and deposition, as well as the depositional process (the mode, distance and duration of transport of artefacts to the site). Tools transported on the surface, exposed to the elements for longer periods, or abraded in decalcified and redeposited deposits are more likely to be 'weathered'. However, weathering in place versus abrasion caused by transport or sediment compaction varies according to each raw material type. In other words, abrasion can act on pieces, dulling them and thus giving them a weathered appearance. For example, quartz is highly resistant to weathering and requires some abrasion to appear weathered. Weathering condition is an indicator not just of the time period between tool manufacture and deposition or burial, but it also reflects those elements (sunlight, moisture and temperature fluctuations) that cause weathering. Weathering in this assemblage is classified as fresh, slightly weathered, weathered, or very weathered to conform with data recorded by Field (1999).

### 2.3.5 Raw materials

The stone tools in Sterkfontein artefact assemblages are made in quartz, quartzite, chert, sandstone, diabase, an unidentified igneous rock and dolomite. Some of these materials derive from within the cave system, such as dolomite and some chert. Dolomite is the parent cave rock, and chert occurs as bands within the dolomite. Both are therefore found at the site and on the surrounding landscape of the cave in the form of polyhedral, angular and flattish rocks. Chert is, however, also available as cobbles and pebbles in the river gravels (Kuman, 1996). Quartz may be collected from the landscape around the cave or as cobbles or pebbles in the river gravels. Quartzite and igneous rocks all derive from the river gravels below the cave (Kuman, 1996). These are then split prior to knapping or knapped in their original form (Kuman, 1996).

### 2.3.6 Faunal analysis

The faunal assemblages for this study (Member 6 and the Post-Member 6 Infill) were examined to identify specimens, and data were recorded to describe bone fragment, element portion, side and age where possible, as well as taxa identification. Bone surfaces were examined for modifications that suggest their modes and agents of accumulation, as well as the processes that have acted to modify individual bones and/or the entire assemblages before, during and after deposition in the cave's sediments.

#### Bone fragment, element and taxa identification

Element and taxa identification was conducted using the comparative collections listed above. Identification of non-bovid and bovid mammals to genus or species was based on cranio-dental remains. These were designated to order, family, subfamily, genus and species where possible. In addition, non-bovid taxa were identified to at least family level using post-cranial material with diagnostic features that distinguish between the different taxa where possible. Attempts were made to identify bovid cranial remains to below family level using distinct features observed on the teeth. Bovid post-cranial material was identified to Size Class following Brain (1974, 1981), and these include:
Size Class I, 0-23kg: upper limit represented by a large female duiker.
Size Class II, 23-84kg: upper limit, large male blesbok.
Size Class III, 84-296kg: upper limit, large wildebeest or roan antelope.

Size Class IV, more than 296kg: very large animals such as eland or buffalo.

### Identification of bone modification

In studying the taphonomic history of these assemblages, I examined bone surfaces for modifications that occurred after the death of the animals, either before, during or after deposition, and both prior to and after fossilisation. Bone surfaces were examined under X10 magnification and a low incident light and modification marks were recorded, including: carnivore gnawing marks, stomach acid etching, porcupine gnawing, small rodent gnawing, stone tool marks, weathering, trampling, abrasion, insect, geological, and excavation and preparation modification.

*Mammalian gnawing*

The frequency of carnivore-induced modification marks varies between the non-bone-gnawing and the bone-gnawing carnivores. For instance, bone collections accumulated by different hyaena species have been documented to be between 38% and 100% tooth marked (Skinner *et al.*, 1986; Bunn, 1983a,b; Lam, 1992; Maguire *et al.*, 1980). Fewer modifications are found on bones of carcasses consumed by large cats (cheetah, leopard and lion) that do not ordinarily crunch bones (Richardson, 1980; Lyman, 1994). The presence of carnivore modification marks in combinations, and patterns consistent with those from carnivore feeding and denning sites have been used to identify the agent(s) that have acted to accumulate and modify the assemblage. Various forms of modification marks have been observed and are known to be inflicted by carnivore teeth on bone during carcass defleshing, bone gnawing and crushing for marrow extraction. These marks include:

*Score marks* are short parallel U-shaped grooves with smooth bases occurring transverse to the bone's long axis. These marks result from dragging of teeth across the surface of bone and are normally found on the ends of long bones (Maguire *et al.*, 1980; Binford, 1981; Shipman, 1981; Lyman, 1994; Pickering and Wallis, 1997).

*Tooth punctures*, also referred to as punctate depressions, are tapering, deep pits on bone surfaces caused by collapse of bone under the pressure of teeth cusps with flakes of bone from the puncture visible in the pit (Maguire *et al.*, 1980; Binford, 1981; Shipman, 1981; Johnson, 1985; Lyman, 1994).

*Notches* are crescent-shaped fracture scars produced when the strength of a bite is sufficient to split the bone producing a fracture line through the punctate perforation (Binford, 1981; Blumenschine, 1986; Blumenschine and Selvaggio, 1988, 1991; Blumenschine *et al.*, 1996; Lyman, 1994; Maguire *et al.*, 1980). Such crescents are produced on hard compact long bone shafts. Puncturing also produces bone flakes (similar to stone flakes with striking platforms, impact scars, bulb of percussion and tapering edges) when pieces of bone detach from notches.

*Pitting* occurs on dense bone when it withstands the pressure of teeth without being punctured as in the case of punctate depressions (Binford, 1981; Lyman, 1994; Maguire *et al.*, 1980).

*Crenulated edges* are also known as ragged chewing, and occur on the ends of thick bones such as limb bones and on thin bone, when teeth penetrate and remove part of the edge of the bone, biting it away during puncturing (Binford, 1981; Maguire *et al.*, 1980; Lyman, 1994; Pickering and Wallis, 1997; Pickering, 1999).

*Scooping or hollowing out* results from extreme furrowing on cancellous bone leading to the removal of significant portions of bone tissue in these areas. This produces large irregular holes on long bone ends (Binford, 1981; Haynes, 1983; Lyman, 1994; Maguire *et al.*, 1980) and tubular bone shafts when all limb bone ends are chewed away, leaving only the bone shaft.

*Channeled bone* is produce by puncturing the bone backwards from one end, leaving a channel running parallel to the long axis of the bone (Binford, 1981).

*Chipping back* results from chewing the edge of broken long bone, causing chipping and scoring of the outer surface of the bone, with licking resulting in rounding and polishing of edges (Binford, 1981; Haynes, 1983; Lyman, 1994).

*Stomach acid etching*

This kind of etching is observed on regurgitated bone and results from passing of bone along the digestive track of hyaenas and other small carnivores whose stomachs contain digestive acids capable of extracting bone nutrients (Lyman, 1994).

Even though the modification marks discussed above are known to be produced by carnivores, other mammals such as ungulates, humans and chimpanzees gnaw bone and may leave modifications on bones similar to those left by carnivores, e.g., peeling, pitting and crenulated edges (Maguire *et al.*, 1980; Brain, 1981; Pickering and Wallis, 1997). These marks are, therefore, best studied in combination with other more diagnostic modification marks, such as tooth punctures and notches, in order to characterise them as carnivore or other mammalian gnawing marks with certainty.

*Porcupine and small rodent gnawing*

Porcupine gnaw marks appear as shallow broad marks with double parallel chisel-like marks from porcupine incisors. Small rodent gnawing leaves U-shaped scratches which are smaller than carnivore tooth scores. Porcupines and small rodents gnaw on bone probably to keep in check the growth of their incisors that continue to grow throughout their life (Maguire *et al.*, 1980; Lyman, 1994). They thus accumulate various hard materials, including bones, in their dens for this purpose, but they also gnaw on material already accumulated by other agents. For example, bones known to have been accumulated by carnivores in dens have been observed to bear evidence of porcupine gnawing. Occasionally, porcupines also bring in some bones with them into these dens. Rodents also gnaw on already accumulated bones and other materials for their nutritive needs (Maguire *et al.*, 1980). Evidence for both porcupines and small rodent gnawing of bones and other objects such as wood and stone have been observed on materials accumulated at fossil sites.

*Stone tool modification*

Evidence for stone tool-use in animal carcass processing occurs as cutmarks, hammerstone percussion marks, chop marks and scrape marks.

*Cutmarks* are the V-shaped elongate marks with multiple fine parallel striae within their walls (Binford, 1981; Bunn, 1981; Lyman, 1994; Potts and Shipman, 1981; Shipman, 1981; Shipman and Rose, 1984). Cutmarks result from skinning, disarticulation and filleting (Binford, 1981, 1984a; Lyman, 1994) of carcasses and can be related to each of the functions (scraping, chopping, cutting), depending on the locations of the marks on a skeletal element (Binford, 1981; Lyman, 1994).

*Scrape marks* are multiple faint cutmark-like striations resulting from the corresponding scraping action aimed at detaching small amounts of meat from bones (Binford, 1984a).

*Chopmarks* are deep, thick, irregular grooves on bones resulting from chopping actions meant to detach large muscle groups and ligaments and to break bones for marrow extraction (Binford, 1981, 1984a; Blumenschine, 1986; Bunn, 1981; Potts and Shipman, 1981).

Cutmark-mimicking by other processes such as trampling or carnivore gnawing marks has been identified (Behrensmeyer *et al.*, 1986, 1989; Fiorillo, 1989), necessitating the use of sophisticated methods such as Scanning Electron Microscope (SEM) in the differentiation of attributes or their occurrence in combinations in identifying them. Cutmarks can be distinguished from other marks by the regularity in location, fine parallel striae within their walls, barbs at their ends, and their V-shaped profiles (Binford, 1981, 1985; Binford *et al.*, 1988; Blumenschine, 1995; Bunn, 1981, 1986, 1991; Bunn and Kroll, 1986; White, 1992; White and Toth, 1989). These are distinguishable from the randomly occurring striations caused by trampling, rockfall and carnivore teeth modification (Brain, 1981; Potts and Shipman, 1981).

*Hammerstone percussion marks* are pits resulting from the smashing of bone shafts with hammerstones to crack them open for marrow. Hammerstone percussion marks have been identified and authenticated using various characteristics (Binford, 1981, 1984a; Blumenschine, 1988; Blumenschine and Selvaggio, 1988, 1991; Blumenschine *et al.*, 1996; Bunn, 1981; Potts and Shipman, 1981).

The observed assemblages contain bone specimens with stone tool processing marks, including cutmarks, hammerstone percussion marks and notches, scrape and chop marks (singly or in combinations). The relative frequencies of processing marks expected in modern human accumulated assemblages vary from site to site, but they are generally low, at around 5% (Bunn and Kroll, 1986). Simulated hominid-modified assemblages have been used to infer what is expected in hominid-accumulated bone assemblages (Binford *et al.*, 1988; Blumenschine, 1988, 1995). Modern hunter-gatherer-produced bone assemblages have also been studied with the objective of inferring the probable nature of hominid-modified and hominid-accumulated assemblages (Bunn, 1983a,b; Bunn and Kroll, 1986; Bunn *et al.*, 1988). However, archaeological assemblages differ from modern faunal assemblages because of the long taphonomic histories and the post-depositional factors that have affected the archaeological assemblages, but not the simulated modern and hunter-gatherer assemblages.

*Weathering*

Weathering occurs in the form of deterioration of the bone surface due to loss of moisture and elasticity resulting from exposure to sunshine, and to fluctuating temperature and moisture regimes. Effects of weathering have been recorded in stages established by Behrensmeyer (1978).

*Stage 0* - includes fresh bone with no signs of cracking, still bearing soft tissue, marrow and skin. This kind of weathering modification was not recorded in this assemblage.

*Stage 1* - Bone showing cracking parallel to the fibre structure of the bone, with articular surfaces showing sign of cracking of the covering tissue and the bone.

*Stage 2* - flaking of thin concentric layer of outermost bone, associated with cracks, with bone edges peeling away first.

*Stage 3* - patches of rough, homogeneously weathered compact bone, with fibrous texture.

*Stage 4* - coarsely fibrous bone surface and rough textured, with small and large splinters loose enough to fall from bone when moved.

*Stage 5* - at this stage, bone is falling apart *in situ*, with large splinters lying around the remains of the bone that is usually fragile and easily broken by moving.

Bone surfaces have been examined for the most advanced weathering stage covering at least 1 square centimetre of the surface of bone, avoiding areas with breakages.

*Post-depositional modification*

Post-depositional factors can change an assemblage's original skeletal part representation and modification patterns, damaging the original bones and their surfaces. This destruction and/or modification hinders skeletal element identification and masks or deletes surface modifications that may be useful in the identification of accumulating and modifying agents. The effect of post-depositional destruction on bones depends on their structural density (Brain, 1981; Klein and Cruz-Uribe, 1984; Grayson, 1989; Klein, 1989). Less dense skeletal elements will be destroyed faster or before denser skeletal elements in the same depositional environment (Grayson, 1989; White, 1992). The skeletal elements that disappear first during post-depositional destruction include the axial elements such as ribs, vertebrae, scapulae, pelves, and limb bone epiphyses, as they have thin cortex and large sections of cancellous bone, and are thus less dense and fragile.

Insects modify bone surfaces, forming shallow gallery-like marks in addition to boring, furrowing and grooving of bone surfaces (Behrensmeyer, 1978; Kitching, 1980; Lyman, 1994). Geological modification caused by sediment overburden pressure is observed on bone specimens in the form of cracking of bones, distortion and plastic deformation of some specimens, resulting in irregularity in the shape and breaking of specimens and dislocations of parts of bones relative to the normal shape of the bone (Lyman, 1994; Shipman, 1981). Other forms of post-depositional modification include trampling and abrasion. Trampling marks are identified as shallow, randomly orientated and multidirectional scratches that are at times sub-parallel (Behrensmeyer *et al.*, 1986, 1989; Fiorillo, 1989; Lyman, 1994; Olsen and Shipman, 1988). Abrasion is identified where there is smoothing or polishing of bones from trampling (Brain, 1967), especially in loose sedimentary matrix, or from transportation in wind-blown and fluvial sediments (Shipman and Rose, 1984).

*Fluvial transport*

Abraded bones result from transportation through fluvial action but may also be a product of movement within the sediments in the cave. According to Shipman and Rose (1988) and Lyman (1994), the appearance of abrasion marks on bones has been shown to depend on:

*a)* particle grain size of the sediments with which the bones are transported
*b)* composition of the sediment
*c)* presence or absence of soft tissue on the bone
*d)* condition of the bone at the onset of transport (fresh or weathered, broken or whole, mineralised or unmineralised)
*e)* presence or absence of water in the sedimentary system
*f)* duration or distance involved in transport

Lyman (1994) provides a summary of body parts likely to be found at different stages in the process of fluvial transport in relation to current velocity. These are known as Voorhies groups after the seminal study of bone fluvial transport by Voorhies (1969) and Behrensmeyer (1975). This summary indicates that the more dense and larger bone elements are more likely to be found at or close to the source of the remains and less dense elements farther from the source. An assemblage with most or all of the skeletal elements is likely to have been deposited at or near source or point of death of the animal in an undisturbed or minimally disturbed assemblage.

*Excavation and preparation midification*

This kind of modification occurs on the bone specimens during excavation, cleaning and preparation of the faunal assemblage. These modifications range from complete breakage of specimens into many pieces to scratches, chipping and slicing of specimens (some of which I was able to refit). Other forms of modification appear as fresh chipping or slicing on the edge of compact bones or on bone surfaces. Preparation and excavation modification is differentiated from ancient or pre-fossilisation marks by the fresh appearance of the break or marks and lighter colouration, different from the rest of the bone surface and by the absence of matrix adhering to fracture edges which is unlike the rest of the bone showing ancient modification (White, 1992).

### 2.3.7 Skeletal element and taxa frequencies

Skeletal part and taxa frequencies are used in combination with modification marks to determine the agents of accumulation and the general taphonomic history of an assemblage. The following measures of abundance were used in this study:

*Number of Identified Specimens (NISP)*

This is the total number of bones identified to taxon (Grayson, 1984; Klein and Cruz-Uribe, 1984). NISP thus include post-cranial bone fragments and cranio-dental remains identified to skeletal element, family, subfamily, genus, species or mammalian size class (Lyman, 1994). White (1992) notes that the value of NISP of an assemblage depends greatly on the ability of a scientist to identify bone specimens to skeletal elements and to taxa from the most subtle features. My identifications were aided by the comparative materials named earlier in the materials section of this thesis, together with consultation with colleagues. I have tried to be as specific as possible with cranial specimen identification to the tribe, genus and/or species. Most post-cranial specimens have been identified to mammalian size class for bovid specimens following (Brain, 1974, 1981) and to genus or species for non-bovid taxa such as primates and carnivores.

*Minimum Number of Elements (MNE)*

Minimum number of elements is the smallest number of skeletal elements necessary to account for the bone fragments identified. The minimum number of elements (MNE) was calculated on each skeletal element category for each taxon according to the method described by Bunn (1986), Bunn and Kroll (1986) and Pickering (1999). Using this method, all specimens assigned to one skeletal element category were matched and compared for overlapping regions of the bone, differences in thickness, and side before attributing them to different or single elements.

*Comprehensive Minimum Number of Individuals (cMNI)*

The comprehensive minimum number of individuals (cMNI) was calculated for each skeletal part category per taxon as done by Pickering (1999). In this method, all specimens belonging to a single taxon were compared to establish if further identification of individuals represented by the different elements is possible (Binford, 1978, 1981, 1984a; Bunn and Kroll, 1986). The cMNI values were estimated by visual examination among and between elements of the same taxa. These are compared to differentiate them by side (left or right), relative sizes, and ages (fused epiphyses for adults versus unfused for juveniles) of the individuals they represent where possible (Pickering, 1999). This estimate is substituted for the traditional Minimum Number of Individuals (MNI) in this study as the methods described for deriving MNI estimates do not take into account differences in individuals that can be deciphered from the differences in size and age of individuals observable on different specimens. This estimate derives the highest minimum number of individuals as described by Pickering (1999). It takes into account all the factors observed on specimens that differentiate specimens and individuals. By not assuming that two proximal femora (right and left) in an assemblage would always derive from a single individual, this estimate differs from White (1953)'s MNI, cited in Lyman (1994) and Binford's Minimum Number of Animal Units (MAU) (Binford, 1978, 1981, 1984a). Instead cMNI estimation involves comparing such specimens and determining if they can be differentiated by relative age and size (Pickering, 1999).

*Minimum Number of Animal Units (MAU)* and *percentage Minimum Animal Units (%MAU)*
MAU and %MAU are estimated in order to derive the number of animal units transported to the accumulation site from the butchery site (Binford, 1981, 1984a,b). Binford developed this method on the realisation that accumulators do not necessarily transport whole carcasses, and where whole carcasses are transported, dispersal may be by secondary predators or scavengers. MAU of an element is estimated using MNE values, which are divided by the number of times that element occurs in a skeleton. Percentage MAU values are derived by dividing all MAU values by the highest MAU value of the taxon (Binford, 1981, 1984a,b; Lyman, 1994).

### 2.3.8 Fracture attribute analysis

Fractured edges of bones have been examined to determine if bone breakage occurred while the bone was fresh or dry (Johnson, 1985; Agenbroad, 1989; Villa and Mahieu, 1991; Lyman, 1994). Fresh bone fractures result when bones are relatively green, producing smooth-textured edges forming acute and obtuse angles with the outer cortical surface of bone (Johnson, 1985, 1989; Villa and Mahieu, 1991). These fractures have edge colours similar to those of the surface due to their similar antiquity (Johnson, 1985; Agenbroad, 1989; Lyman, 1994). Dry bone breaks, on the other hand, occur after bones have lost their moisture and some of their organic content due to degreasing, drying and mineralization. Dry bone breaks result from horizontal tension failure leading to a fracture that cuts across the diaphysis to produce perpendicular and parallel or diagonal breaks. These breaks normally have a different colour from that of the bone's outer surface, are rough-textured and are at right angles to the outer cortical surface of bone (Johnson, 1985, 1989; Agenbroad, 1989; Villa and Mahieu, 1991; Lyman, 1994).

Carnivores and hominids break bone for marrow extraction shortly after the animals' death when bone is still fresh, while post-depositional factors tend to break dry bone, but they may also break fresh bones if burial occurs soon after death of animals (Agenbroad, 1989). Therefore bone breakage pattern can be used together with modification marks to determine at what stage in the taphonomic history of the bone the breakage occurred, and what could have caused breakage. Bone fracture surface attributes such as fracture outline, angle and edge are adopted from Villa and Mahieu (1991) for this purpose. Villa and Mahieu developed these fracture surface characteristics for establishing the timing of breakage of bones. These attributes include: angle, outline and edge length/breadth ratio of splinters, shaft circumference and fragmentation (Johnson, 1985; Villa and Mahieu, 1991).

These attributes were recorded for long bone shafts and shaft fragments with fresh breakage on one or both ends. These fracture attributes, however, were not recorded for fracture surfaces exhibiting porcupine or small rodent gnawing. Also excluded from fracture analysis were specimens with breakages through cancellous bone, or breakages at or near the epiphysis, as these regions of bone break irregularly and unpredictably, making them different from the hard compact bone shaft. In addition, their pattern of breakage is unpredictable (Villa and Mahieu, 1991). These authors noted that five of the fracture attributes they developed are useful in assessing the timing and cause of bone breakage in an assemblage. These have been adopted for this study to assess the timing of breakage of bones in this assemblage as occurring either soon after an animals death, thus fresh/green bone or dry bone break, and are discussed below:

*Fracture angle* is the angle formed by the fracture surface and the bone cortical surface. Fracture angles can be right angle, oblique or variable/intermediate (oblique and right angled). Fresh broken bone assemblages show a predominance of oblique angled fractures as opposed to right-angled fractures of dry broken bone assemblages (Johnson, 1985; Villa and Mahieu, 1991).

*Fracture outline* refers to the shape of the fracture surface. This can be:
*1)* Transverse, straight fractures that are perpendicular to the long bone axis, or
*2)* Curved or portions of combined curved fracture and V-shaped or pointed fractures, representing complex multidirectional morphologies not similar to transverse, rectilinear morphologies, or
*3)* Intermediate fractures, which are straight in morphology but diagonal, or which have stepped outline. A fresh broken bone assemblage has a high frequency of curved fractures, while a dry broken bone assemblage has a higher frequency of transverse fractures (Villa and Mahieu, 1991).

*Fracture edge* is the texture of the fracture margin (Villa and Mahieu, 1991). These can be smooth or jagged. Breaks that occur when bones is still fresh (green bone breaks) result in smooth margins and surfaces, and dry bone breaks result in jagged edges. Johnson (1985) and Villa and Mahieu (1991), however, believe that this attribute does not strongly discriminate on the state of the bone at the time of break, but rather it is more likely to depend on whether the force applied to break the bone was dynamic or static loading.

*Shaft circumference*, according to Bunn (1983a,b), differentiates between bones accumulated by hyaenas, the majority of which have complete circumferences, and those accumulated by human hunter-gatherers, the majority of which are splinters. Attributes for circumference completeness used in this study include:
1) shaft circumference less than 50%
2) shaft circumference greater than 50% and
3) complete shaft circumference (100%), see Villa and Mahieu (1991). Post-depositionally broken bone assemblages are characterised by a high frequency of full circumference bone specimens, while carnivore and hominid-produced freshly broken bone assemblages produce predominantly full circumference bone specimens (Binford, 1981; Bunn, 1981; Todd and Rapson, 1988). This attribute cannot therefore be used on its own as an indication of the agent or

Table 2.1: Fracture attribute values for the French Neolithic sites from Villa and Mahieu (1991)

| **Fracture Attributes** | **Sarrians** | **Bezouse** | **Fontebregoua** |
|---|---|---|---|
| **Fracture Angle** | | | |
| Oblique | 22 | 27 | 144 |
| Right | 176 | 174 | 47 |
| Intermediate | 71 | 52 | 13 |
| **Total** | **269** | **253** | **204** |
| **Fracture Outline** | | | |
| Curved | 106 | 82 | 134 |
| Transverse | 193 | 144 | 92 |
| Intermediate | 59 | 61 | 35 |
| **Total** | **358** | **287** | **261** |
| **Circumference** | | | |
| 1 (100%) | 200 | 60 | 13 |
| 2 (>50%) | 10 | 0 | 23 |
| 3 (<50%) | 16 | 33 | 115 |
| **Total** | **226** | **93** | **151** |

condition of breakage. It must be used with other attributes such as bone surface modification in order to determine fracture agents (Blumenschine, 1988; Todd and Rapson, 1988).

*Breadth/Length ratio* is calculated for long bone shaft fragments with widths smaller than their original shaft diameters (Villa and Mahieu, 1991). Therefore, specimens with complete circumferences are not included in the calculation of breadth/length ratio. Freshly broken bone assemblages are expected to have lower breadth/length ratios compared to dry broken assemblages. Table 2.1 provides absolute values for the fracture attributes of the three French Neolithic sites analysed by Villa and Mahieu (1991) and used to study the fracture attributes in this assemblage.

### 2.3.9 Bone fragments

Refitting of bone shaft fragments conducted in this study after the pioneer works of Bunn (1983a,b, 1986) and Bunn and Kroll (1986) helped put together some previously unidentifiable bone fragments and increased their identifiability. This has also raised the skeletal element representation by altering the

Minimum Number of Elements (MNE) and reducing bias from fragmentation. Some broken edges permitted this kind of refitting of even some old breaks with adhering soil and breccia.

# Chapter 3

# Stratigraphy of the western breccias

## 3.1 Introduction

This chapter outlines the findings of the stratigraphic investigations of the western younger breccias at Sterkfontein. One of the aims of this study was to clarify the stratigraphy of the western area breccias, including Member 5 West, Member 6 and the Post-Member 6 Infill. This research focused on determining the extent of the Member 5 West deposit and establishing the relationship with Member 6 in both the excavated and unexcavated areas of the deposit. This has been done by increasing the excavated area to the West in the calcified breccia of Member 5 West. These excavations were conducted by University of the Witwatersand staff stationed at the site, under the directorship of Professor R. J. Clarke.

The Sterkfontein excavations have exposed at least eight breccias with distinct faunal and artefactual properties. These have been classified in ascending order, Members 1 to 6, in the Sterkfontein Formation (Partridge, 1978). In addition, two separate infills, the StW 53 Infill and and the Post-Member 6 Infill have recently been identified by Kuman and Clarke (2000). The area at the western end of the current excavations was stratigraphically investigated during this study. This includes the area initially known as the Extension Site (Robinson, 1962), but today named Member 5 West. This area also includes

Member 6 and the Post-Member 6 Infill.

The current stratigraphic study of the western breccias involved excavations for the further recovery of fauna for biostratigraphic and biochronological age estimation. Also intended for this study was the recovery of artefacts for cultural chronology of the strata. Faunal analysis of material from these younger Member 6 and Post-Member 6 deposits reveals a mid to upper Pleistocene resulting from accumulation by multiple agents and impacted on by different modification agents. Detailed results of studies of faunal and artefact assemblages studied from these sediments are provided in Chapters four, five, six and seven of this thesis.

## 3.2 Earlier stratigraphic interpretations

Early research on the stratigraphy of the Sterkfontein Caves has been published by Robinson (1962), Partridge (1978) and Partridge and Watt (1991). Robinson postulated the existence of one large chamber in the area of the current excavations in which material accumulated in different phases of the caves' development. In this respect, Robinson (1962) observed that breccia of the Type Site (now Member 4) accumulated in a large underground cavern that may have extended east-west in the entire area now open to the surface by weathering of the dolomite roof. Clarke (1994) and Kuman and Clarke (2000), however, observed a later phase of Member 4 accumulation in the west. The deposition of Member 4 was followed by the deposition of the Oldowan Infill through a vertical shaft in the central area (Kuman, 1994a; Pickering, 1999; Kuman and Clarke, 2000). An instability of the dolomite floor below the Oldowan in the central area of the cavern may have led to the collapse of the Oldowan Infill, and probably the underlying Member 4 breccia into a lower cavern, the Name Chamber (Kuman and Clarke, 2000).

Member 5 was once thought to have accumulated as a single underground cavern deposit possibly overlying Member 4 breccia. It has, however, recently been subdivided into three distinct deposits: the StW 53 Infill, the Oldowan

Infill and the early Acheulean breccia (Member 5 East and West), leading to a revision of the deposition sequence of the Member 5 breccia (Kuman and Clarke, 2000). The StW 53 Infill deposit, originally thought to be part of the Member 5 breccia, is now considered to be intermediate in age between Member 4 and Member 5 as it has some earlier taxa (Pickering, 1999) and also lacks stone tools which are present in the adjacent Acheulean breccia. The hominid specimen, StW 53, assigned to the taxon early *Homo* by Hughes and Tobias (1977), has been re-assigned to a later phase of *Australopithecus* by Clarke (1994) and Kuman and Clarke (2000). The current study has also confirmed that the StW 53 Infill is a late phase of the Member 4 deposit [Figure 3.1, (Clarke, 2006)], as detailed in the sequence of infills. Further excavations in the Member 5 deposits in the 1990's revealed different phases of deposition following the StW 53 Infill. The Oldowan tool-bearing sediments are at a lower level underlying decalcified Member 5 early Acheulean deposits. Calcified Member 5 early Acheulean is found in good context to the west (Clarke, 1994; Kuman and Clarke, 2000).

Figure 3.1: The southern profile in the western area showing the Member 4 hanging remnant. The person at the left is pointing to the remnant of a stalagmite curtain (outlined in black) which separates the StW 53 Infill (in the upper part of the photo) from the early Acheulean deposits. Grid squares are 3 feet by 3 feet. Photo courtesy R. J. Clarke.

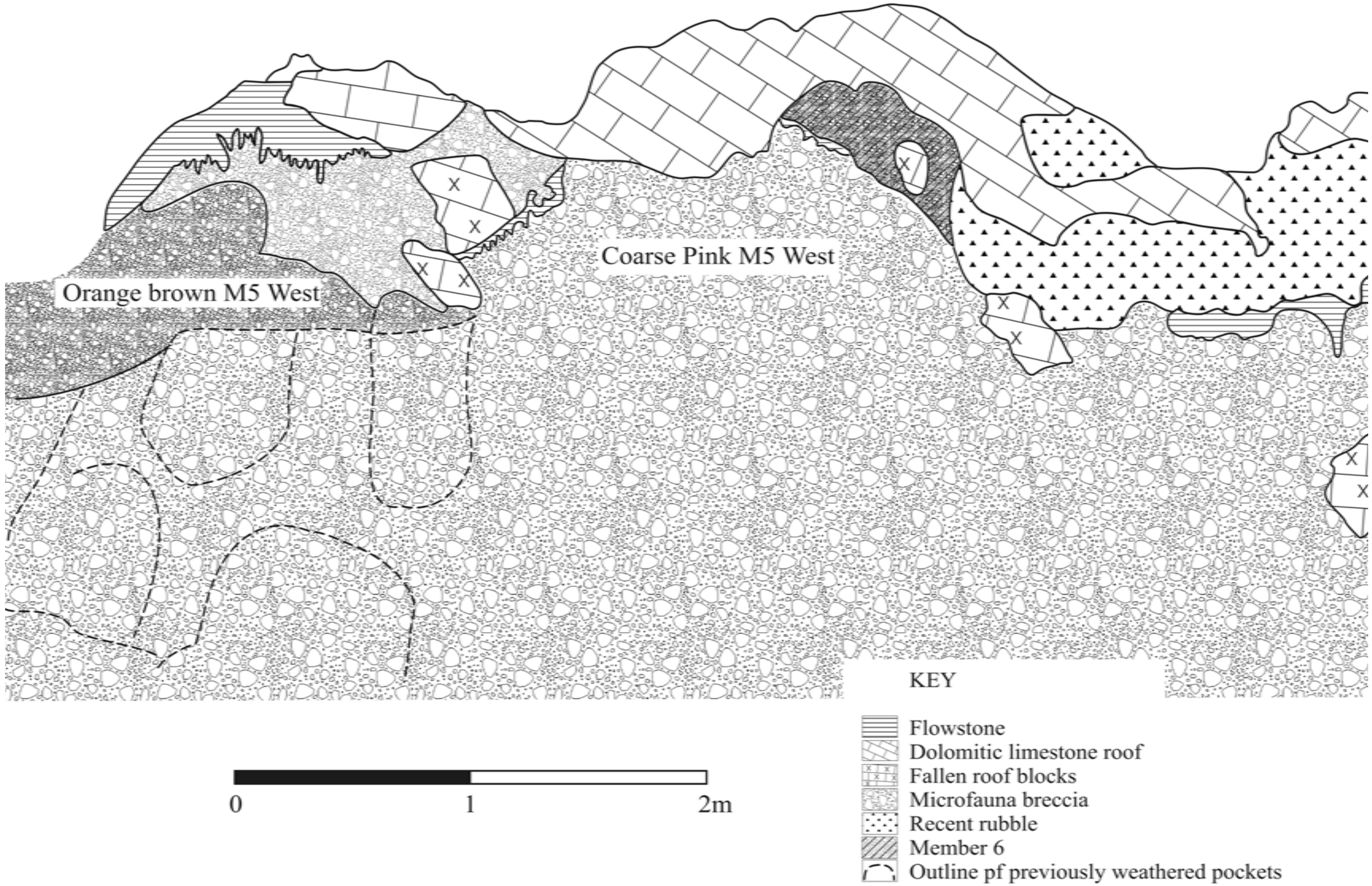


Figure 3.2: Profile of the western section showing the current layout of some Member 5 breccia types and Member 6.

The Member 5 West area also contains Middle Stone Age period deposits of Member 6 and the intrusive Post-Member 6 Infill. Member 6 is preserved as a small remnant of the original deposit overlying a flowstone capping Member 5 West (Robinson, 1962; Brain, 1981; Kuman and Clarke, 2000). The Member 6 deposit may have filled only a limited space between the dolomite roof and the underlying Member 5 breccia, prior to erosion of a channel in the northern area between Member 5 East and West. This channel was subsequently infilled with the Post-Member 6 deposit (Kuman and Clarke, 2000).

The erosion channel filled by Post-Member 6 had minimally dissolved the undersurface of Member 6, leaving this portion of Member 6 breccia as a hanging remnant. This later infill occupies a large area, which probably once contained Acheulean breccia linking Member 5 West and Member 5 East (Chapter One, Figures 2 and 3). The sediments of Member 5 East and West may have been decalcified and mixed with the younger incoming Post-Member 6 Infill sediments (Clarke, 1994; Kuman, 1994a,b, 1998; Kuman and Clarke, 2000; Reynolds, 2000; Reynolds *et al.*, 2003, 2007). The Post-Member 6 Infill thus appears to have incorporated some elements eroded from the Member 5 West Acheulean breccia and possibly Member 6, as well as broken blocks of the Member 5 West capping flowstone (Reynolds, 2000; Reynolds *et al.*, 2003, 2007). The decalcification and mixing of these sediments is suggested by the work of Reynolds (2000) on fauna and artefacts from the adjacent Lincoln Cave. Reynolds suggests similarity between the Post-Member 6 Infill, Lincoln Cave South assemblages and Member 5 West assemblage. These indicate possible erosion or collapse of the older Member 5 West deposits and the incorporation of some Acheulean artefacts and early *Homo* teeth into the younger Lincoln Cave and Post-Member 6 Infill deposits. The Member 5 West area was excavated for the present study to clarify the stratigraphy of the sediments. This excavation also increased the sample sizes for fauna and artefacts for the better understanding of the the Post-Member 6 Infill breccia contents. Following are the current interpretations for the stratigraphy in this area.

## 3.3 Revised stratigraphy of the western breccias

Recent excavations at the western end of the Sterkfontein surface excavation site have revealed a more complex stratigraphic sequence than previously recognised. Robinson (1962) identified blocks of the Lower Breccia (now Member 4) in the Middle Breccia (now Member 5) of the Extension Site, and postulated that the chamber first filled with Lower Breccia which would have extended west to the Extension Site, before a subsidence that allowed room for accumulation of the later breccias. The accumulation of Member 4 in the region of the Extension Site was confirmed by Kuman and Clarke (2000) when they identified inter-fingering of Member 4 breccia in the western area (Figure 3.3). This area was, until then, known to contain only Member 5 breccia. This study has determined that older, possibly Member 4 breccia may still lie further west of the Member 5 West early Acheulean, even beyond where Member 4 breccia had previously been identified by Kuman and Clarke (2000), Figure 1.2.

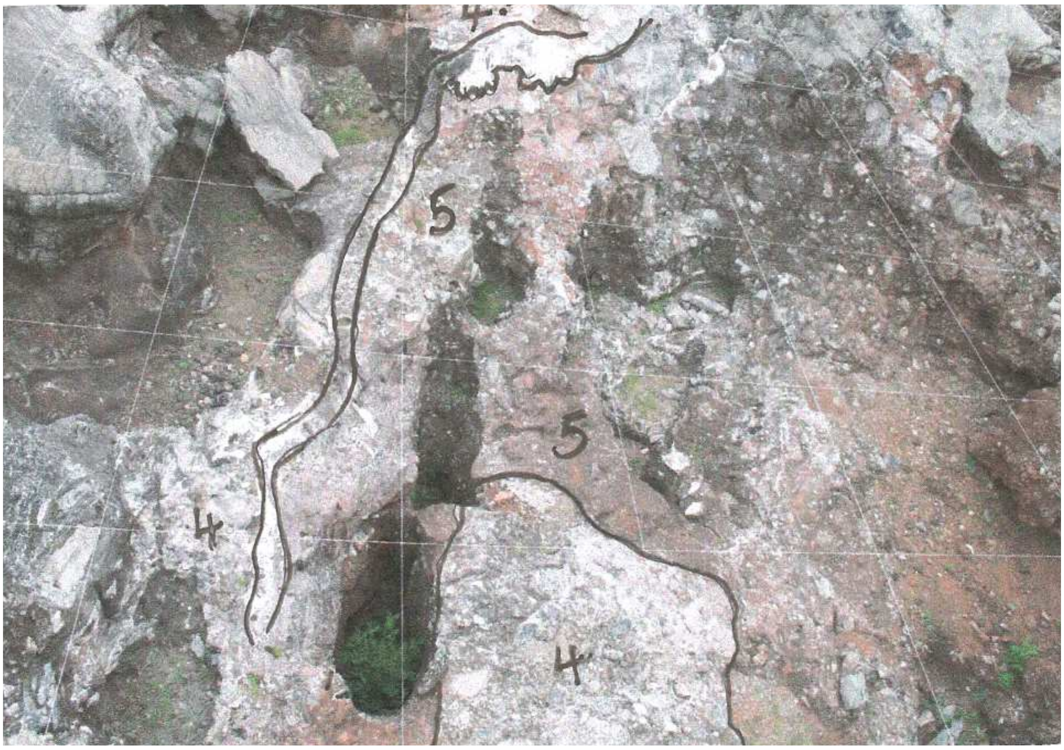


Figure 3.3: Planview of the southwest corner showing the complexity of the Member 4-Member 5 interface. Note the interfingering of the Member 4 (stony greyish, marked '4') and Member 5 (sandy orange, marked '5') in the foreground and hanging remnant of Member 4 left of stalagmite (white flowstone) curtain to the left (outlined in black). West is at the top of the picture and the dark oval pits running East-West are excavated decalcified pockets. Grid squares are 3 feet by 3 feet. Photo courtesy of R. J. Clarke.

The Member 4 hanging remnant on the southern wall of the cavern is separated from the Member 5 infill to the north by a stalagmite curtain that formed against the hanging remnant. This stalagmite curtain is continuous with the 'finger-like' stalagmite curtain that is sectioned through on the western face of the excavation and which is formed against an older breccia to the west. Extensive excavation of this older breccia is required in order to determine whether it is Member 4 or even older.

Thus, the collapse that later affected the Oldowan Infill of Member 5 East, resulting in deposition of some of its breccia in the underground Name Chamber, would also have affected any underlying Member 4 deposit in that area. The westward extent of Member 4 breccia is demonstrated by the presence of Member 4 hanging remnants at the western end of the southern dolomite wall (Figure 3.2), the apparent Member 4 breccia exposed in the western profile and the flowstone that curtains that breccia. It is noted that the Oldowan Infill did not accumulate as far west as the current western profile, as it has been shown to have accumulated in a horizontally restricted area in the Member 5 East via a narrow vertical shaft (Pickering, 1999; Kuman and Clarke, 2000). This deposition scenario has been confirmed by concentrations of artefacts in a small area (Kuman, 1994a; Kuman and Clarke, 2000) and the representation of animals, identified from bones in the deposit, by nearly all skeletal elements, indicating a death-trap situation where animals fell to their death down a vertical shaft concealed by vegetation (Pickering, 1999).

The current excavations have also provided a clean profile for the observation of Member 5 West sediments on the western excavation face. This has resulted in the identification of four distinct sediments on the western face (Figures 3.2 and 3.4). These sediments include a fine orange-brown, stone tool-bearing Member 5 West breccia with small dolomite rock pieces, a coarse pinkish stone tool-bearing Member 5 West breccia, a stone tool bearing yellowish microfauna breccia, and a fine chocolate brown Member 6. The fine, orange-brown, stone-tool-bearing Member 5 West breccia may be a variant of the pink Member 5 West breccia, with colour and possible texture differences

Figure 3.4: View of the southern end of the current western profile showing the extent of recent excavations and the breccia types represented. Notice the large Acheulean tools (in white circles) and the 'finger-like' stalactites at the top which formed against a breccia older than Member 5. See Figure 3.2 for an explanation of the profile.

due to ancient water filtration from the overlying microfauna breccia which was originally an organically rich owl pellet accumulation (Clarke personal communication 2006). These Member 5 West variants in the western face were previously regarded as a single homogenous deposit representing the Member 5 West early Acheulean.

At the base of the current west face, a fine brown breccia containing small dolomite pieces and stone tools is exposed. This is possibly the earliest sediment of Member 5, resting against a flowstone that has formed a curtain against Member 4 hanging remnants in the southern and western faces. This brown breccia is overlain by the coarse pinkish breccia in which stone tools can be seen (Figures 3.3 and 3.4), and which was previously described as Member 5 West early Acheulean breccia (Kuman, 1994a,b, 1996, 1998; Kuman and Clarke, 2000). In the north, this pinkish coarse breccia is capped by a flowstone that thins out southward and is not visible in the southwestern corner. In the south, this pinkish breccia has been overlain by the yellowish microfauna breccia which has filled spaces between stalactite strands curtaining the probable breccia of Member 4 in this area (Figures 3.2 and 3.4). This stalactite is continuous with a flowstone curtaining Member 4 on the southern profile and is not the same as the Member 5 West capping flowstone. Member 5 West is thus sandwiched between these two flowstones. A fine chocolate brown breccia initially described as the Upper Breccia (Robinson, 1962) and later termed Member 6 (Partridge, 1978) overlies the capping flowstone in a small pocket at the northern end of the current western profile. Although this area is close to the northern profile where Member 6 has been identified, Member 6 has not been identified elsewhere in the western profile, especially in the more southerly parts of the profile.

The Member 5 West (pinkish breccia) capping flowstone was laid down over the breccia. In contrast, the curtain of flowstone stalactites (Figure 3.4) appears to have formed prior to the deposition of Member 5 West itself, with the microfauna breccia filling spaces between the stalactites (rather than the stalactites filling cracks within the microfauna breccia if the breccia had been deposited before the flowstone). In addition the stalactites are continuous with the southwestern flowstone curtain over the Member 4 hanging remnant against which Member 5 West breccia has been deposited. Thus, the Member 5 West breccias must have been deposited after the formation of the southern flowstone curtain and the 'finger-like' stalactites.

The layout of the breccias in the west profile supports the deposition sequence suggested by Robinson (1962) and Clarke (1994). They argued that Member 4 breccia collapsed into an underlying cavern after filling most of the upper chamber. This collapse created a cavity in the western area of the chamber, leaving Member 4 hanging remnants to the south and to the west (Figure 3.1). The cavern entrance was choked and a flowstone was formed over the Member 4 hanging remnants, dripping to form 'finger-like' stalactites in the western area. This flowstone thins towards the north and completely disappears halfway towards the northern excavation face.

After the formation of the flowstone, a vertical shaft entrance opened at the centre of the site and the Oldowan Infill was deposited, followed by the early Acheulean deposits after enlargement of this entrance (Kuman and Clarke, 2000). These Acheulean deposits filled the cavity in which 'finger-like' stalactites had earlier been formed during different sediment and climate regimes, resulting in the multiple types of Member 5 breccias. The larger opening for the accumulation of Member 5 was choked and another opening was later created in the western face area. This opening with a possible fallen roof block as a ledge allowed the roosting of owls, resulting in the accumulation of the microfauna breccia up to the base of the fallen roof block and filling the spaces between the 'finger-like' stalactites. This has left the 'finger-like' stalactites previously hanging from the dolomite roof/ledge now as 'finger-like' strands of flowstone in the microfauna breccia (Figures 3.2 and 3.4). The current face now exposed consists of stalactites, and it has a flowstone capping yellowish microfauna breccia. This breccia overlies a dark brown fine sediment with small dolomite blocks and stone tools, underlain by a coarse pinkish Member 5 West breccia.

## 3.4 Conclusion

Thus, the apparent deposition sequence of deposits at the western end of the current Sterkfontein excavation is as follows: Member 4 breccia filled at least part of the western end of the cavern. Some of this breccia collapsed into a lower cave, leaving Member 4 hanging remnants (including StW 53 breccia) against the southern cave wall. Extensions of Member 4 breccia were left jutting westward in the central part of the cavern. A stalagmite curtain formed against the western and southern remnants of Member 4. The space left by collapse was filled with a succession of Member 5 breccias that also banked against the stalagmite curtain. Owls roosted in the cave during the final Member 5 accumulation, resulting in a rodent breccia that fills interstices of the western stalagmite curtain. A capping flowstone formed over the northwestern portion of Member 5. Member 6 breccia formed on top of this capping flowstone and beneath the cave roof. Parts of the Member 5 and Member 6 breccias were eroded away and filled with Post-Member 6 deposit in the northern part of the cavern, and probably extending into the Lincoln Cave to the north.

This is the probable sequence of events as interpreted by this study based on the breccia remaining in situ after excavations by A. R. Hughes and R. J. Clarke and further clarified by excavations for this study. The occurrence of relatively recently formed deep decalcification pockets within the breccias has added to the complexity visually but not stratigraphically as their contents are a match for the surrounding breccia. For example, it was found during Alun Hughes' excavations of the StW 53 solution pocket that portions of the StW 53 hominid cranium within the decalcified breccia conjoined with a cranium portion in the solid breccia forming the wall of the pocket (Hughes and Tobias, 1977). Hence one can conclude that these pockets are of the same material as their surrounding breccia and have not been filled with more recent material.

# Chapter 4

# Member 6 Fauna

## 4.1 Introduction

Excavations in the Extension Site at Sterkfontein Cave by Robinson (1962) in the 1950s identified the chocolate brown Upper Breccia; a small infilling under the roof overlying Member 5. It was later named Member 6 by Partridge (1978). Faunal material from this deposit was initially analysed by Brain (1981), who noted that this sample was small and not very informative. Further excavations were thus conducted during this study to increase the sample size of the fauna and to possibly recover artefacts from this deposit, but unfortunately they did not yield any further material. This chapter, therefore, provides a re-analysis of the fauna from earlier excavations of the Member 6 deposit to provide a more up-to-date identification and interpretation of the assemblage.

In the new excavations, Member 6 sediments were identified as a small pocket of sediment in the western profile where only Member 5 West early Acheulean was previously identified (Figure 3.2). A hanging remnant of Member 6 breccia is identified in the northern profile (see Figure 1.4), but further excavation in the norther profile was not possible here due to instability of the overlying roof blocks. However, some Member 6 faunal material not previously analysed was found in boxes with the fine dark brown breccia in storage at the NFI (Transvaal Museum), and these specimens were included in this study (Appendix B.1). On the other hand, some published specimens from

Robinson's collection could not be identified as a result of breakage of some of the specimens in storage, and illegible catalogue numbers, or parts of catalogue numbers which had deteriorated in storage (Appendix B.2). Since no artefacts have been recovered from this and earlier excavations of the Member 6 deposits, only fauna has been analysed for this study to provide a new and more accurate interpretation of the deposit.

## 4.2 Taxonomy

Representatives of two bovid tribes Antilopini and Alcelaphini have been identified in the Member 6 assemblage. Three carnivore families (Hyaenidae, Felidae and Canidae) and one family each for the Orders Primates, Peryssodactyla, Lagomorpha, Rodentia and Hyracoidea have also been identified among the Member 6 faunal assemblage. Table 4.1 gives details of family, subfamily and/or tribe, genus and species of the specimens identified. A list of all identified specimens from this assemblage can be found in Appendix B.2.

At least one species of primate, *Papio ursinus*, is identified in Member 6.

One canid species (*Canis* cf *mesomelas*) and an indeterminate canid represent the Carnivora.

Size Class 1 bovids were only identified to size category. Size Class 2 bovids include *Antidorcas* and *Damaliscus*, while Size Class 3-4 include *Connochaetes*.

The Equidae are represented by Burchell's zebra, *Equus burchelli.* Hyrax, *Procavia capensis*, hare, *Lepus capensis*, and porcupine, *Hystrix africaeaustralis* have also been identified in this assemblage.

## 4.3 Skeletal part and taxa representation

The assemblage consists of 465 specimens, 52 (11.2%) of which are identified to skeletal element and/or family. 410 (88%) are identified to skeletal element and size class. At least 34 individuals are present in the Member 6 assemblage. Table 4.2 gives details of the element representation in this assemblage by

Table 4.1: Member 6 faunal assemblage taxa representation

| Order | Family/Tribe | Genus/Species | Common Name |
|---|---|---|---|
| **Primate** | Cercopithecidae | *Papio ursinus* | Baboon |
| **Carnivora** | Felidae | indet. small felid | |
| | | indet. medium felid | |
| | Hyaenidae | *Parahyaena brunnea* | Brown hyaena |
| | Canidae | *Canis* cf. *mesomelas* | Jackal |
| | | indet. Canid | |
| | | indet. small carnivore | |
| | | indet. medium carnivore | |
| **Artiodactyla** | Bovidae | | |
| Size Class 1 | | | |
| Size Class 2 | | | |
| | Antilopini | *Antidorcas marsupialis* | Springbok |
| | Alcelaphini | *Damaliscus* cf *dorcas* | Blesbok |
| Size Class 3-4 | | *Connochaetes* cf *gnou* | Wildebeest |
| **Perissodactyla** | Equidae | *Equus burchelli* | Burchell's zebra |
| **Hyracoidea** | Procaviidae | *Procavia capensis* | Hyrax |
| **Rodentia** | Hystricidae | *Hystrix africaeaustralis* | Porcupine |
| **Lagomorpha** | Leporidae | *Lepus* cf *capensis* | Cape hare |

taxon.

### 4.3.1 Primates

The primate NISP is two, with an MNI of 1. The specimens are SE-2046, a proximal right humerus shaft fragment and SE-731, a first left phalanx. Neither of these specimens was previously identified as primate and the taxon primate was not listed by Brain (1981) as being present in Member 6.

Table 4.2: Member 6 faunal assemblage element and taxa representation (NISP/MNE/cMNI).

| Element | Primate | Carnivore | Equid | Size Class 1 | Size Class 2 | Size Class 3-4 |
|---|---|---|---|---|---|---|
| HORN | | | | | 1/1/1 | |
| 1/2 MAX | | | | | 1/1/1 | |
| 1/2 MAND | | 1/1/1 | | 1/1/1 | | |
| I | | 1/1/1 | | | | |
| C | | 2/2/2 | | | | |
| P | | | | 1/1/1 | | |
| M3<br>M | | 1/1/1 | <br>5/3/2 | | | |
| VERT | | | | 1/1/1 | 3/3/1 | 1/1/1 |
| SCAP | | | | | 2/2/2 | 2/2/2 |
| HUM | 1/1/1 | 1/1/1 | | 3/3/3 | 7/6/6 | 2/2/2 |
| RAD | | | | 1/1/1 | 1/1/1 | 1/1/1 |
| ULN | | 1/1/1 | | | | |
| MTC | | 2/2/2 | | | 5/5/5 | 3/3/3 |
| PHAL 1 | 1/1/1 | | | | 5/5/5 | 3/3/3 |
| PHAL 2 | | | | 1/1/1 | | |
| 1/2 PEL | | | | 1/1/1 | 3/3/3 | |
| FEM | | | | 3/3/3 | 8/6/6 | |
| TIB | | 1/1/1 | | 3/3/3 | 8/6/6 | 4/3/3 |
| MTT | | 2/2/1 | | | 13/9/9 | 8/4/4 |
| MTP | | | | 1/1/1 | | 2/1/1 |
| CALC | | | | 1/1/1 | 2/2/2 | |
| SES | | | | | 1/1/1 | |
| RIB | | | | | 10/10/2 | 5/5/1 |

### 4.3.2 Carnivora

Twelve specimens have been identified as carnivores in the Member 6 assemblage. Table 4.2 gives details of specimens representing the carnivores. Two hyaenid individuals are represented by an upper right third incisor, SE-2299, and an upper right canine, SE-2329, of one brown hyaena (*Parahyaena brunnea*) and an $M^3$ of a sub-adult hyaena individual. Two canid specimens are SE-1423, which is a right proximal ulna fragment, and SE-2109, which is a distal metapodial fragment of *Canis mesomelas.* Felid individuals are represented by SE-864 and SE-2062, which are a distal left humerus and a proximal right fourth metacarpal of a medium-sized cat respectively. SE-2095 is a proximal right fourth metacarpal of a small-sized felid.

### 4.3.3 Perissodactyla

*Equus*

A total of five equid specimens has been identified in the Member 6 faunal assemblage. These specimens represent at least two individuals, a juvenile and an adult. SE-686 is a lower molar of a juvenile individual, SE-795 is a lower molar of an old individual, while SE-693, SE-704, and SE-818 are teeth fragments of adult equid individuals. The rest of the teeth are too fragmented to be assigned to any tooth category, side or age.

### 4.3.4 Bovidae

The bovid sub-assemblage is represented by an NISP of 415. Size Class 1 has an NISP of 28, Size Class 2 an NISP of 342, and Size Class 3-4 an NISP of 40. The bovid MNI is 20 (51.5% of tMNI). Table 4.2 gives details of bovid representation by skeletal element. The %MAU by size classes is presented in Figures 4.1, 4.2 and 4.3.

*Size Class 1*

Size Class 1 is best represented by tibiae, humerii, metapodia and femora

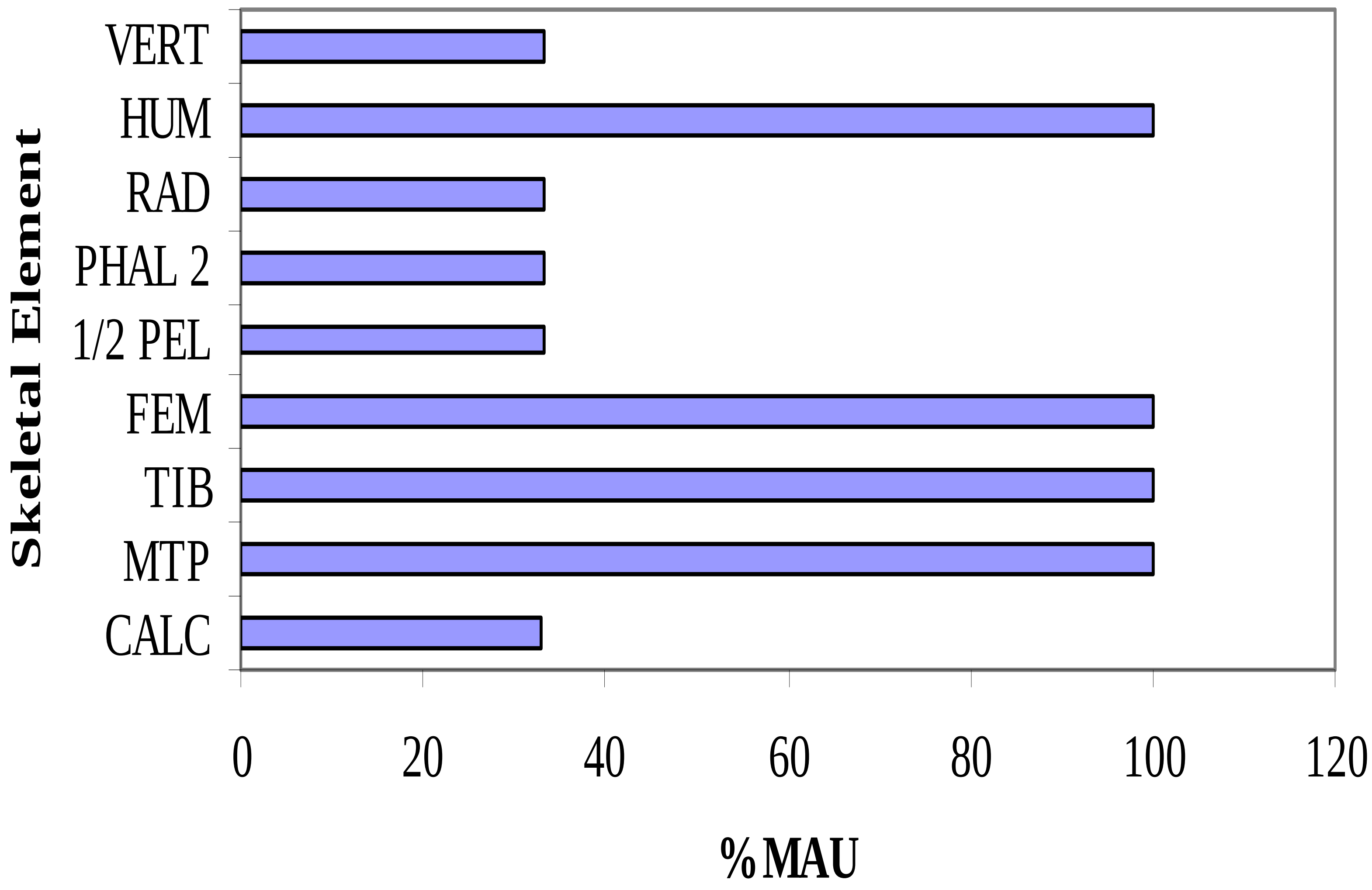


Figure 4.1: Member 6 assemblage Size Class 1 bovid %MAU

(Figure 4.1). These elements indicate at least three individuals based on three humeri (two right distal and a single shaft fragment of different sized-individuals) and three tibia shaft fragments representing three individuals. The other specimens belonging to Size Class 1 include one each of calcaneum, vertebra, innominate fragment, first phalanx, radius and premolar fragment. These specimens could have derived from three individuals already identified.

*Size Class 2*

This size class is well represented by the metapodia (metatarsals, metacarpals and indeterminate metapodia), humerii, femora and tibiae (Figure 4.2). At least nine individuals are represented by nine metatarsal elements identified from 13 specimens. All the other 319 specimens of at least 47 elements of Size Class 2 could belong to some of the nine individuals already identified as present in the assemblage from the enumerated elements. The small to medium-sized bovids are also represented in the Member 6 deposit by *Antidorcas* and *Damaliscus*. The *Antidorcas* individual is indicated by the three specimens SE-690, SE-691 and SE-692. SE-690 is a right mandible fragment with second and third molars. *Damaliscus* is identified from one specimen (SE-)1318, a right maxilla fragment with all premolars and the $M^1$ and $M^2$. The *Antidorcas* and *Damaliscus* MNI of 2 form part of the Size Class 2 tMNI of nine, the highest element MNI derived from 13 metatarsal fragments.

*Size Class 3-4*

Size Class 3-4 is best represented by four metatarsal elements (see Figure 4.3) with the metacarpals and tibiae being moderately represented. The MNI of Size Class 3-4 is four, derived from two right proximal, one left proximal and two metatarsal shaft fragments of different sizes. Size Class 3 is also represented by a *Connochaetes* identified from SE-1444, an upper molar fragment. The single *Connochaetes* individual forms part of the MNI of 4 derived for Size Class 3-4 bovids.

*Other taxa*

There are at least two *Procavia capensis* (hyrax) individuals identified from

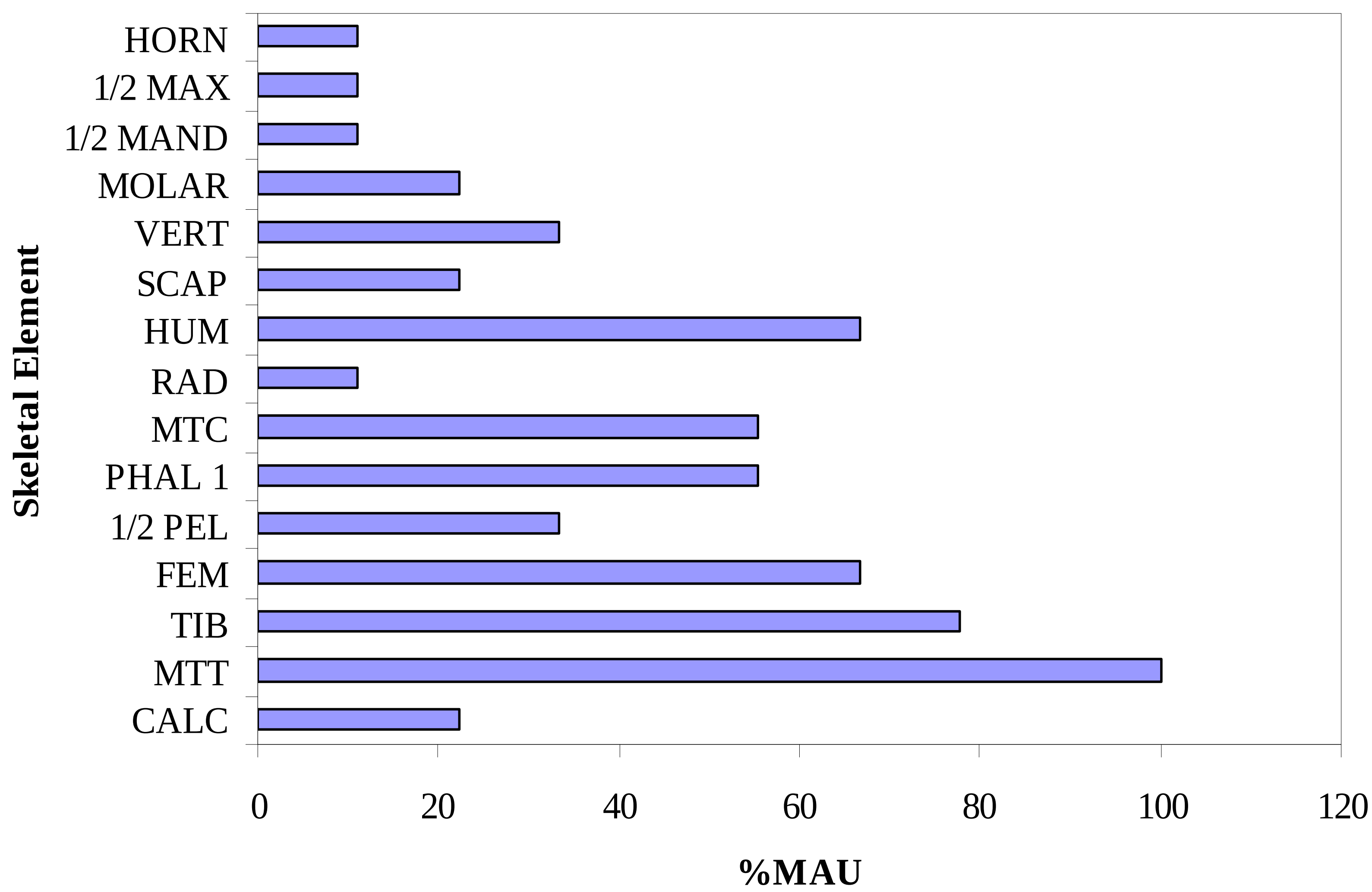


Figure 4.2: Member 6 assemblage Size Class 2 bovid %MAU

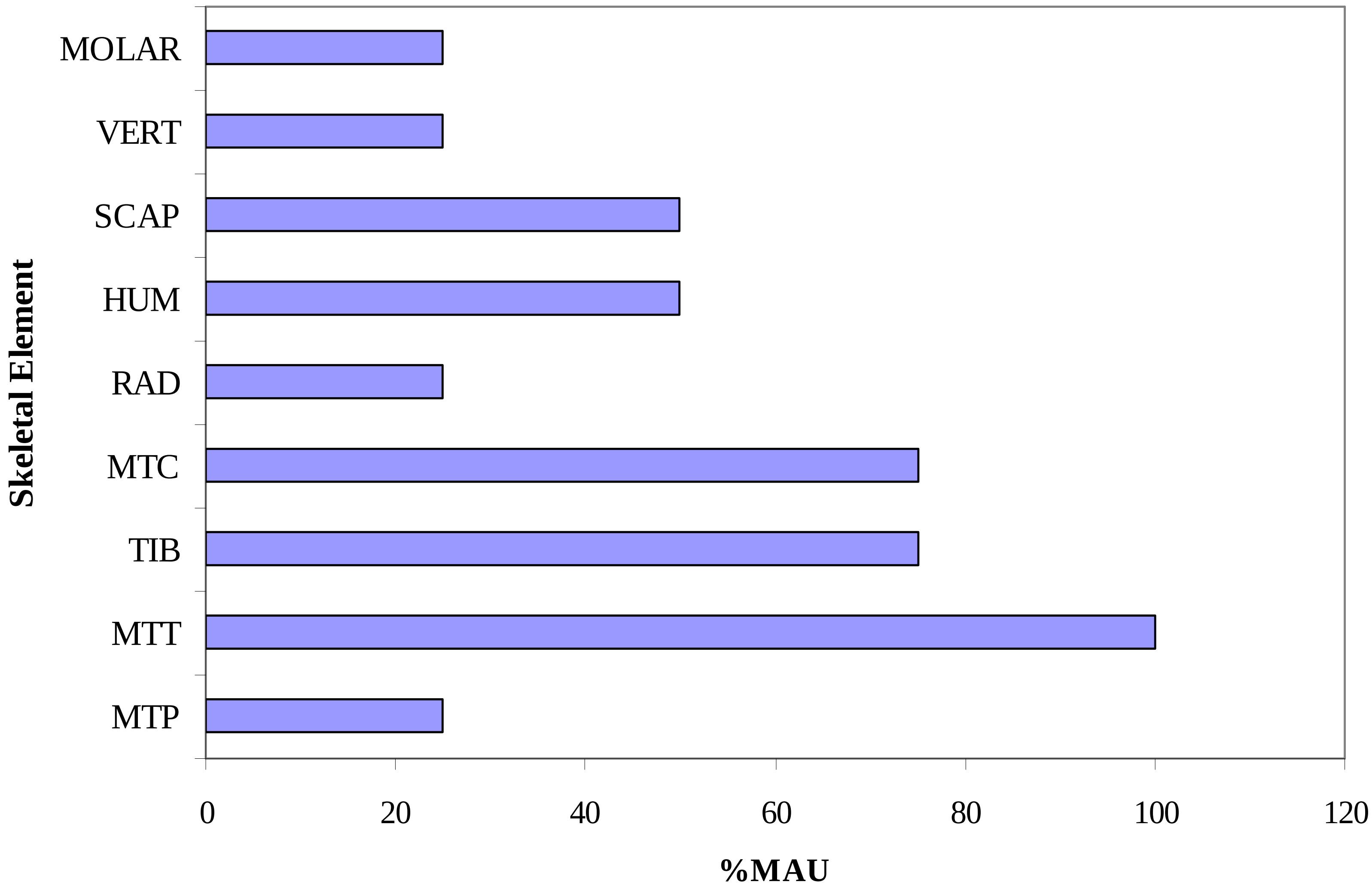


Figure 4.3: Member 6 assemblage Size Class 3-4 bovid %MAU

a left premolar and a left mandible with all teeth present (SE-703 and SE-1050 respectively). A proximal right radius shaft fragment and a right femur (SE-806 and SE-995) also represent *Procavia*. There is one tooth fragment (SE-707) belonging to the Leporidae (*Lepus capensis*), while Hystricidae (*Hystrix africaeaustralis*) is identified from an incisor, an incisor fragment and a molar (SE-994, SE-921 and SE-928 respectively).

## 4.4 Taphonomy

The Member 6 faunal assemblage preserves various types of modifications (Table 4.3). These include modifications from biotic and abiotic agents. Biotic agents such as carnivores and hominids acted on the carcasses soon after death to produce carnivore gnaw marks and stone tool modification marks. Porcupines and small rodents gnaw on dry bones, but they can also gnaw on fresh bones after they have been defleshed by other agents. Other agents of modification, the results of which have been observed in this assemblage, include weathering, post-depositional modification (abrasion, trampling, sediment overburden pressure and soil acid), as well as excavation and preparation modification.

Table 4.3: Member 6 identified bone modifications

| **Modification** | **Number** | **Percentage modification** |
|---|---|---|
| Cutmarks | 6 | 1.29 |
| Hammerstone percussion | 4 | 0.86 |
| Carnivore gnawing | 16 | 3.44 |
| Stomach acid etching | 4 | 0.84 |
| Porcupine gnawing | 25 | 5.37 |
| Small rodent gnawing | 20 | 4.29 |
| Weathering | 377 | 80.90 |
| post-deposition modification | 65 | 13.95 |
| Excavation and preparation modification | 325 | 69.74 |

### 4.4.1 Stone tool modification

Brain (1981) observed stone tool cutmarks on a mandible of *Antidorcas bondi* (SE 690). Following this current analysis, there are now 10 specimens (2.15%, N=465) which show signs of butchery in the form of cutmarks (1.29%) and hammerstone percussion notches (0.86%). Three of the hammerstone percussion-marked specimens also have impact created notches.

### 4.4.2 Mammalian modification

Sixty one specimens (13.12 %) of this assemblage show marks from gnawing by various animals. Carnivore gnawing is observed on 3.44%, while 5.37% and 4.29% are porcupine and small rodent gnawed respectively. Gnawing also occurs in various combinations in this assemblage. A few of the carnivore gnawed bones also have tooth puncture notches and stomach acid etching (three and four bones respectively). In addition, three other specimens are stomach acid etched.

### 4.4.3 Weathering

A total of 377 specimens (80.90%) is weathered in various stages (Table 4.4). The rest of the Member 6 assemblage (19.10%) are teeth and teeth fragment specimens, breccia-covered bones and bone fragments, and therefore their surfaces were either inappropriate or too small and could not be analysed for these weathering stages. Even though there are no entirely fresh bones in the assemblage, weathering occurs mainly in mild stages ( 1, 2, and 3), indicating that the assemblage was not exposed for long periods prior to deposition in the cave. The extent of weathering, coupled with minimal abrasion, indicates initial accumulation of the bones close to the cave or cave entrance.

### 4.4.4 Post-depositional modifications

Sixty five specimens (13.95%) show signs of modification that occurred after deposition, either before, during or after fossilisation. These occur as crushing, resulting in cracked or deformed specimens. Other post-depositional modification also occurs in the form of trampling (1.6%), abrading (0.2%), corrosion (0.7%) and insect modification (0.5%).

### 4.4.5 Excavation and preparation modifications

Nearly three quarters (69.74%) of the assemblage has borne the brunt of excavation and preparation modification. This occurs in the form of breakage, chipping, hacking, slicing and even scratching of specimens. These marks are easily distinguished from the stone tool cut marks and hammerstone percussion marks based on the fresh coloured nature of their surfaces indicating the modern or recent occurrence, lack of breccia matric adhering to the fracture edges as well their broad U-shaped form.

## 4.5 Fracture attribute analysis

### 4.5.1 Fracture surface analysis

Fracture attributes used for this analysis include angle, outline, edge, circumference and breadth/length ratio. Figure 4.4 illustrates the distribution of surface morphologies and circumference completeness (angle, outline, edge and circumference), while Figures 4.5 provides details for breadth/length ratios.

Two hundred and eighty-four ancient fracture surfaces were available for fracture surface analysis. 60% have curved, 21% transverse and 19% intermediate outlines. 52% have oblique angles, 26% intermediate and 21% right angles. 67% of the surfaces examined in this sample are smooth, while 33% are jagged-edge breaks. The greater percentage of curved outlines indicates that most of the bones were broken soon after the animals death, hence the

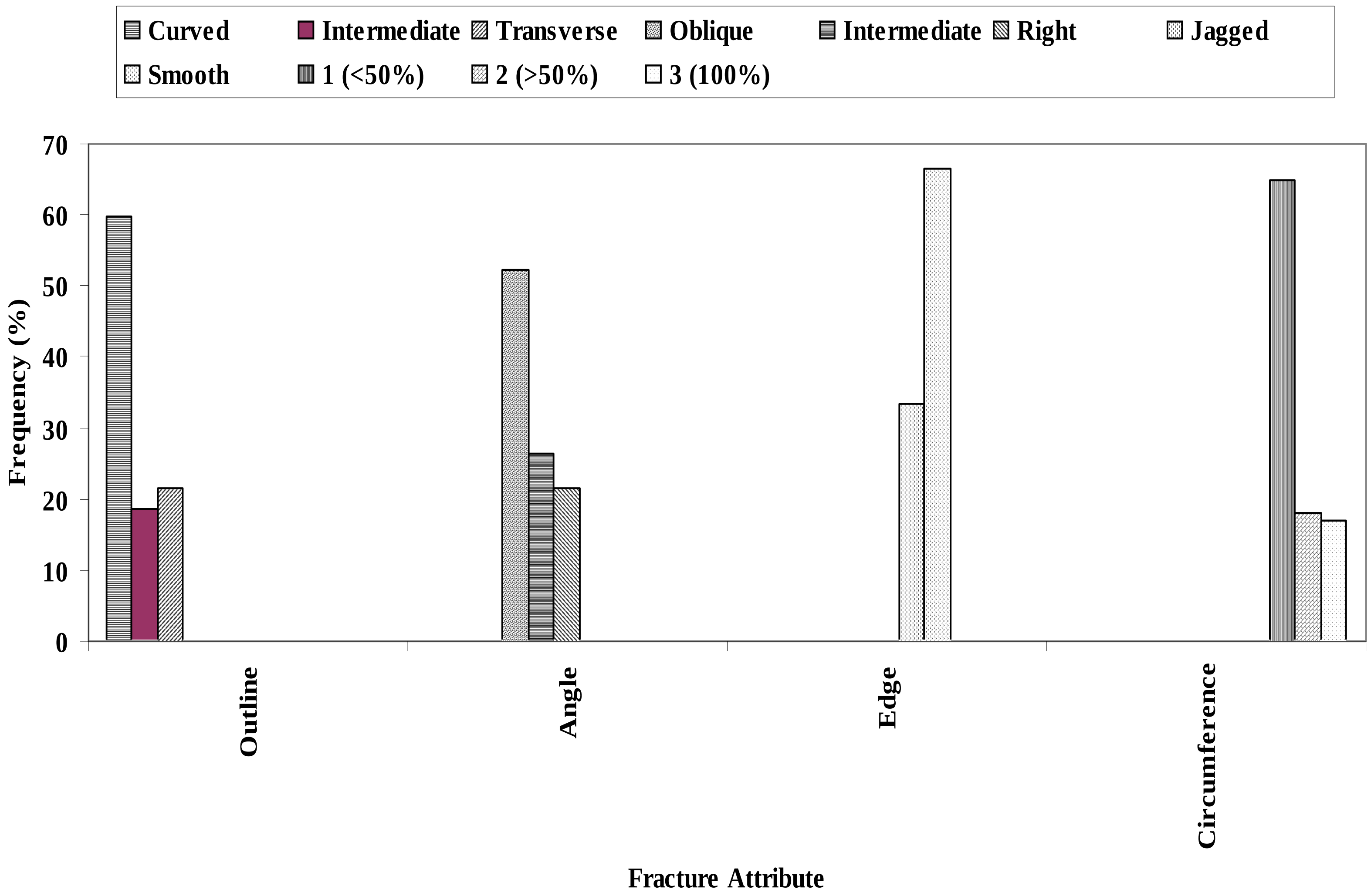


Figure 4.4: Member 6 fauna fracture attributes and circumference completeness frequencies

predominance of green bone breakages.

Table 4.5 provides the absolute fracture attributes for the three French Neolithic sites and Member 6, as well as the Member 6 sample $X^2$ values of the various fracture attributes. $X^2$ comparisons were conducted between Member 6 and the three French Neolithic assemblages to check the hypothesis that the Member 6 assemblage fracture attributes are not significantly different from those of the French Neolithic assemblages (P¡0.05, df=2). The $X^2$ values indicate that Member 6 assemblage fracture attributes are significantly different from the three French Neolithic samples; one of which was predominantly green-bone-broken while two are dry-bone-broken. Member 6 is thus neither similar to the dry-bone-broken assemblages nor the fresh bone broken assemblage French Neolithic samples, indicating possible mixture of green and dry bone breakages in the assemblage. The inconsistency can also be attributed to different sources of bones in the deposit, depositional environments for the French and the member 6 assemblage, sample sizes and post-depositional modification.

### 4.5.2 Circumference analysis

Two hundred sixty nine specimens have been used in circumference completeness analysis in this assemblage. As seen in Figure 4.4, a majority (65%) of the sample has less than 50% circumferences. 18% and 17% of the sample have >50% and 100% circumference respectively. The high frequency of the less than 50% circumference category is consistent with the circumference completeness frequencies expected in fresh-bone-broken assemblages (Villa and Mahieu, 1991). Member 6 is significantly different from the dry broken French Neolithic assemblages by circumference, but it is not significantly different from the green broken sample of Fontebregoua. This similarity implies a green-bone-broken assemblage like that of Fontebregoua.

Table 4.4: Member 6 faunal assemblage weathering stages

| **Weathering Stage** | **Number weathered** | **% weathered** |
|---|---|---|
| **Stage 1** | 52 | 11.66 |
| **Stage 2** | 278 | 59.66 |
| **Stage 3** | 47 | 10.09 |
| **Total** | **377** | **80.90** |

Table 4.5: $X^2$ analysis of Member 6 fauna fracture attributes in comparison to the French Neolithic sites studied by Villa and Mahieu (1991)

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| **Fracture Attributes** | **Sarrians** | **Bezouse** | **Fonterbregoua** | **Member 6** |
|---|---|---|---|---|
| **Fracture Angle** | | | | |
| Oblique | 22 | 27 | 144 | 148 |
| Right | 176 | 174 | 47 | 62 |
| Intermediate | 71 | 52 | 13 | 75 |
| **Total** | **269** | **253** | **204** | **285** |
| $X^2$ | 149 | 140 | 33.3 | |
| **Difference** | significant | significant | significant | |
| **Fracture Outline** | | | | |
| Curved | 106 | 82 | 134 | 170 |
| Transverse | 193 | 144 | 92 | 61 |
| Intermediate | 59 | 61 | 35 | 53 |
| **Total** | **358** | **287** | **261** | **284** |
| $X^2$ | 77.36 | 65.86 | 13.82 | |
| **Difference** | significant | significant | significant | |
| **Circumference** | | | | |
| 1 (100%) | 200 | 60 | 13 | 17 |
| 2 (>50%) | 10 | 0 | 23 | 18 |
| 3 (<50%) | 16 | 33 | 115 | 174 |
| **Total** | **226** | **93** | **151** | **209** |
| $X^2$ | 287.78 | 109.68 | 3.95 | |
| **Difference** | significant | significant | not significant | |

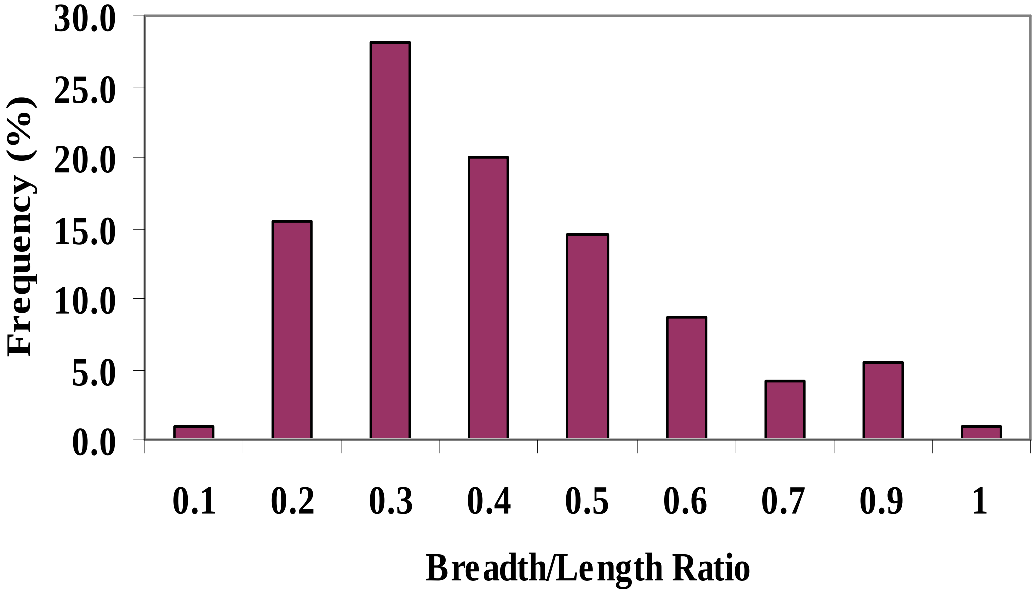


Figure 4.5: Member 6 fauna Breadth/Length ratio distribution

### 4.5.3 Breadth/length ratio

Figure 4.5 shows the frequencies of the breadth/length ratios derived for this faunal assemblage. A total of 220 specimens have been used in the calculation of breadth/length ratio. 87% of these fall in the breadth/length ratio categories between 0.2 and 0.6., indicating a less fragmented collection, similar to that expected from a fresh bone broken assemblage. Carnivore gnawing leaves more bone cylinders as carnivores chew away the articular ends to reach the marrow, while hominid exploitation of bone for marrow leaves mainly splinters (Johnson, 1985). Thus, such less fragmented accumulations indicate assemblages indicate minimal or no hominid exploitation and accumulation of the assemblage.

## 4.6 Discussion

### 4.6.1 Taxa and skeletal part representation

There are mainly open grassland savannah taxa such as *Papio*, *Equus*, *Lepus*, antelopines and alcelaphines. However, water-loving reduncines and Hippopotamidae found in the Lincoln Cave (Reynolds, 2000) are lacking. These species differ from those of Member 5 West, which has more extinct taxa, and indicate recent fauna of open grassland similar to the modern environment.

Several carnivore species of the Hyaenidae and Felidae families are represented, but the larger felids are conspicuously absent, while most of the other carnivore element fragments could not be identified beyond the family level (Tables 4.1 and 4.2). Bovid size classes are well represented by meat-rich skeletal elements of the hind and fore limbs (Figures 4.1, 4.2 and 4.3). The taxa are identified by few skeletal elements and portions of elements, especially Size Classes 1 and 2, but also include compact and grease-rich axial elements and epiphyseal ends of long bones (Table 4.2). This indicates an assemblage not severely ravaged by carnivores, especially hyaenas that are more likely to delete most of such grease-rich parts (Marean, 1991). It is noteworthy, however, that some of the compact bones, long bone epiphyseal ends and long bone shaft fragments have carnivore gnaw marks and stomach acid etching, implying that a part of this assemblage is carnivore-accumulated. The stone tool modification marks indicate that hominids played a part in its modification and accumulation. It is, however, noted that small sample size may have resulted in the non-representation of some taxa, especially the woodland or water-dependent species, due to possible collection biases or absence of deposition.

### 4.6.2 Bone accumulation

This assemblage has been affected by both biotic and abiotic bone assemblage modifiers. The effect of the biotic modifiers such as carnivores, rodents and hominids on the assemblage appears to be limited (Table 4.3), with less than 10% modified by each of the agents. In order to understand the taphonomic history of the fauna, the effects of the possible bone collecting and modifying agents are assessed.

**Biotic accumulators**

*Carnivore accumulation*

This assemblage has a small carnivore sub-assemblage, with only one known bone-accumulating carnivore (hyaena) represented (Table 4.1). Hyaenas are likely to accumulate bones at their denning sites as they bring back carcasses and carcass parts to their dens to feed their cubs (Mills and Mills, 1977; Kruuk, 1972; Brain, 1981; Mills, 1990). In contrast to spotted hyaenas that forage in large competing groups, hunting and transporting carcasses as large as those of Size Class 4 ungulates, brown hyaenas are solitary foragers and hunt small mammals, and they are only capable of transporting small to medium size-bodied animals to their dens (Bunn, 1983b; Lam, 1992; Mills and Mills, 1977). Brown hyaena-accumulated assemblages contain up to 68% chewed bones (Maguire *et al.*, 1980), while spotted hyaena-accumulated assemblages have between 38% and 100% chewed bones (Bunn, 1983b; Lam, 1992; Maguire *et al.*, 1980; Mills and Mills, 1977; Skinner *et al.*, 1986). It has been observed by Cruz-Uribe (1991) and Stiner (1991) that hyaena-accumulated assemblages contain up to 20% carnivore individuals. Some of these remains result from some of the resident hyaenas, especially cubs, dying in the dens, as well as from hyaenas hunting small carnivores to feed their young (Kruuk, 1972; Mills, 1990). Such assemblages can therefore contain juvenile hyaena and small carnivore remains in addition to those of other ungulate prey.

Of the cats, lions are not known to transport and accumulate bones, while leopards and cheetahs transport carcasses to favourite feeding places in trees and on cliffs (Brain, 1981; Marean, 1989; Cavallo and Blumenschine, 1989) as well as to dark cave passages (Simons, 1966). This leads to accumulation of bone assemblages around these areas from their food remains and regurgitation. Cave roof overhangs and trees growing around the Sterkfontein Cave openings would have been suitable for this purpose, leading to the accumulation of bones around the cave entrances, which were later washed or gravitated into the cave.

Small carnivores like jackals are not dominant bone accumulators but may also transport some bone, leading to a minor contribution to bone assemblage formation. Among the carnivore taxa represented in Member 6 is a *Parahyaena brunnea* (brown hyaena) individual. No juvenile hyaena remains or coprolites have been identified in this sample to suggest hyaena denning (Kruuk, 1972; Mills, 1990; Cruz-Uribe, 1991; Klein *et al.*, 1991; Stiner, 1991; Pickering, 2002), but the presence of 3.44% carnivore gnawed bone specimens indicate hyaena, possibly brown hyaena activity in the cave or cave vicinity. The absence of coprolites and juvenile remains, though not supporting a hypothesis that the cave was used as a den by carnivores, does not rule out the possibility that denning took place in this cave, as has been noted by Pickering (2002) for the Member 5 West assemblage. Carnivore voiding at times happens outside the cave, and coprolites may or may not be washed in, while juvenile remains are fragile and could easily be completely destroyed by post-depositional factors. The proportion of gnawed bone in this assemblage is small compared to that recorded for modern carnivore-accumulated assemblages, but it indicates the activity of carnivores around and possibly inside the cave at the time of bone assemblage accumulation. This assemblage has undergone post-depositional modification such as breakage and excavation and preparation modification which obscure or delete carnivore modification. This makes the sample slightly different from the modern accumulations which were studied to establish the ratios of carnivore gnawing in such carnivore-accumulated assemblages.

*Porcupine and small rodent accumulation*

Porcupines accumulate and/or gnaw bones already accumulated by other agents. They are however incapable of climbing up and down the steep walls of vertical shafts and thus will only inhabit fairly horizontal caves and shelters (Pickering, 1999). For example, Pickering has argued for little or no porcupine involvement in the accumulation of the Oldowan Infill faunal assemblage, due to the inferred vertical shaft nature of the cave opening. However, during Member 6 accumulation, the cave is considered to have been largely filled and therefore more accessible to porcupines. Porcupine accumulated assemblages can include their skeletal remains, which may also result from predator accumulation (Mitchell *et al.*, 1965; Pienaar, 1969; Kruuk, 1972), death of denning individuals in the dens, or gravitation of such remains from surface deposits. These researchers determined that leopard-accumulated porcupine remains consist mainly of cranio-dental elements, while porcupine collections resulting from den deaths will include most of the skeleton if other carnivore scavenging is precluded.

Porcupines are represented in this assemblage by three teeth and teeth fragments of at least a single individual. While the three porcupine teeth specimens may have been accumulated through carnivore predation, it is also likely that slope wash led to their accumulation in the cave. Porcupine gnawing occurs on a small proportion (5.37%) of this assemblage, which is much lower than the 22% - 100% incidence of gnawing recorded in porcupine-accumulated assemblages (Maguire *et al.*, 1980; Brain, 1981). Therefore, porcupines were not an important accumulation agent.

Small rodents are not known to collect and accumulate bones, especially of the larger mammals such as those identified in this assemblage, but may bring in small amounts of bones of smaller animals to the cave. Modification marks of such small rodents have also been identified in this sample (4.29%). Despite this, it is unlikely that small rodents accumulated any of the fauna in this assemblage. It is, however, noted that Member 6 has a small sample which has also undergone abiotic post-depositional modification through sediment overburden pressure modification, which may have deleted delicate porcupine post-cranial remains and some porcupine and small rodent-gnawed bones.

*Hominid accumulation*

Apart from hominid bones, the presence of stone tools and stone tool modified bones are some of the foremost indicators of hominid presence. They do not, however, imply hominid accumulation of stone tools and the modified bones, but only indicate hominid activity in the vicinity of a site. No hominid bones and artefacts have been recovered from Member 6 except for one foreign unmodified stone, which Robinson (1962) noted as stolen before it could be lifted from the site. Thus, the only indication of hominid presence and activity in the Sterkfontein valley during Member 6 times is stone tool-modified bone. While these stone tool modifications are signs of hominid exploitation of animal resources in the vicinity of the cave, they do not show to what extent the hominids were involved in the accumulation of Member 6 bone collection.

There is 2.15% stone tool modification in Member 6, putting it within the range for hominid modification proportions for Holocene assemblages (Gifford *et al.*, 1980; Crader, 1981) and for Plio-Pliestocene fossil archaeological assemblages at FxJj 50 at Koobi Fora, Kenya and FLK Zinjanthropus site at Olduvai Gorge, Tanzania (Bunn *et al.*, 1980; Bunn, 1983a), as well as for simulated hominid accumulated samples from hunter/gatherer-accumulated bone assemblages bearing tool modification marks (Bunn, 1983a; Bunn *et al.*, 1988). Modifications in this assemblage, however, only show that hominids interacted with the bones, but not that hominids necessarily accumulated the majority of bones in the cave.

The skeletal elements with modifications and the location of butchery marks on specific elements have been used to identify the role of hominids in the acquisition of animal food resources and bone accumulation (Binford, 1981; Bunn, 1983a; Pickering *et al.*, 2004). There are more tooth marks on shafts than there are percussion marks on shafts in Member 6, with only a few tooth-marked epiphyses. In addition, some shafts, some of which are also tooth-marked, have stomach acid etching, indicating possible post-hominid accumulation carnivore ravaging. This is an indication that the carcasses from which the bones in the Member 6 deposit were recovered were probably exploited by carnivores after the incidents of the stone tool marks on them. This is evidenced by the identification of carnivore tooth marks on epiphyseal ends and percussion marks on midshafts. It is, however, noted that this sample is small and some bones with more of each modification may not have been recovered or deposited altogether. Such a limited deposit may have only captured a small component of the original assemblage. The modifications in this assemblage and the skeletal element representation as well as location of modifications on elements, however, only show that hominids and carnivores interacted with the bones, but not that they accumulated the bones in the cave. Bones modified by these agents (especially hominids) in the landscape may have been deposited in the cave by other agents, e.g., slopewash and gravitation. The space left under the cave roof for the deposition of Member 6 after the deposition of Member 5 was too low for hominid occupation. Carnivores could more easily have accessed such a low cave entrance, with bones from their food remains being accumulated therein. These remains were then mixed with fauna modified by other agents, such as hominids.

### Abiotic accumulators

*Death trap*

Death trap assemblages have been recorded in earlier deposits at Sterkfontein, namely, in the Member 2 deposits and in the Oldowan Infill (Pickering, 1999; Pickering *et al.*, 2004). These earlier death trap assemblages formed as a result of animals accidentally falling down concealed avens. Due to the vertical shaft-like nature of these cave openings, marks on bones indicating scavenging by carnivores on death trap carcasses are rare or absent in the fauna. Scavenging attempts by carnivores sometimes result in the inclusion of their own carcasses in such deposits where they cannot climb out of the shaft (Lyman, 1994). The few marks that are present were likely made by carnivores above the ground before those marked bones were washed into the shaft.

In the absence of scavenging, death trap assemblage bones and body parts are preserved as mostly complete and/or articulated, unless sediment movement or compaction causes post-depositional breakage, disarticulation or destruction of the more fragile elements. Because more agile taxa such as primates and carnivores may become trapped after climbing down avens, such animal classes may be abundantly represented in the assemblages, reflecting the presence of these species on the landscape (Pickering, 1999; Pickering *et al.*, 2004). It has also been argued that such agile animals are more likely to fall to their death down these shafts (Lyman, 1994; Pickering, 1999; Pickering *et al.*, 2004). The Member 6 faunal assemblage is small and has only a few carnivore and primate individuals. The skeletal element representation is also very poor with mostly compact and resistant elements being present. These skeletal elements and the associated modifications make it unlikely that the bones in the Member 6 assemblage were accumulated as whole carcasses. Moreover, a death trap situation is unlikely as this deposit was laid right under a low roof.

*Fluvial transport*

Indications of fluvial transport are preserved in faunal assemblages as winnowed skeletal elements and abraded bones. Fluvial transport associated with skeletal element winnowing has been studied by Voorhies (1969) and Behrensmeyer (1975). According to these studies, structural densities, size and shape of bones influence the possibility of their transport. A summary of the different body parts found at different stages of fluvial transport has been provided by Lyman (1994). This summary shows that light skeletal elements and those with lesser volumes such as ribs, vertebrae and girdle bones are transported further by water than heavier and high volume ones such as long bones, crania and mandibles. Fluvial transported assemblages will thus contain fewer of the heavier elements and more of the lighter elements and vise versa for the lag deposits from fluvial winnowed remains. The skeletal element representation of each taxon in this assemblage is poor, but it appears that most Voorhies groups are represented, leaving other causes of biases such as carnivore predation and post-depositional destruction as the possible causes of poor skeletal element representation.

Some abraded and trampled specimens have been identified in this assemblage. Abrasion marks can result from fluvial transport, movements in sediments and trampling. Those in this assemblage are more likely attributed to movement in sediments, as there is no direct evidence of fluvial transport. The minimal amount of abrasion in this assemblage indicates that the bones have not been transported long distances prior to deposition in the cave, and that movement above the surface of the cave and within the cave was also minimal. From such marks, however, it is not possible to differentiate abrasion from colluvial versus fluvial transport. Both would have involved sediments as the major abrasive agent, producing similar abrasion results on bones, if all other factors determining extent of abrasion defined by Shipman and Rose (1988) and Lyman (1994) are held constant.

### 4.6.3 Post-depositional modification and destruction

Post-depositional destruction and/or modification have been observed in the Member 6 assemblage to include trampling, crushing, surface erosion and plastic deformation. The assemblage has a poor representation of structurally less dense and fragile axial elements such as ribs and vertebrae. This may have resulted from post-depositional destruction or other fragile bone deleting processes such as carnivore gnawing. However, extreme forms of post-depositional modification evident in plastic deformation of specimens are not recorded in this assemblage, leaving carnivore gnawing and collection as possible eliminators of some of the fragile elements from this assemblage. Hominid processing leaves little meat and probably no marrow resources to be exploited by carnivores, resulting in carnivores relying on the fragile, but grease-rich epiphyses, ribs and vertebrae for their feeding, in effect deleting these elements and element portions from the assemblage. Thus, irregular spongy and non-identifiable bone fragments such as these are accumulated under such circumstances circumstances. The effect of possible sampling bias is apparent in this assemblage in the seemingly selected nature of the specimens that were recovered and that were available for this study. The Member 6 assemblage, though small, has a very high percentage of identifiable bones and bone fragments, including those of small mammals, compared to non-identifiable specimens.

## 4.7 Conclusions

The previous study of Member 6 fauna by Brain (1981) indicated possible porcupine and carnivore accumulation and noted some possible hominid involvement as a bovid mandible showed cutmarks made by tools. He also noted that the high percentage of bone flakes was similar to that of Stone Age human food remains. With the percentages of carnivore and stone tool modifications discussed above, it is clear that hominids modified the assemblage, with minor modification of the resultant assemblage by carnivores and rodents. These modifications not only imply an important role of hominids in the accumulation of the assemblage, but also a role of other biotic accumulators in the catchment of the cave. These modifications, together with the faunal taxa represented, suggest the contribution to the accumulation of the assemblage by all these agents. Slopewash of some of bones, including those modified by other agents in the vicinity of the cave, is demonstrated by the presence and intensity of abrasion marks; even though minimal, they indicate some movement of material.

This sample is small but may be a good representation of the material in the limited area under the dolomite roof in which it was deposited. With this in mind, it is possible that the fauna it contains provides a good representation of the taxa in the cave environment at the time. Stratigraphically, this assemblage seems to directly overlie the Member 5 West capping flowstone, but it was deposited relatively much later than the Member 5 West as extinct forms are absent indicating a time gap between the Acheulean infills and this younger deposit. The relatively thick Member 5 West capping flowstone, which is beyond the range of Thorium-Uranium dating represents the time when the cave was closed to infilling. Thus the Member 6 deposit is thus considerably younger than the Member 5 West Acheulean of about 1.6 mya, but it is older than the MSA breccia that filled the eroded area between Member 5 West and East and entered the Lincoln Cave. As Lincoln Cave North has produced a maximum date of 252,000 ± 37,000 years, the Member 6 deposit should be at least that age or older. The absence of stone tools in this deposit is attributed to the limited deposition of sediment, which is in turn related to the small available space under the dolomite roof. Incomplete excavation of the deposit could also be a factor.

# Chapter 5

# Post-Member 6 Infill Fauna

## 5.1 Introduction

In this chapter, I provide results of the analysis of fauna from the Post-Member 6 Infill. Finds from earlier and present excavations have been combined for this analysis, providing a larger sample of fauna from the deposit. The excavated sample includes material from 35 squares, including previously analysed faunal material from the L63 square (Appendices A.1 and A.2). This analysis provides a more complete depiction of the faunal assemblage of this deposit. Results of analysis of Post-Member 6 Infill lithic artefacts from these squares is provided in Chapter seven.

## 5.2 Taxonomy

Tables 5.1 and 5.2 provide a summary of taxa identified to family, subfamily and/or tribe, genus and species. A complete list of identified specimens for this assemblage is available in Appendix C.1.

Three primate species, *Homo sapiens*, *Cercopithecus aethiops* and *Papio ursinus* are identified in the Post-Member 6 Infill assemblage by dental and cranial remains. Both *Cercopithecus* and *Papio* are represented by post-cranial remains in addition to the cranio-dental remains.

Carnivores have the highest number of taxa in the assemblage. Some of the taxa identified here have also previously been identified by Turner (1997), but

Table 5.1: Post-Member 6 fauna mammalian taxa representation

| **Order** | **Family** | **Subfamily/Tribe** | **Genus/Species** | **Common Name** |
|---|---|---|---|---|
| Primate | Hominidae | | *Homo sapiens* | *Homo sapiens* |
| | Cercopithecidae | Cercopithecinae | *Papio ursinus* | Baboon |
| | | | *Cercopithecus aethiops* | Vervet monkey |
| Carnivora | Felidae | | *Acinonyx jubatus* | Cheetah |
| | | | *Panthera leo* | Lion |
| | | | *Panthera pardus* | Leopard |
| | | | *Caracal caracal* | Caracal |
| | | | *Felis. cf lybica* | African wild cat |
| | | | *Leptailurus serval* | Serval cat |
| | Hyaenidae | Hyaeninae | *Crocuta crocuta* | Spotted hyaena |
| | | | *Parahyaena brunnea* | Brown hyaena |
| | | | *Proteles cristatus* | Aardwolf |
| | Canidae | Caninae | *Canis mesomelas* | Black-backed jackal |
| | | | indet. canis | |
| | | | *Vulpes chama* | Cape fox |
| | | Otocyoninae | *Otocyon megalotis* | Bat-eared fox |
| | | Simocyoninae | *Lycaon pictus* | Wild dog |
| | | | indet. canid | |
| | | | | indet. large carnivore |
| | | | | indet. medium carnivore |
| | | | | indet small carnivore |
| | Viverridae | Herpestinae | *Herpestes ichneumon* | Large grey mongoose |
| | | | cf Herpestes | indet. Mongoose |
| | | Viverrinae | *Genetta genetta* | Genet |
| | | Civettictis | *Civettictis civetta* | Civet |
| | | | indet. Viverride | |
| Perissodactyla | Equidae | Equinae | *Equus* sp | Zebra |

Table 5.2: Taxa represented in the Post-Member 6 Infill faunal assemblage *Continued*

| **Order** | **Family** | **Subfamily/Tribe** | **Genus/Species** | **Common Name** |
|---|---|---|---|---|
| Artiodactyla | Suidae | | *Potamochoerus porcus* | Bushpig |
| | | | *Phacochoerus aethiopicus* | Warthog |
| | Bovidae | Hippotraginae | | |
| | | Hippotragini | *Hippotragus equinus* | Roan antelope |
| | | Aepycerotinae | *Aepyceros melampus* | Impala |
| | | Aepycerotini | | |
| | | Antilopinae | *Antidorcas marsupialis* | Springbok |
| | | Antilopini | | |
| | | Neotragini | *Ourebia ourebi* | Oribi |
| | | | *Raphicerus* sp. | Grysbok |
| | | Caprinae | *Ammotragus lervia* sp. | Barbary sheep |
| | | Alcelaphinae | *Connochaetes* sp. | Wildebeest |
| | | Connochaetini | | |
| | | Alcelaphini | *Damaliscus lunatus* | Tsessebe |
| | | | *Damaliscus dorcas* | Blesbok |
| | | Reduncinae | *Kobus ellipsiprymnus* | Waterbuck |
| | | Reduncini | *Kobus leche* | Lechwe |
| | | | *Redunca arundinum* | Common reedbuck |
| | | | *Redunca fulvorufula* | Mountain reedbuck |
| | | | *Redunca* sp. | |
| | | Cephalophinae | *Cephalophus* sp. | Duiker |
| | | Cephalophini | | |
| Hyracoidea | Procaviidae | | *Procavia capensis* | Hyrax |
| Rodentia | Hystricidae | | *Hystrix africaeaustralis* | Porcupine |
| | Pedetidae | | *Pedetes capensis* | Springhare |
| Lagomorpha | Leporidae | | *Lepus capensis* | Cape hare |

this study has provided a larger sample and the following carnivore taxa list is now provided. The Felidae are represented by six species *(Acinonyx jubatus, Panthera leo, Panthera pardus, Caracal caracal, Leptailurus serval* and *Felis* cf. *lybica*). Three species each have been identified for the hyaenids, the canids and the viverrids.

The Artiodactyla are represented by the Suidae and the Bovidae. The Suidae *Potamochoerus porcus* and *Phacochoerus aethiopicus* have been identified. Size Class 1 bovids present are *Raphicerus, Oreotragus, Ourebia* and *Cephalophus*. Size Class 2 bovids include *Damaliscus, Redunca, Aepyceros, Ammotragus* and *Antidorcas*. Size Class 3 bovids are *Hippotragus, Connochaetes* and two *Kobus* species. All these species assignments are based on cranio-dental remains. Bovid post-cranial remains were assigned size classes alone.

An equid *Equus* sp. is present in the assemblage. A hyrax, *Procavia capensis*, porcupine *Hystrix africaeaustralis* and hare *Lepus capensis*, as well as springhare *Pedetes capensis* are also present.

## 5.3 Skeletal part and taxa representation

There are 14,025 specimens in this assemblage, 27.15% (N=3808) of which are identifiable to skeletal element and family, and/or size class. At least 124 individuals are present in the Post-Member 6 Infill assemblage. Tables 5.3, 5.4, 5.5, 5.6, 5.7 and 5.8 give details of the element representation by different taxa.

### 5.3.1 Primates

There is a total of 29 specimens belonging to three genera, *Homo*, *Cercopithecus* and *Papio* (Table 5.3).

*Homo*

A single specimen (StW 585), a right upper canine, represents a hominid individual, perhaps archaic *Homo sapiens* identified by Kuman and Clarke (2000),

Table 5.3: Post-Member 6 Infill primate representation by skeletal element.

| Element | *Homo* NISP/MNE/cMNI | *Papio* NISP/MNE/cMNI | *Cercopithecus* NISP/MNE/cMNI |
|---|---|---|---|
| 1/2 MAND | | 3/3/3 | 1/1/1 |
| CRAN | | 1/1/1 | |
| $I^1$ | | 1/1/1 | |
| $I_1$ | | 1/1/1 | |
| $^{C}$ | 1/1/1 | 1/1/1 | 1/1/1 |
| $P^4$ | | 2/2/2 | |
| $M^1$ | | | 1/1/1 |
| $M_1$ | | 2/2/1 | |
| $M_2$ | | 1/1/1 | |
| $M_3$ | | | 1/1/1 |
| CERV | | 1/1/1 | |
| THOR | | | 1/1/1 |
| HUM | | 1/1/1 | 1/1/1 |
| ULN | | | 2/2/2 |
| 1/2 PEL | | | 1/1/1 |
| TIB | | | 3/3/3 |
| CALC | | 3/3/3 | |
| ASTRAG | | 1/1/1 | |

Reynolds (2000) and Reynolds *et al.* (2007).

*Papio*

Eighteen specimens of at least three individuals have been identified as *Papio* (Table 5.3, column 3). These identifications are based on a left mandible fragment with the first and second molars in place (SWP-2145), as well as an isolated fourth premolar crown (SWP-2146), seemingly of a young adult, in addition to a mandibular process of a smaller individual. Three calcanei, two left and a right, all of different sizes, may also belong to the three individuals already identified from the cranial remains.

*Cercopithecus*

Eleven specimens have been identified as *Cercopithecus*, belonging to at least three individuals based on three tibia shaft fragments. Two of these fragments belong to two tibiae, a right and a left, deriving from two adult individuals differentiated by size and state of epiphyseal fusion. The third tibia derives from a juvenile individual. *Cercopithecus* is also represented by other elements, which may derive from the same individuals identified from the tibiae (Table 5.3).

### 5.3.2 Carnivora

At least fourteen carnivore genera of four families (Felidae, Hyaenidae, Canidae and Viverridae) have been identified in the Post-Member 6 Infill faunal assemblage (Table 5.1). Tables 5.4, 5.5, 5.6 and 5.7 provide details of carnivore element representation by taxa. A complete list of identified carnivore specimens is available in Appendix C.1.

*Felidae*

The cats are represented by the genera *Acinonyx*, *Panthera* (two species), *Caracal* and *Felis*. One indeterminate felid has also been identified.

Seven lion (*Panthera leo)* specimens of at least two individuals have been identified. The MNI is based on a left $M_1$ and a left $M_1$ crown (Table 5.4). The additional specimens, including the navicular cuboid identified by Turner (1997) do not raise the MNI of the lion as they could not be differentiated by size or age from the teeth specimens identified (Tables 5.4 and 5.6). Five leopard (*Panthera pardus*) specimens of at least one individual have been identified, based on the dental remains - a left $I_3$ and a right $P_3$, that could not be separated by size or age. The radii specimens belonging to two elements of a single individual do not raise this MNI. The cheetah, *Acinonyx jubatus*, is identified from a single specimen, a left canine.

Two caracal (*Caracal caracal*) individuals are represented by three specimens: two right lower canines and a $P_3$. The premolar may belong to any of the individuals represented by the identified right canines. Five African wild cat (*Felis* cf *lybica*) specimens with an MNI of 2 are present. These include: a right capitate, a right distal humerus, a left hind foot (with all the metatarsals in articulation), a mandible fragment with the $P_3$ and $M_1$ and an isolated $I^1$.

*Hyaenidae*

The Hyaenids are represented by 17 specimens. Seven specimens are of *Parahyaena*

Table 5.4: Post-Member 6 Infill carnivore representation by cranio-dental remains (NSIP/MNE/cMNI).

| Element | *A. jubatus* | *P. leo* | *P. pardus* | *C. crocuta* | *P.brunnea* | *P. cristatus* | *L. pictus* | *C. mesomelas* | *V. chama* | *C. caracal* |
|---|---|---|---|---|---|---|---|---|---|---|
| CRAN | | | | | 2/2/2 | 1/1/1 | | 1/1/1 | | |
| 1/2MAND | | | | | | 2/2/2 | | | | |
| $I_1$ | | | | | | | | 1/1/1 | | |
| $I_2$ | | | 1/1/1 | | | | | | | |
| C | | | 1/1/1 | | | | | | | |
| C | 1/1/1 | | | 1/1/1 | | | 1/1/1 | 1/1/1 | 2/2/2 | 2/2/2 |
| *Dp* | | | | | 1/1/1 | | 1/1/1 | | | |
| *Dp* | | | | | 1/1/1 | | | | | |
| $Dp_2$ | | | | 1/1/1 | | | | | | |
| $Dp^4$ | | | | 1/1/1 | | | | | | |
| $P^1$ | | | | | | 1/1/1 | | | | |
| $P^2$ | | | | | | | | 2/2/2 | | |
| $P_2$ | | | | | 1/1/1 | | | | | |
| $P^3$ | | | | | | | | 4/4/4 | | |
| $P_3$ | | | 1/1/1 | 1/1/1 | | | | | | 1/1/1 |
| $P^4$ | | | | | | | | 1/1/1 | | |
| $M^1$ | | | | | | | | 1/1/1 | | |
| $M_1$ | | 2/2/2 | | 1/1/1 | | 1/1/1 | 2/2/2 | | | |
| $M_2$ | | | | | | | | 1/1/1 | | |
| *P* | | | | | | | | 1/1/1 | | |

Table 5.5: Carnivore representation by cranio-dental remains (NSIP/MNE/cMNI).

| Element | *F.lybica* | *C. civetta* | *G. genetta* | indet. Canid | indet small Felid | indet small Carnivore | indet Med Carnivore | Indet. Viverrid |
|---|---|---|---|---|---|---|---|---|
| CRAN | | | | 1/1/1 | | | | |
| 1/2MAND | 1/1/1 | 1/1/1 | 1/1/1 | | 1/1/1 | | 2/2/2 | |
| $I^1$ | 1/1/1 | | | | | | | |
| $I_3$ | | | | | 1/1/1 | | | |
| C | | | | | /1/1 | | 3/3/3 | 3/3/3 |
| $P^1$ | | | | | | | | 1/1/1 |
| $P_1$ | | | | | | 1/1/1 | | |
| $P^3$ | | | | | | 1/1/1 | | |
| $P_4$ | | | | | | | 1/1/1 | |
| P | | | | | | | 1/1/1 | |
| $M^1$ | | | | 1/1/1 | | | 1/1/1 | |
| $M_1$ | 1/1/1 | | | | | | | |
| $_P$ | | | | 1/1/1 | | | | |
| TOOTH | | | | | | | 2/2/2 | |

*bruunea*, two of which (a left $P_2$ and a left $M_1$) are of at least one adult individual. Another three adults are represented by two half mandibles and three specimens (lower right C. A lower right DP and a left upper DP) indicate at least a juvenile individual. The listed specimens represent at least three *Parahyaena brunnea* individuals. Seven specimens, four adult (left $P_3$, a right second metacarpal, a right fourth metacarpal and distal metapodial) and three juvenile (a right $DP_2$, $DP_4$ and an upper canine) come from at least 2 *Crocuta crocuta* individuals. At least one juvenile indeterminate Hyaenid individual is also present, as shown by six specimens consisting of deciduous teeth.

Four specimens (a cranium with some teeth and teeth roots; see Figure 5.1, a complete right mandible with teeth, a right mandible fragment and a left $P^1$), belong to an aardwolf *(Proteles cristatus)*, with an MNI of 3. The MNI is based on the differences in size of both mandibles relative to the cranium which is relatively larger.

Figure 5.1: *Proteles* cranium from the Post-Member 6 Infill. Photo by courtesy of R. J. Clarke.

*Canidae*

There are four Canid genera from three subfamilies. These include *Canis*

Table 5.6: Carnivore representation by post-cranial remains in the Post-Member 6 Infill assemblage (NISP/MNE/cMNI).

| Element | *P. leo* | *P. pardus* | *C. crocuta* | *P. brunnea* | *C.mesomelas* | *V. chama* |
|---|---|---|---|---|---|---|
| ATLAS | | | | | 1/1/1 | |
| CERV | | | | | 1/1/1 | |
| HUM | 1/1/1 | | | | | |
| RAD | | 3/2/1 | | | 1/1/1 | |
| MCP II | | | | 1/1/1 | | |
| MCP V | 1/1/1 | | | | | |
| FEM | 1/1/1 | | | | 1/1/1 | |
| TIB | | | | | | 1/1/1 |
| CALC | | | | | | 1/1/1 |
| ASTRAG | | | | | 1/1/1 | |
| NAV | 1/1/1 | | | | | |
| MTT III | | | | | 1/1/1 | |
| MTT IV | | | 1/1/1 | | | |
| MTP | | | 1/1/1 | | | |
| PHAL II | 1/1/1 | | | | | |

and *Vulpes* for the Caninae, *Otocyon* for the Otocyoninae and *Lycaon* for the Symocyoninae. At least three black-backed jackal *Canis mesomelas* individuals are indicated from 21 specimens. One sub-adult individual is identified from three specimens, a left $M_1$ fragment, a left $P^3$ and a right $P^2$. Two adult individuals are identified on the basis of two upper right $P^3$s. Ten specimens, all of which are post-cranial remains, belong to an indeterminate *Canis* with an MNI of at least one.

There are four specimens including an atlas, a right calcaneum, a right distal tibia fragment and a lower left canine of at least two *Vulpes chama* (Cape fox) individuals. The wild dog (*Lycaon pictus*) is identified from three specimens with an MNI of two. The individuals represented include a juvenile individual identified from a deciduous premolar and an adult represented by a lower left canine and a $M_1$. Another sixteen specimens represent at least two other indeterminate canid individuals.

*Viverridae*

Nine specimens have been identified as viverrids from two subfamilies (*Herpestinae* and *Viverridae*) and three genera (*Herpestes*, *Genetta* and *Civettictis*). There is also one indeterminate viverrid.

A single *Herpestes ichneumon* (large grey mongoose) individual is identified from a right ilium fragment, while a right upper canine identified by Turner (1997) represents an indeterminate *Herpestes* sp. individual. A genet *Genetta genetta* individual is from a right mandible fragment (BP/3/34648). One civet *Civettictis civetta* is represented by a right mandible fragment (BP/3/17891). Four specimens (two canines, a right third metatarsal and a first phalanx) have been identified as viverrids indet.

### 5.3.3 Perissodactyla

*Equus*

There are 88 equid specimens in this assemblage, with an MNI of at least nine. These MNI values are based on four left $M^3$ and three sub-adult right $M^3$. Another two juvenile individuals are indicated by two left deciduous upper third premolars. Equids in this assemblage are well accounted for by dental remains (65 specimens), with nearly all equid tooth classes (incisors, canines, premolars and molars) being identified. Twenty three post-cranial elements have been recovered (Tables 5.8 and 5.9).

### 5.3.4 Artiodactyla

The Artiodactyla identified in the assemblage include two genera of the Suidae and eleven genera of the Bovidae (Tables 5.1).

*Suidae*

Two suid individuals are identified from three tooth specimens: a single individual of *P. porcus* is identified based on two dental specimens, an $I_1$ and a right $M_1$, while *P. aethiopicus* is identified from a maxilla fragment.

*Bovidae*

The bovids in this assemblage are indicated by a total of 3,463 specimens. One

Table 5.7: Carnivore representation by post-cranial remains (NISP/MNE/cMNI).

| Element | *F.lybica* | *H. icheumon* | indet. Canis | indet. Canid | indet. Felid | indet small Carnivore | indet Medium Carnivore | Indet. Viverrid |
|---|---|---|---|---|---|---|---|---|
| ATLAS | | | | | | 1/1/1 | | |
| AXIS | | | 1/1/1 | | | | | |
| THOR | | | | | | 1/1/1 | | |
| CAUD | | | | | | 3/1/1 | | |
| VERT | | | | | | | 1/1/1 | |
| 1/2PEL | | 1/1/1 | | | | | | |
| RIB | | | | | | 2/2/2 | 2/2/2 | |
| SCAP | | | 1/1/1 | | | | | |
| HUM | 1/1/1 | | | | 1/1/1 | | | |
| RAD | | | 1/1/1 | 1/1/1 | | 1/1/1 | | |
| ULN | | | | 1/1/1 | | 1/1/1 | | |
| CARP | 1/1/1 | | | | | | | |
| FOOT | 1/1/1 | | | | | | | |
| MCP II | | | | | 1/1/1 | | | |
| MTC II | | | 1/1/1 | 1/1/1 | | | | |
| MPC | | | | | | 3/3/1 | | |
| FEM | | | | | | 1/1/1 | | |
| TIB | | | | 4/4/2 | | | | |
| MTT II | | | | | | | 1/1/1 | |
| MTT III | | | 4/2/2 | | | | | 1/1/1 |
| MTT IV | | | | | | 1/1/1 | | |
| MTT | | | | | | 1/1/1 | | |
| MTP | | | | | 1/1/1 | 1/1/1 | 2/2/2 | |
| PHAL I | | | 1/1/1 | 4/4/2 | 1/1/1 | | | |
| PHAL II | | | | | 1/1/1 | | 1/1/1 | |

hundred and forty two specimens are identified to skeletal element, tribe, genus and species, while 3,321 specimens are identified to long bone shaft fragment and to mammalian size class. Tables 5.1, 5.8 and 5.9 provide details of bovid taxa and skeletal elements represented by size class. Details of Percentage Minimum Number of Animal Units (%MAU) are provided in Figures 5.3, 5.4 and 5.5. A complete listing of bovid representation by specimens is available in Appendix C.1.

Five hundred and five specimens of Size Class 1 are identified, a majority (>80%) of which are post-cranial remains. Two thousand, four hundred fourteen Size Class 2 specimens have been identified in the Post-Member 6 Infill assemblage. Size Class 2 is also best represented by post-cranial material (>90%), consisting mainly of the upper hind and fore limbs. Size Class 2 foot bones are better represented than cranio-dental remains. Size Classes 3-4 have been identified from 412 specimens, a majority of which is also post-cranial remains. The upper fore and hind limbs are also the regions that best represent Size Classes 3-4. Elements of the appendicular skeleton, particularly the vertebrae, are moderately represented in all the three size classes.

The taxa *Ourebi*, *Raphicerus* and *Cephalophus* represent Size Class 1 bovids in this assemblage. The *Ourebi* is identified from a single maxilla fragment with $P^3$ to $M^2$. A right mandible fragment with $M_1$ and $M_2$, a right maxilla fragment with all molars and a left maxilla fragment with $P^4$ and $M^1$ represent *Cephalophus*, with an MNI of 3. The *Raphicerus* has an MNI of 2 identified on the basis of a left $M_3$ and a mandible with premolar roots and all molars, as well as a right maxilla fragment with $M^1$ and $M^2$.

Size Class 2 bovids identified in this assemblage include the taxa *Antidorcas, Aepyceros, Ammotragus* and *Redunca.* Springbok (*Antidorcas*) was identified from 56 teeth and cranial specimens belonging to at least four individuals identified from four left first incisors and four left $M_2$. Three impala (*Aepyceros melampus*) individuals are indicated by six specimens: three right $M_3$, two $M^2$ (a left and a right), and a right $M^3$. A caprine individual similar to the barbary sheep (*Ammotragus lervia*) is represented by a pair of contiguous

Table 5.8: Post-Member 6 Infill Bovid and Equid cranio-dental skeletal part representation.

| Skeletal Part | Size Class 1 NISP/MNE / cMNI | Size Class 2 NISP/MNE / cMNI | Size Class 3 NISP/MNE / cMNI | Equid NISP/MNE / cMNI |
|---|---|---|---|---|
| HORN | 4/4/4 | 11/11/8 | 5/5/5 | |
| CRAN | 10/4/4 | 8/8/7 | 3/3/3 | |
| 1/2 MAX | 4/4/4 | 16/16/14 | 1/1/1 | 1/1/1 |
| 1/2 MAND | 21/17/12 | 41/41/23 | 2/2/2 | 1/1/1 |
| $I^1$ | | 14/14/11 | | 3/3/3 |
| $I_1$ | 1/1/1 | | 5/5/5 | 1/1/1 |
| $I_2$ | 1/1/1 | 8/8/7 | | |
| $I_3$ | | 4/4/3 | | |
| $P^2$ | 1/1/1 | 3/3/3 | | 6/6/5 |
| $P_2$ | 1/1/1 | 4/4/3 | | 2/2/1 |
| $P^3$ | 1/1/1 | 4/4/3 | | 4/4/4 |
| $P_3$ | 1/1/1 | 5/5/5 | | 4/4/4 |
| $P^4$ | 1/1/1 | 5/5/5 | 1/1/ | 1/1/1 |
| $P_4$ | 2/2/2 | 8/8/8 | | |
| $M^1$ | 3/3/3 | 11/11/11 | 1/1/1 | 4/4/3 |
| $M_1$ | 1/1/1 | 7/7/7 | | |
| $M^2$ | 2/2/2 | 8/8/8 | 2/2/2 | 5/5/5 |
| $M_2$ | | 25/25/16 | | 3/3/3 |
| $M^3$ | 1/1/1 | 10/10/9 | 3/3/3 | 8/8/7 |
| $M_3$ | 1/1/1 | 20/20/17 | 1/1/1 | 6/5/5 |
| $DP^2$ | | 7/7/7 | | |
| $DP_2$ | | 3/3/3 | | |
| $DP^3$ | | 4/4/2 | | |
| $DP_3$ | | 1/1/1 | | |
| $DP^4$ | | 4/4/4 | 2/2/2 | |
| M | 1/1/1 | | | |
| TOOTH | 6/6/6 | | | |

Table 5.9: Bovid and Equid post-cranial skeletal part representation.

| Skeletal Part | Size Class 1 NISP/MNE /cMNI | Size Class 2 NISP/MNE /cMNI | Size Class 3-4 NISP/MNE /cMNI | Equid NISP/MNE /cMNI |
|---|---|---|---|---|
| ATLAS | | 3/3/3 | 1/1/1 | |
| AXIS | | 4/4/4 | | |
| CERV | 1/1/1 | 15/12/8 | 20/15/8 | 1/1/1 |
| THOR | 9/9/6 | 27/17/13 | 4/3/2 | |
| LUMB | 3/3/3 | 1/1/1 | 2/2/2 | |
| CAUD | | | 1/1/1 | |
| SAC | 3/3/2 | | | |
| 1/2 PEL | 3/3/3 | 68/63/22 | 9/9/9 | 1/1/1 |
| RIB | 17/3/3 | | 17/10/4 | |
| HYO | | 1/1/1 | | |
| SCAP | 12/5/3 | 98/37/23 | 12/7/7 | 1/1/1 |
| HUM | 37/21/15 | 109/70/57 | 16/12/12 | |
| RAD | 9/8/7 | 84/23/23 | 13/12/12 | 2/2/2 |
| ULN | 2/2/2 | 16/10/10 | 2/2/2 | |
| MAG | | 8/7/7 | 1/1/1 | |
| UNCI | | 3/3/3 | | |
| SCAPH | 1/1/1 | 8/8/7 | | |
| LUN | 1/1/1 | 6/6/6 | 1/1/1 | |
| CUN | 1/1/1 | 3/3/2 | 1/1/1 | |
| MTC | 8/6/6 | 62/39/24 | 6/4/4 | 5/5/3 |
| FEM | 35/20/17 | 164/53/33 | 11/11/8 | |
| TIB | 20/19/16 | 202/49/33 | 17/13/11 | |
| LATMEL | 1/1/1 | 6/6/6 | | |
| CALC | 3/3/3 | 28/22/19 | 4/4/4 | |
| ASTRAG | 3/3/3 | 23/23/17 | 1/1/1 | 1/1/1 |
| NAVCUB | 6/6/5 | 10/10/9 | | |
| EXCUN | 2/2/2 | 4/4/4 | | |
| MTT | 36/25/14 | 71/33/27 | 19/15/15 | 2/2/2 |
| MTP | | | 7/5/5 | 8/2/2 |
| PHAL 1 | 17/14/9 | 74/60/17 | 5/5/4 | |
| PHAL 2 | 20/8/8 | 58/44/11 | 4/4/4 | |
| PHAL 3 | 11/11/4 | 29/29/14 | 2/2/2 | 3/3/3 |
| PAT | | 3/3/3 | | |
| SES | | 11/11/1 | | |

Figure 5.2: Caprine horncores from the Post-Member 6 Infill. These horncores are similar to those of the Barbary sheep *Ammotragus lervia*. Photos courtesy by R. J. Clarke.

horncores (Figure 5.2). This species is now only found in northern Africa and it inhabits mountainous and rock terrain. The mountain reedbuck (*Redunca fulvorufora*) and common reedbuck (*Redunca arundinum*) are both present. One specimen (a right maxilla fragment with the $M^2$ and $M^3$) belong to the mountain reedbuck, while at least two individuals identified from four specimens (two lower $P_4$ and two left $M^2$) are common reedbuck. Two specimens representing an indeterminate *Redunca* sp. have also been identified.

Size Classes 3-4 is indicated by the taxa *Connochaetes, Damaliscus*, *Hippotragus* and *Kobus*. There are six specimens of *Connochaetes* with an MNI of two (one adult and one juvenile). An upper left $P^4$, right $I_1$ and molar, an upper molar and tooth fragment could be from one adult individual. The juvenile individual is identified from a left $DP^3$. There are 17 teeth specimens of blesbok (*D. dorcas*), indicating at least five individuals identified from five left $M_2$. Tsessebe (*Damaliscus lunatus*,) is identified from a single specimen (a maxilla fragment with the $M^1$ and $M^2$).

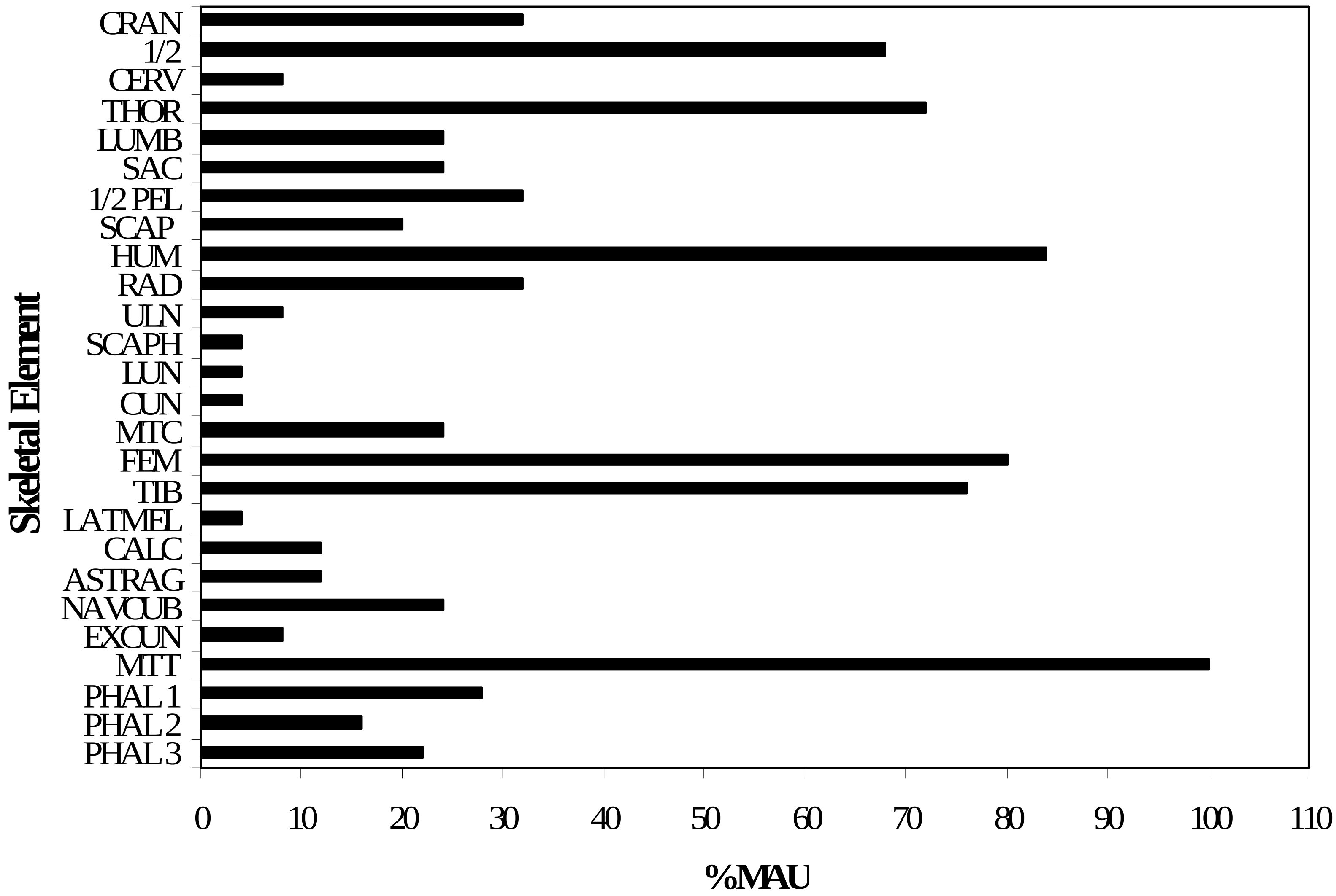


Figure 5.3: Post-Member 6 Infill Size Class 1 bovid %MAU

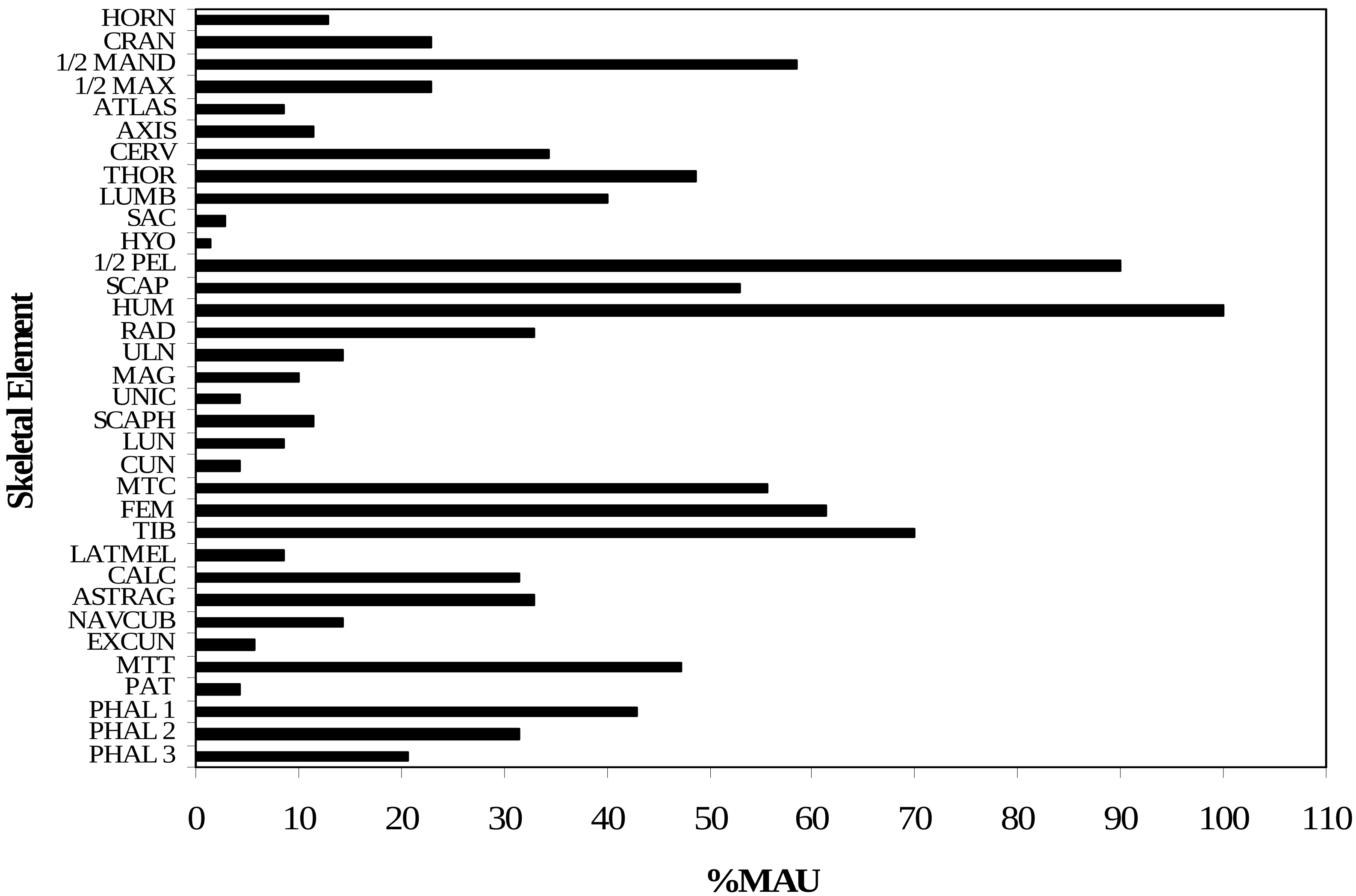


Figure 5.4: Post-Member 6 Infill Size Class 2 bovid %MAU

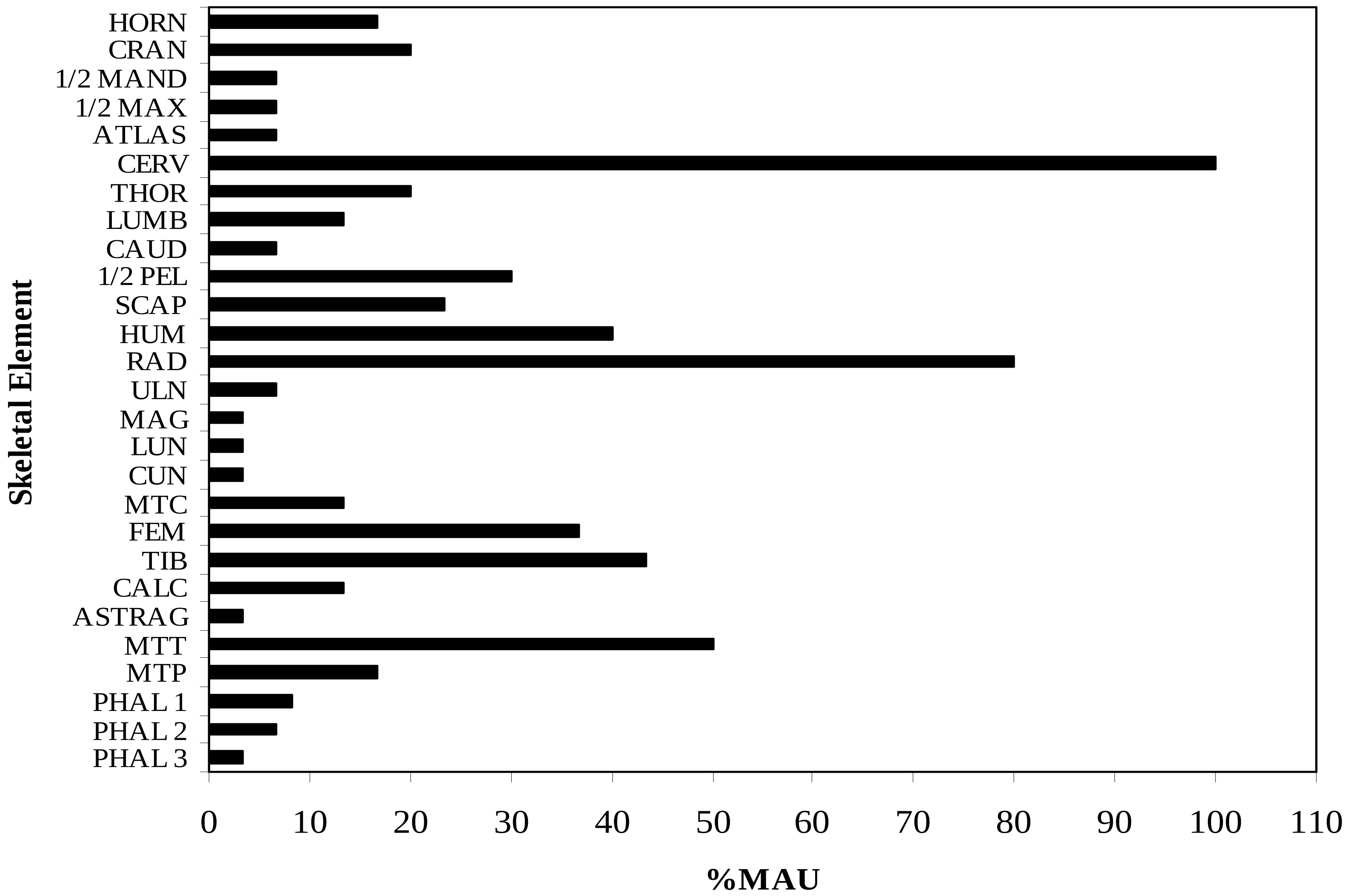


Figure 5.5: Post-Member 6 Infill Size Class 3-4 bovid %MAU

One *Hippotragus* individual has been identified from a left $P^1$. *Kobus* is represented by waterbuck (*Kobus ellipsyprimnus*) and lechwe (*Kobus leche*). At least one individual of *K. leche* is identified from three specimens: a left $M^1$, a right $M^1$ and right $M_2$. The waterbuck is identified from two specimens with an MNI of 2 for two sub-adult right $M^1$ specimens. The total MNI of Size Classes 3-4 bovids based on these taxa is 15 from 19 metatarsal specimens.

### 5.3.5 Other taxa

There are 23 specimens of porcupine, *Hystrix africaeaustralis*, only two of which are post-cranial elements (an ischium fragment and a distal scapula fragment). These specimens represent at least four individuals, two adults identified from two right $M^4$ two upper $M^3$, and a juvenile, as well as a subadult.

Cape hare (*Lepus capensis*) is indicated by seven specimens with an MNI of 3. These identifications are based on three left tibiae shaft fragments. A left distal radius shaft fragment, proximal humerus, femur shaft fragments and incisor are also present, but they do not raise the estimated number of individuals represented.

There are three specimens of hyrax (*Procavia capensis*), BP/3/34560 BP/3/34561 and BP/3/32271, possibly of one individual.

Spring hare (*Pedetes capensis*) is represented by two specimens, a proximal right humerus shaft fragment and a proximal left tibia shaft fragment with an MNI of 1.

## 5.4 Taphonomy

This assemblage was examined for various types of modifications and the action of modifying and accumulating agents. The modifications observed indicate the action of both biotic and abiotic agents of modification and accumulation on the assemblage during its taphonomic history (Table 5.10).

### 5.4.1 Stone tool modification

Butchery marks have been observed on 1.24% of the assemblage. The first three rows of Table 5.10 give a breakdown of the types of butchery marks and Figures 5.6, 5.7, 5.8 and 5.9 are pictures of some of the butchery modifications. Over one third (36%) of the hammerstone percussion marks are also accompanied by impact notches. The presence of notches indicates that hominids were involved not just in dismembering the carcasses, but also in marrow extraction from these bones.


Figure 5.6: Hammerstone percussion marked bones from the Post-Member 6 Infill at Sterkfontein. Note the curved breaks and the percussion notches on the two bone fragments in the left of the figure.

Figure 5.7: Chop marks on a bovid Size Class 2 distal femur shaft fragment from the Post-Member 6 Infill assemblage.

Table 5.10: Post-Member 6 Infill assemblage bone modifications

| **Modification** | **Number of modified** | **% modified** |
|---|---|---|
| Cutmarks | 16 | 0.42 |
| Hammerstone percussion | 25 | 0.74 |
| Scrape marks | 3 | 0.08 |
| Carnivore gnawing | 219 | 5.75 |
| Stomach acid etching | 24 | 0.63 |
| Porcupine gnawing | 281 | 7.38 |
| Small rodent gnawing | 159 | 4.08 |
| Weathering | 2838 | 74.53 |
| Post-depositional modification | 571 | 15 |
| Excavation and preparation modification | 2687 | 70.56 |


Figure 5.8: Scrape marked bone from the Post-Member 6 Infill. The scrape marks appear as fine striations in the encircled area.

Figure 5.9: Cut marked bones from the Post-Member 6 Infill at Sterkfontein.

### 5.4.2 Mammalian modification

Two hundred and nineteen specimens (5.75 %) are carnivore gnawed, 281 (7.39%) porcupine gnawed and 159 (4.08%) small rodent gnawed. These marks also occur in combinations, e.g. carnivore and porcupine gnawed (0.16%), carnivore and small rodent gnawing (0.26%), porcupine and small rodent gnawing (1.16%) and a combination of all the above listed gnawing agents (0.05%). Figures 5.10 and 5.11 show some of the carnivore and porcupine gnawed bones from this assemblage. Some hyaena coprolites and coprolite fragments have also been identified, in addition to 24 stomach acid etched bone fragments, all of which have tooth marks.

Figure 5.10: Carnivore gnawed bones from the Post-Member 6 Infill at Sterkfontein. Most of these have tooth notches, which are differentiated from percussion notches by their small, semi-circular and more arcuate nature.

The gnawing marks show that carnivores exploited some carcasses, parts of which were later accumulated in the cave, while the presence of stomach acid etched bone and coprolites indicates that carnivores were residing in the cave or nearby, resulting in the accumulation of their scat.

### 5.4.3 Weathering

A total of 2838 specimens (74.5%) in this assemblage has been weathered in various stages. Table 5.11 gives a breakdown of the weathering stages to which bones have been assigned. A component of the assemblage was deemed inappropriate for weathering condition analysis, as it consists of tooth specimens, breccia covered bones and bone fragments or recently broken bones, and therefore surfaces could not be examined for weathering stages. Weathering in this assemblage is minimal indicating deposition and burial without extensive exposure to sunshine, heat and fluctuating moisture regimes that cause extensive weathering. This in turn indicates fast burial with deposition of the bones in the cave or near the cave entrance.

Table 5.11: Post-Member 6 Infill assemblage weathering stages

| **Weathering Stage** | **Number of weathered** | **% weathered** |
|---|---|---|
| **Stage 0** | 1 | 0.03 |
| **Stage 1** | 562 | 14.76 |
| **Stage 2** | 2105 | 55.28 |
| **Stage 3** | 161 | 4.23 |
| **Stage 4** | 9 | 0.24 |
| **Total** | **2838** | **74.53** |

### 5.4.4 Post-depositional modification

A total of 571 specimens (15%) of this assemblage has been post-depositionally modified, before, during or after fossilisation. These modifications occur as crushing, cracking and displacement of portions of specimens as well as exfoliation, trampling, abrading, corrosion, soil acid and root etching and insect modification. The proportions of the assemblage affected by each of these modes of post-depositional modification can be seen in Table 5.12. In Figure 5.12 are some of the abraded bones.

Figure 5.11: Porcupine gnawed bones from the Post-Member 6 Infill at Sterkfontein.

Table 5.12: Post-Member 6 Infill post-depositional modification

| post-depositional modification | Number modified | %modified |
|---|---|---|
| Abrasion | 22 | 0.58 |
| Corrosion | 14 | 0.37 |
| Trampling | 16 | 0.42 |
| Sediment overburden pressure | 451 | 11.84 |
| Soil acid etching | 29 | 0.76 |
| Root etching | 7 | 0.18 |
| Insect action | 5 | 0.13 |
| Exfoliation | 27 | 0.71 |

Figure 5.12: Some of the more abraded bone specimens from the Post-Member 6 Infill at Sterkfontein. Note the rounding and sharpening of the tips of the bones.

### 5.4.5 Excavation and preparation modification

Most of the specimens (70.1%) in this assemblage have undergone post excavation modification as is clear from the clean modern breakage surfaces on the bone edges. While some of these would have occurred as a result of the minimal preparation carried out on some these bones after excavation, it is possible that some of the modification occurred in storage. Many of the breakages on specimens in this assemblage are a result of excavation of friable bones in the soft decalcified deposits (Table 5.10). The modification on these specimens occurs as breakage, chipping, hacking, slicing and even scratching of specimens. Some broken specimens have been refitted during analysis, aiding in their identification but, many breakages are not refitted. Most of the non-identified specimens are broken.

## 5.5 Fracture attribute analysis

### 5.5.1 Fracture surface analysis

Fracture angle, outline, edge and circumference completeness values derived for this assemblage are provided in Tables 5.13 and Figure 5.13. Breadth/length ratio details are provided on Figure 5.14. One thousand five hundred sixty five fracture surfaces were available for fracture outline, angle and edge analysis in this assemblage.

Sixty five percent of these are curved, 12% are transverse, while 23% are intermediate outlines. Fifty two percent have oblique angles, 12% are intermediate and 36% are right angles. High frequencies of oblique outlines are indicative of fresh bone broken assemblages (Villa and Mahieu, 1991). Fifty eight percent of breakage surfaces in this sample have fresh bone broken smooth edges, while 42% are jagged edged. Forty three percent of the bones have >50%, and 22% have >50% of the original circumference remaining respectively (Figure 5.13). The greater percentage of curved outlines, oblique angles and smooth edges indicates a green-bone-broken assemblage. Complete and

Table 5.13: $X^2$ analysis of Member 6 fracture attributes in comparison with the French Neolithic sites.

| **Fracture Attributes** | **Sarrians** | **Bezouse** | **Fontebregoua** | **Post-Member 6 Infill** |
|---|---|---|---|---|
| **Fracture Angle** | | | | |
| Oblique | 22 | 27 | 144 | 811 |
| Right | 176 | 174 | 47 | 185 |
| Intermediate | 71 | 52 | 13 | 569 |
| **Total** | **269** | **253** | **204** | **1565** |
| $X^2$ | 437 | 453.68 | 78.41 | |
| **Difference** | significant | Significant | significant | |
| **Fracture Outline** | | | | |
| Curved | 106 | 82 | 134 | 1017 |
| Transverse | 193 | 144 | 92 | 190 |
| Intermediate | 59 | 61 | 35 | 358 |
| **Total** | **358** | **287** | **261** | **1565** |
| $X^2$ | 323.16 | 249 | 93.27 | |
| **Difference** | significant | Significant | significant | |
| **Circumference** | | | | |
| 1 (100%) | 200 | 60 | 13 | 565 |
| 2 (>50%) | 10 | 0 | 23 | 289 |
| 3 (<50%) | 16 | 33 | 115 | 450 |
| **Total** | **226** | **93** | **151** | **1304** |
| $X^2$ | 157.18 | 29.35 | 178.08 | |
| **Difference** | significant | Significant | significant | |

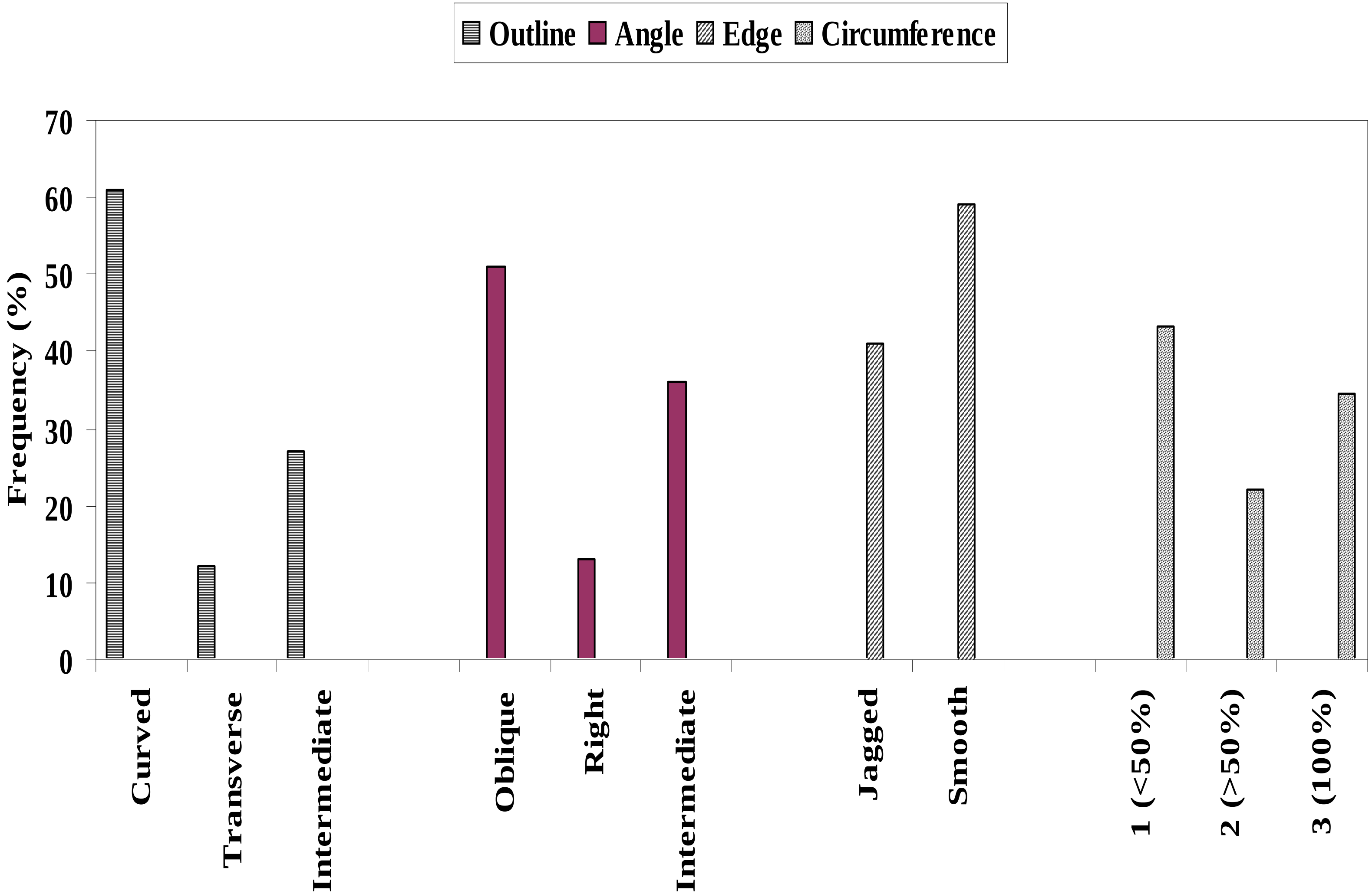


Figure 5.13: Post-Member 6 Infill fauna fracture attributes and circumference completeness frequencies.

nearly complete (>50%) circumferences indicate a carnivore broken assemblage, but hominid breakage of some bones in the assemblage is also indicated by the hammerstone percussion marks and notches. Table 5.13 provide $X^2$ values of the various fracture attributes of the Post-Member 6 Infill assemblage compared to the French Neolithic assemblages. Although the Post-Member 6 Infill appears similar to the green broken Fontebregoua assemblage by circumference, it is significantly different from all of the French Neolithic sites fracture attributes. This implies that Post-Member 6 Infill is similar to neither the dry-bone-broken assemblages nor the fresh bone assemblages. This dissimilarity with all the control assemblages in all the fracture attributes can be explained by different depositional environments, sample size differences between the French Neolithic assemblages and the Post Member 6 Infill as well as post-depositional modification to the Sterkfontein sample.

### 5.5.2 Breadth/length ratio

Figure 5.14 shows frequencies of the breadth/length ratios derived for the Post-Member 6 Infill faunal assemblage. One thousand three hundred one specimens were analysed for breadth/length ratios. Of these, 88% are within the breadth/length ratio categories between 0.2 and 0.6. This kind of distribution indicates a less fragmented assemblage expected from an assemblage of fresh broken bone, not predominantly broken by hominids.

## 5.6 Discussion

### 5.6.1 Taxa and skeletal part representation

This assemblage has a taxonomically diverse and rich faunal composition, with at least seven orders, 11 families and 35 genera represented. These include 3 primate, 23 carnivore, 100 ungulate, five rodent, a hyrax and three lagomorph individuals. The species diversity of this assemblage indicates environmental

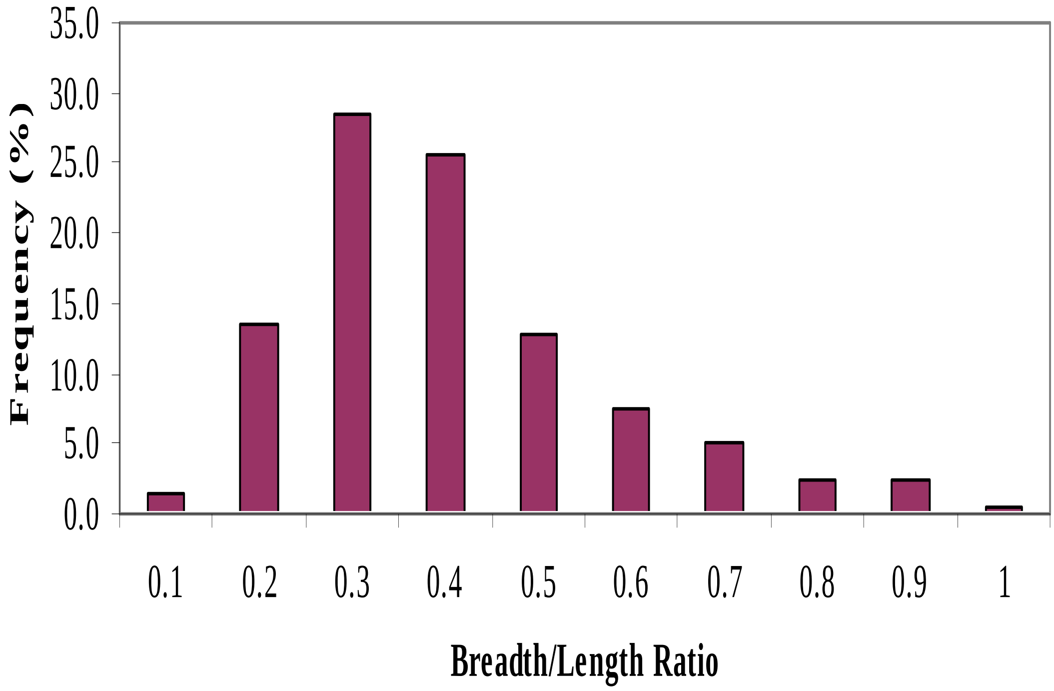


Figure 5.14: Post-Member 6 Infill fauna lreadth/length ratio distribution ($N$=1304).

and climatic diversity in the area during its accumulation. Taxa known to thrive in different ecological conditions (e.g the woodland hippotragines, and the grassland species, antilopines and alcelaphines and some water-loving reduncines, as well as the mountain or rock-loving barbary sheep) have been identified in this assemblage. These species, when considered together, suggest a riverine woodland with adjacent open grassland and some high, rocky hills. This is similar to the open grassland taxa characterised by woodland elements identified in the older Member 5 West early Acheulean breccia, the Oldowan Infill, and L63 and Lincoln Cave North (Pickering, 1999; Kuman and Clarke, 2000; Reynolds, 2000). However, this assemblage differs from the Member 5 West early Acheulean and the Lincoln Cave North assemblages in that it doest not have extinct forms such as *Dinofelis barlowi* (Pickering, 1999), and the *Hippopotamus amphibius* from Lincoln Cave North (Reynolds, 2000). Furthermore, *Megalotragus* found in the Lincoln Cave (Reynolds, 2000), but which apparently derived from Member 5 West, is also not represented in this assemblage. This assemblage, however, has more water-dependent species such as the roan antelope (*Hippotragus equinus*), waterbuck (*Kobus ellipsiprymnus*) and lechwe (*Kobus leche*). This indicates a more recent savannah mosaic grassland fauna for the Post-Member 6 Infill times.

The carnivore species in this assemblage include two *Panthera leo* individuals not identified in the assemblage analysed by Reynolds (2000) and Reynolds *et al.* (2007), due to the limited sample size. The primate individuals identified in the Post-Member 6 Infill are represented mainly by dental remains, a characteristic of carnivore-predated primate remains (Brain, 1981). Studies by Brain (1981) and Pickering (2001a,b) indicate that carnivore predation of primate carcasses (e.g., cheetah and leopard) leave intact crania as opposed to the fragmentary crania for hyaena-ravaged primate carcasses, as hyaenas consume most elements of the postcrania. The state in which post-cranial bones are found is, however, dependent on the carnivore species involved, the length of the bones (Carlson and Pickering, 2003), and whether the bones are deposited as scat or refuse assemblages. For instance, phalanges, metapodia, carpals, and tarsals are unlikely to be found within the refuse assemblages but may be found in scat assemblages after being swallowed whole during feeding and later regurgitated or defecated (Marean, 1991; Pickering, 2001a,b). The number of carnivores, and thus competition for the carcasses, as well as how hungry a predator is, will also influence how much of the carcass is consumed.

Eighty nine bovid individuals are present in the Post-Member 6 Infill, based on post-cranial material only identified to size classes. Majority (57) of the bovid individuals are Size Class 2. All bovid size classes are best represented by limbs (both meat-rich and non-rich parts), as can be seen in Figures 5.3, 5.4 and 5.5. This assemblage also has a high representation of cranio-dental remains, notably of Size Class 2, as well as the fragile axial and the compact tarsal and carpal elements. In fact, Size Class 2 bovids appear to be represented by complete or near complete skeletons.

### 5.6.2 Bone accumulation

This assemblage has been modified by various agents (Table 5.10). While some of the modifications have been inflicted during accumulation, others are inflicted prior to or after accumulation by different modifying agents. The accumulating and modifying agents include biotic agents (carnivores such as leopard, brown and spotted hyaenas, porcupines and small rodents and hominids), and abiotic agents (fluvial action and death traps, as well as post-depositional destruction and modification).

#### Biotic bone accumulators

*Carnivore accumulation*

The number of carnivore individuals in this assemblage is large (17.2% of tMNI) and the diverse elements (Tables 5.4 and 5.6). Of these carnivore taxa, lions are not known to transport and/or accumulate bones, but leopards and cheetahs transport carcasses to regular feeding grounds (Brain, 1981; Marean, 1989), and in the absence of scavenging by other carnivores, prey remains eventually build up at these feeding points. Leopards carry prey carcasses to specific feeding spots, normally to trees away from scavengers (Cavallo and Blumenschine, 1989), but also to cliffs formed by cave roof overhangs (Brain, 1981) and to lairs within caves and cave tunnels (Simons, 1966), making them possible contributors to this assemblage, even if to a small degree. Trees at the cavern entrance would also have made attractive leopard feeding locations, from which such bone refuse would drop to the ground, gravitating into the cavern deposit, as postulated for Swartkrans (Brain, 1981).

The Post-Member 6 Infill assemblage consists of a majority of small to medium-sized mammals including mainly bovids, with the majority of carnivore-gnawed bones also being Size Class 2 or smaller bovids. Of the 219 carnivore modified specimens, only 14 are Size Class 3-4. The size categories of the taxa represented in the assemblage, the number of small carnivore bones, the gnawed bones, and the ratio of gnawing at 5.75% implicate brown hyaena, which is also represented in the assemblage. Brown hyaenas are solitary foragers but bring back carcasses to the denning sites for feeding their cubs. They thus hunt small-bodied animals, including other small carnivores that can be manageably killed and/or transported by a single hyaena individual (Bunn, 1983b; Lam, 1992; Mills and Mills, 1977). Spotted hyaenas, on the other hand, forage in groups and can transport carcasses as large as those of Size Class 4 ungulates, with gnawing incidence of between 38% and 100% of the bone (Bunn, 1983b; Lam, 1992; Maguire *et al.*, 1980; Mills and Mills, 1977; Skinner *et al.*, 1986). Thus, both species of hyaena represented in this assemblage could have played a part in the accumulation of the bones. The proportion of gnawed bone in the Post-Member 6 Infill is, however, relatively small compared to that in documented modern brown and spotted hyaena accumulated assemblages, but the difference can be due to the fact that this assemblage has gone through other diverse modifications, such as post-depositional modifications that delete and/or obscure modifications. In addition, juvenile brown hyaena specimens and hyaena coprolites have been recovered from the assemblage, indicating that hyaena (possibly both species) used the cave or part of the cave as a den at some point during the accumulation of this deposit (Kruuk, 1972; Mills, 1990).

This assemblage, however, consists of most skeletal elements and portions of taxa (especially Size Class 1 and 2 bovids) that include compact bones and fragile grease-rich axial elements (Tables 5.8 and 5.9) and epiphyseal ends of long bones that are more likely to be chewed by carnivores, especially hyaenas during feeding (Marean, 1991). It is noteworthy that some of the compact bones and epiphyseal ends, in addition to long bone shaft fragments, also have gnaw marks and/or stomach acid etching, indicating that they are probably carnivore-accumulated. This kind of scenario is possible in cases of multiple-agent accumulation, where a small part of the assemblage is accumulated by a non-bone-crunching carnivore, such as leopard, with part of it being accumulated by other agents like hyaenas, porcupines, hominids and death traps. Multiple accumulation by these agents may at the same time occur through one or more entrances, and at different times of the year, but the presence of denning carnivores and the signs of denning by hyaenas in this assemblage seem to argue against hominid accumulation at the same time, unless there was more than one entrance to the cave during Post-Member 6 Infill times. Alternate occupation and accumulation over brief periods of time are a possibility.

*Porcupine and small rodent accumulation*

Porcupine bone accumulation in earlier deposits at Sterkfontein has been argued to be restricted by cave form, as porcupines are unable to negotiate vertical slopes such as the one that characterised the steep cavern opening through which the Oldowan Infill accumulated (Pickering, 1999). The Oldowan Infill assemblage, however, has only three porcupine modified bones and no porcupine remains, setting it apart from the assemblage under current study, which has 23 specimens of at least three porcupine individuals and 7.38% porcupine gnawed bones. Porcupine remains in this assemblage may have been accumulated by carnivores, or through natural deaths of porcupines in the cave, or by such remains gravitating in to the cave from the landscape above. Leopards and hyaenas have been observed to prey on porcupines (Mitchell *et al.*, 1965; Pienaar, 1969; Kruuk, 1972), depositing their remains in or near the cave. While none of the 23 porcupine specimens identified in this assemblage bears any carnivore gnaw marks or stomach acid etching, they are almost entirely (91%) cranial remains, which is inconsistent with elements expected from carnivore predated porcupine remains which should bear carnivore tooth marks, or a death trap situation, which should include most porcupine skeletal elements.

Thus, the 7.38% porcupine gnawed bones observed in this assemblage may have accumulated outside the cave, gravitating or washing into the cave. Alternatively, porcupines could could have occupied a cave with a narrow opening or a low roofed cave. Porcupine gnawing in this assemblage is minimal and falls below the range of 22% - 100% of bones accumulated by porcupines in their dens (Maguire *et al.*, 1980; Brain, 1981). However, we should, consider that the Post-Member 6 Infill assemblage may have been affected by post-depositional factors that modify, obscure or delete some modifications. The result of this deletion and/or modification could be the post-depositional removal of the porcupine post-cranial remains, as well as some of the porcupine gnawed bones. It is therefore possible that a component of the Post-Member 6 Infill faunal assemblage was porcupine-accumulated. Other small rodent gnawing has also been identified in this sample. Small rodents are also not known to be major bone accumulators but may bring in small amounts of bones. It is therefore considered that if they brought in any bones, the amount is negligible compared to those accumulated by other agents.

*Hominid accumulation*

The hominid specimen in this assemblage is not of *Australopithecus*, *Paranthropus* or early *Homo* and is more like *H. sapiens*, and indicates that the cave or its environs was suitable for hominid habitation. The presence of porcupine remains and porcupine gnawed bones in the assemblage implies that porcupines could have used the cave, which suggests a fairly horizontal cave entrance. However, if the cave roof overhang was not too low, it may have been possible for hominids to use this cave or its entrance area, accumulating artefacts and their food refuse. Other evidence of hominid cave habitation, such as the use of fire, have not been found in this deposit. On the other hand, such dolomitic limestone cave deposits are characterised by periods of erosion, reworking and collapse that would hamper the preservation of such evidence, e.g., hearths.

This assemblage has 1.24% hominid stone tool modification marks, a proportion which is within the range of modifications expected from other fossil, as well as simulated hominid accumulated assemblages (Gifford *et al.*, 1980; Crader, 1981; Bunn *et al.*, 1980; Bunn, 1983b,a). The presence of stone tools indicated hominid stone tool manufacture and/or use in the cave's vicinity but does not necessarily imply hominid accumulation of the stone tools or the bone assemblage in the cave. Indication of use of the cave by denning carnivores in the form of stomach acid etched bone, coprolites and juvenile individuals argues against the possibility of hominid use of the cave, although they may have been using the cave when carnivores were not denning in it, possibly after using fire to keep away carnivores as has been postulated for Swartkrans Member 3 (Brain, 1981).

### Abiotic bone accumulators

*Death trap*

Common features of the dolomitic limestone landscape in the Sterkfontein valley are clusters of trees around the mouths of concealed avens. Tree and vegetation-concealed avens have created death traps for hominids and animals roaming the landscape since the Plio-Pleistocene, leading to accumulation of bones of victims in the caverns below (Pickering, 1999; Clarke, 1999; Carlson and Pickering, 2003; Pickering *et al.*, 2004). Because of the inaccessibility of the cavern to scavenging carnivores, the accumulated bones are preserved mostly complete and/or articulated if spared the post-depositional destruction and dislocation that is common in these caves due to sediment movement and collapse as the sediments calcify and decalcify, and as the walls and roofs get eroded. Lyman (1994) observed that some death traps have more carnivore or primate remains than other mammalian taxa because carnivores and primates are agile and are more likely to fall into these traps during play or climbing. Carnivores are also likely to be drawn to the carcasses already in the death trap. Pickering (1999) has, however, argued for representation of mammalian taxa in death traps proportional to their abundance in the landscape as the trap would likely trap animals in relation to how abundant or scarce they are on the landscape.

It might seem possible that some of the Post-Member 6 Infill fauna accumulated as a death trap assemblage, because of the majority of skeletal parts by which taxa, especially the smaller bovid size classes, are represented. The Size Class 1 and 2 bovids are represented by most skeletal elements, including epiphyses and meat rich bones that are more likely to be destroyed by predators and/or post-depositional destruction (Marean, 1991). This general completeness of the bovid skeletons (seen in the identification of most elements) can, however, also be explained by accumulation by some other less destructive mode, like leopard predation coupled with good preservation conditions, with little if any post-depositional destruction of bones. Also, primates and carnivores that dominate death trap assemblages are scarce in the assemblage, which argues against the death trap scenario for the accumulation of this assemblage.

*Fluvial transport*

There are abraded specimens in this assemblage which may also be interpreted by scratch marks resulting from water transport and movement and compaction in sediments. Abrasion is however minimal in extent and intensity, indicating possible short distances of transport in fluvial sediments and movement in sediment on the deposit talus. Based on the Voorhies groups profiles of various skeletal elements' possible deposition at points along a fluvial channel (Voorhies, 1969; Lyman, 1994), it can be said that this assemblage has preserved skeletal elements from all the different Voorhies groups, indicating that fluvial transport was not a major mode of accumulation, or did not affect the assemblage much. Thus, most of the abrasion in the assemblage is not a result of fluvial transport. It is thus likely that movement and compaction of sediments within the cave was the cause of the minimal abrasion on some of the bones in this assemblage, but both minimal fluvial transport and movement within sediments and compaction may have abraded the bones.

### 5.6.3 Post-depositional modification and destruction

Post-depositional destruction and/or modification is visible in this assemblage in the form of crushing, surface erosion and dislocation of parts of bones. These forms of post-depositional destruction may have comminuted the bones further, thereby destroying or obscuring other modification marks and/or rendering some skeletal elements unidentifiable. The Post-Member 6 Infill has a high frequency of both the fragile axial elements and compact bones. This implies that this assemblage was not subjected to intense post-depositional destructive processes that would have deleted these fragile skeletal elements prior to fossilization and recovery. Neither was carnivore action intense enough to delete these fragile elements that are greasy and thus more nutritionally attractive to bone crunching carnivores. However, this assemblage has a high proportion (9.9%) of fragments of compact long bone shafts and a high frequency of green-bone-broken specimens. Post-depositional modification may have lowered the frequencies of other modification marks by fragmenting modified pieces and deleting or masking other modifications, and leading to inadequate preservation of modifications of particular dominant accumulators or modifiers of the assemblage.

## 5.7 Conclusions

This assemblage is an important asset to the understanding of the later periods of deposition and hominid occupation of the Sterkfontein valley. It has proved useful to this end by providing a faunal assemblage more diverse than that of the older and adjacent assemblages and thus providing a proxy for the understanding of the diverse micro-environmental conditions prevailing in the valley at the time of its formation. It is, however, complex in origin and has apparently been accumulated by more than one agent, including carnivores, hominids, porcupines, and possibly slope wash of material from the surface above. The faunal composition of the Post-Member 6 Infill and the recovery of carnivore tooth marked bone, stomach acid etched bone and coprolites suggest the contribution to the accumulation of the assemblage by carnivores, probably brown or striped hyaena. Porcupine remains and modifications also imply the role of porcupines in the assemblage modification and accumulation.

One hominid specimen and stone tools indicate a hominid presence and activity in the vicinity of the cave at the time, while stone tool butchery-modified bones indicate hominid involvement in its accumulation. Slopewash of some bones (including those with carnivore, stone tool and porcupine as well as small rodent modifications from the vicinity) may have occurred, as demonstrated by the presence of abrasion marks on some of the bones. Accumulation of bones in the cave by these agents could have occurred roughly contemporaneously, with different agents utilising different parts or even different entrances to the cave. Assuming that the cave was occupied, this, as well as the accumulation of bone by these agents could also have occurred at different times.

# Chapter 6

# Post-Member 6 Infill stone tools

## 6.1 Introduction

In this Chapter, I provide a classification and interpretation of the stone tool assemblage recovered from the Post-Member 6 Infill deposit at Sterkfontein Caves. These artefacts derive from squares identified during excavations as belonging to this younger deposit from an area between the calcified Member 5 West Acheulean and the decalcified Member 5 East (Kuman and Clarke, 2000); see Figure 1.4 and Appendices A.1 and A.2.

Six hundred and eight specimens are available for this study. This area has produced Middle Stone Age artefacts, and it appears to be continuous with the adjacent Lincoln Cave deposits, as revealed in our excavations which have tunneled under the northern roof to link the two cave systems (Reynolds, 2000; Reynolds *et al.*, 2003, 2007). The Lincoln Cave South, which has diagnostic Middle Stone Age tools, is likely to be of similar age to the Lincoln Cave North deposit, which has been dated to between 252 600 ± 35 600 years and 116 300 ± 7 700 years (Reynolds *et al.*, 2003). Thus the Post-Member 6 Infill that is continuous with the Lincoln Cave South dates to approximately the same time. The analysis of this assemblage included the typological classification of the artefacts, raw material identification, weathering condition determination, maximum dimension, retouch and degree of platform faceting. This chapter thus provides a typological and technological examination of the Sterkfontein Caves MSA material and contributes to an understanding of the tool making

Table 6.1: Artefact types of the Post-Member Infill assemblage

| **Type** | **N** | **%** |
|---|---|---|
| Small flaking debris <20mm | 330 | 54.3 |
| Complete flakes ≥20mm | 21 | 3.5 |
| Incomplete flakes ≥20mm | 73 | 12.0 |
| Core trimming flakes ≥20mm | 3 | 0.5 |
| Chunks ≥20mm | 60 | 9.9 |
| Retouched pieces ≥20mm | 10 | 1.6 |
| Cores | 57 | 9.4 |
| Hammerstone | 1 | 0.2 |
| Manuports | 53 | 8.7 |
| **Total** | **608** | **100.0** |

behaviour of the MSA hominids, as well as to an understanding of the site formation processes.

## 6.2 Artefact typology

The assemblage is dominated by small flaking debris at 54.3% (see Table 6.1 and Figure 6.1). The small flaking debris is mostly of quartz, while many of the larger pieces, including cores and manuports, are in quartzite (Table 6.2). This indicates that quartzite was probably not flaked in the vicinity of the cave because the assemblage has not been winnowed of small elements prior to deposition. The import of large quartzite cores is unlikely to have occurred if the small flaking debris is absent. Therefore, it is most reasonable to conclude that most of the manuports and quartzite cores have been mixed with the older Acheulean breccia that was decalcified and redeposited with the younger incoming breccia.

Table 6.2: Artefact types by raw materials in the Post-Member 6 Infill assemblage (N = 608).

| **Type** | **Quartz** | | **Quartzite** | | **Chert** | | **Other** | | **Total** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** |
| Small flaking debris <20mm | 290 | 47.7 | 6 | 1.0 | 32 | 5.3 | 2 | 0.3 | 330 | 54.3 |
| Complete flakes ≥20mm | 10 | 1.6 | 6 | 1.0 | 2 | 0.3 | 3 | 0.5 | 21 | 3.5 |
| Incomplete flakes ≥20mm | 58 | 9.5 | 11 | 1.8 | 4 | 0.7 | | | 73 | 12.0 |
| Core trimming flakes ≥20mm | 2 | 0.3 | 1 | 0.2 | | | | | 3 | 0.5 |
| Chunks ≥20mm | 47 | 7.7 | 10 | 1.6 | 2 | 0.3 | 1 | 0.2 | 60 | 9.9 |
| Retouched pieces ≥20mm | 5 | 0.8 | 5 | 0.8 | | | | | 10 | 1.6 |
| Cores | 17 | 2.8 | 18 | 3.0 | 1 | 0.2 | 1 | 0.2 | 37 | 6.1 |
| Core fragments | 5 | 0.8 | 1 | 0.2 | | | | | 6 | 1.0 |
| Bipolar cores | 4 | 0.7 | | | | | | | 4 | 0.7 |
| Bipolar core remains | 9 | 1.5 | 1 | 0.2 | | | | | 10 | 1.6 |
| Hammerstone | | | 1 | 0.2 | | | | | 1 | 0.2 |
| Manuports | 12 | 2.0 | 31 | 5.1 | 1 | 0.2 | 9 | 1.5 | 53 | 8.7 |
| **Total** | **459** | **75.5** | **91** | **15.0** | **42** | **6.9** | **16** | **2.6** | **608** | **100.0** |

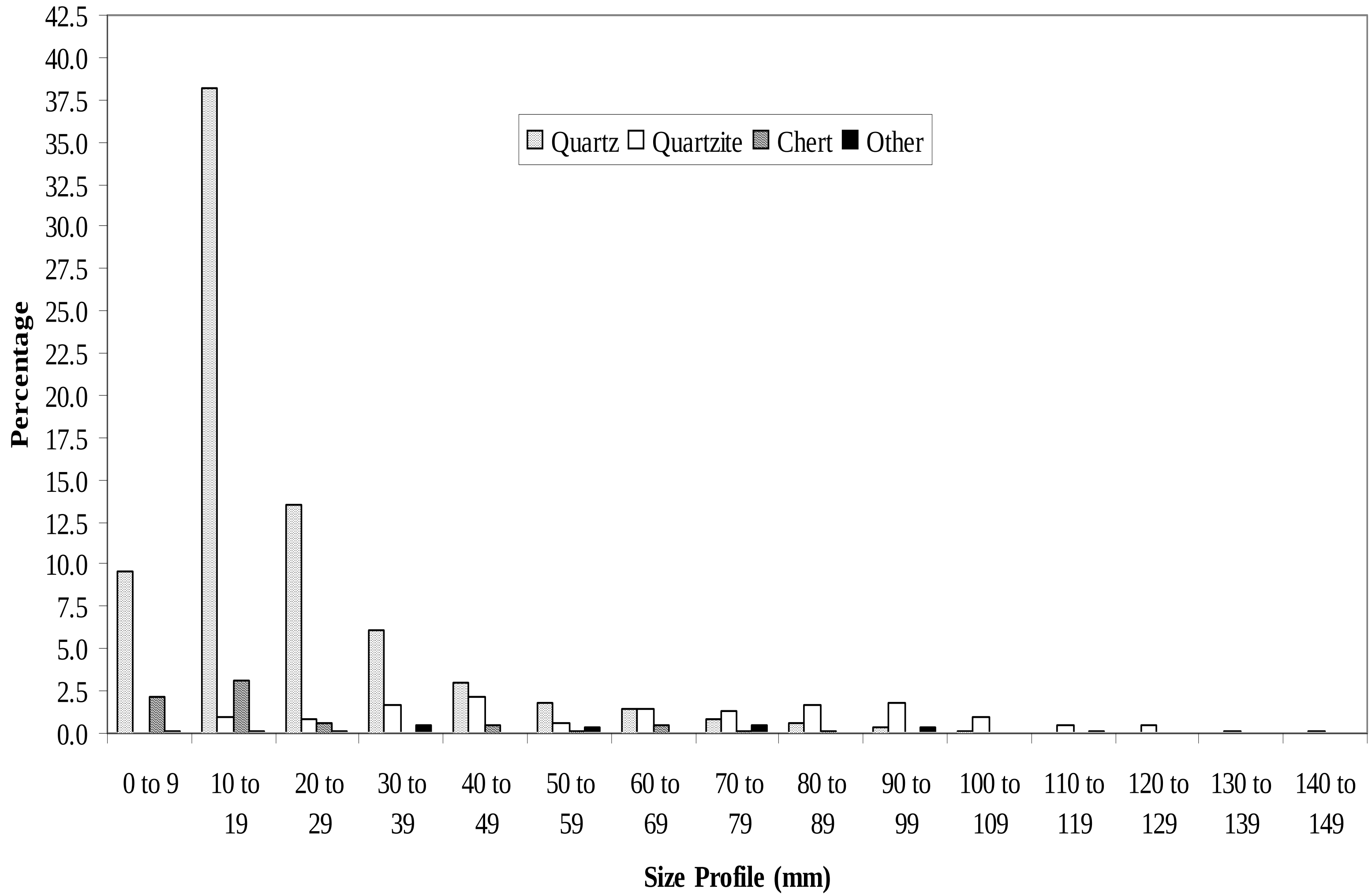


Figure 6.1: Post-Member 6 Infill artefact assemblage size profiles

## 6.3 Size profile

The proportion of small flaking debris of the assemblage is considerably lower than that recovered from the adjacent, but older Oldowan Infill assemblage with a near-complete size profile (Kuman *et al.*, 2005; Field, 1999). It has been established that the proportion of small flaking debris in experimental assemblages made in local quartz and quartzite is 85% and 79% respectively (Kuman *et al.*, 2005; Field, 1999). Other experiments have produced slightly lower proportions of small flaking debris - 60% to 75% (e.g., Schick, 1987), probably due to the different raw materials (lava) used in the latter experiments. Lava is less brittle than quartz and produces less small flaking debris. Also, the Schick experiments were aimed at producing specific core types, while the Kuman *et al.* experiments were aimed at completely reducing cores. The shattering tendency of quartz is noticeable in the abundance of quartz in the smaller-sized artefact categories (Figures 6.1).

The proportion of small flaking debris in this assemblage is also higher than that of the adjacent Member 5 West early Acheulean deposit, where only 2.71% of the assemblage consists of material <20 mm in size. Quartzite cores, manuports and some heavy-duty tools dominate in the early Acheulean deposit, while quartz light-duty tools are dominant in Post-Member 6 Infill assemblage. These differences support the suggestion that some larger artifacts in the MSA assemblage were mixed in from the older Acheulean deposit. This is because the area where the MSA assemblage is recovered once contained Member 5 early Acheulean with artefacts. As the breccia was decalcified, some Acheulean material appears to have been incorporated through re-working into the Lincoln Cave and the Post-Member 6 MSA Infill. Some of the large-sized pieces (cores and manuports) in the MSA assemblage are more consistent with the early Acheulean sample at Sterkfontein, as is the predominance of quartzite in that assemblage.

## 6.4 Raw materials

Quartz forms the largest portion of the raw materials in the assemblage at 75.5%, and quartzite at 15% is relatively more abundant than chert (at 7%) (Tables 6.2). Quartz also dominates (at 61%) when the small flaking debris are excluded from the assemblage (Table 6.3), and also when (73%) larger pieces such as cores and manuports are excluded (Table 6.4). Quartz is also more abundant in the core categories (including cores, core fragments, bipolar cores and bipolar core remains (Table 6.3), while quartzite is more abundant in the manuport sample (Tables 6.2, 6.3 and 6.5). This means that the abundance of small flaking debris is not just a result of quartz' tendency to shatter, but that quartz was the preferred material, perhaps for functional reasons. In addition, the cores in this assemblage include choppers and polyhedrons, which are common in the Acheulean deposit. These core types and the prominence of quartzite cores in general further support the argument for mixing with some material from the older Acheulean breccia into the younger MSA infill.

The combination of quartzite cores and manuports with a paucity of small flaking debris in quartzite indicates a strong similarity with the early Acheulean assemblage and suggests that the early Acheulean is perhaps the source for some of the quartzite component of the Post-Member 6 Infill. The abundance of quartz, on the other hand, differentiates this assemblage from the Member 5 West early Acheulean, where quartz is less abundant than quartzite at 29% and 64% respectively (Kuman *et al.*, 2005). These facts all lead to the conclusion that the component of the Post-Member 6 Infill MSA that is not reworked or does not derive from the decalcified early Acheulean is quartz-dominated, while most of the quartzite component may be deriving from the early Acheulean.

## 6.5 Weathering condition

A high proportion of the assemblage (66.8%) is fresh; see Tables 6.6 and 6.7 and Figure 6.2. Quartz is the least weathered and is therefore abundant in

Table 6.3: Post-Member 6 Infill artefact abundance when small flaking debris are excluded from the sample.

| **Type** | **Quartz** | | **Quartzite** | | **Chert** | | **Other** | | **Total** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **N** | % | **N** | % | **N** | % | **N** | % | **N** | % |
| Complete flakes ≥20mm | 10 | 3.6 | 6 | 2.2 | 2 | 0.7 | 3 | 1.1 | 21 | 7.6 |
| Incomplete flakes ≥20mm | 58 | 20.9 | 11 | 4.0 | 4 | 1.4 | | | 73 | 26.3 |
| Core trimming flakes ≥20mm | 2 | 0.7 | 1 | 0.4 | | | | | 3 | 1.1 |
| Chunks ≥20mm | 47 | 16.9 | 10 | 3.6 | 2 | 0.7 | 1 | 0.4 | 60 | 21.6 |
| Retouched pieces ≥20mm | 5 | 1.8 | 5 | 1.8 | | | | | 10 | 3.6 |
| Cores | 17 | 6.1 | 18 | 6.5 | 1 | 0.4 | 1 | 0.4 | 37 | 13.3 |
| Core fragments | 5 | 1.8 | 1 | 0.4 | | | | | 6 | 2.2 |
| Bipolar cores | 4 | 1.4 | | | | | | | 4 | 1.4 |
| Bipolar core remains | 9 | 3.2 | 1 | 0.4 | | | | | 10 | 3.6 |
| Hammerstone | | | 1 | 0.4 | | | | | 1 | 0.4 |
| Manuports | 13 | 4.3 | 31 | 11.2 | 1 | 0.4 | 9 | 3.2 | 53 | 19.1 |
| **Total** | **169** | **60.8** | **85** | **30.6** | **10** | **3.6** | **14** | **5.0** | **278** | **100.0** |

Table 6.4: Post-Member 6 Infill artefact abundance when small flaking debris, cores and manuports are excluded from the sample.

| **Type** | **Quartz** | | **Quartzite** | | **Chert** | | **Other** | | **Total** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **N** | % | **N** | % | **N** | % | **N** | % | **N** | % |
| Complete flakes ≥20mm | 10 | 6.0 | 6 | 3.6 | 2 | 1.2 | 3 | 1.8 | 21 | 12.6 |
| Incomplete flakes ≥20mm | 58 | 34.7 | 11 | 6.6 | 4 | 2.4 | | | 73 | 43.7 |
| Core trimming flakes ≥20mm | 2 | 1.2 | 1 | 0.6 | | | | | 3 | 1.8 |
| Chunks ≥20mm | 47 | 28.1 | 10 | 6.0 | 2 | 1.2 | 1 | 0.5 | 60 | 35.9 |
| Retouched pieces ≥20mm | 5 | 3.0 | 5 | 3.0 | | | | | 10 | 6.0 |
| **Total** | **122** | **73.1** | **33** | **19.8** | **8** | **4.8** | **4** | **2.4** | **167** | **100.0** |

Table 6.5: Post-Member 6 Infill core types by raw materials

| **Types** | **Quartz** | | **Quartzite** | | **Other** | | **Total** | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| Bipolar Core | 4 | 7.8 | | | | | 4 | 7.8 |
| Bipolar Core remain | 9 | 17.8 | 1 | 2.0 | | | 10 | 19.6 |
| Casual Core | 1 | 2.0 | 4 | 7.8 | | | 5 | 9.8 |
| Chopper Core | 1 | 2.0 | 3 | 5.9 | | | 4 | 7.8 |
| Discoidal Core | 1 | 2.0 | 2 | 3.9 | | | 3 | 5.9 |
| Core on flake | | | 1 | 2.0 | | | 1 | 2.0 |
| Polyhedral Core | 5 | 9.8 | 2 | 3.9 | 1 | 2.0 | 8 | 15.7 |
| Single platform core | | | 1 | 2.0 | 1 | 2.0 | 2 | 4.0 |
| Irregular core | 9 | 17.8 | 5 | 9.8 | | | 14 | 27.5 |
| **Total** | 30 | **58.8** | 19 | **37.3** | 2 | **4.0** | **51** | **100.0** |

the fresh category, possibly because it is the dominant raw material in the assemblage. The abundance of quartz in the fresh component of the assemblage may also be due to the fact that quartz is resistant and requires some degree of abrasion for the surface to appear weathered. The presence of weathered and slightly weathered quartz thus indicates that an element of abrasion affected the sample, probably resulting from the movement of the artefacts in sediment, either during deposition or re-working of sediments.

The general freshness of the assemblage, on the other hand, indicates that the artefacts in the assemblage were not transported for long distances prior to deposition. It is also likely that some of the weathered pieces in this assemblage, especially the large quartzite pieces which dominate the weathered category, may have derived from the early Acheulean. It appears that the reworked component is small, making the contribution of re-working of weathered elements from the Acheulean relatively small and thus the minimum weathering observed in the entire assemblage. The majority of fresh material thus indicates that most material accumulated around the cave entrance and movement of the artefacts in the sediments, as well as the inclusion of reworked and weathered artefacts from the decalcified Acheulean, was minor.

Weathering condition has been used in the past to differentiate between the early Acheulean at Sterkfontein and the Oldowan Infill as well as the later L/63 and Lincoln Cave South artefact assemblages (Field, 1999; Reynolds, 2000). The early Acheulean artefacts are generally more weathered than the Oldowan Infill and the younger deposits' artefacts assemblages. Although some of the weathered components in the MSA assemblage may have derived from the Member 5 West early Acheulean as a result of re-working of the early Acheulean breccia into the younger deposits, the extent of weathering is low compared to weathering in the early Acheulean, where the majority of artefacts are weathered. This implies that mixing from the Acheulean breccia probably occurred, but it made a relatively minor contribution to the MSA assemblage as a whole.

Table 6.6: Percentages of Post-Member 6 Infill artefact types by weathering condition.

| **Type** | **Fresh** | **Slightly weathered** | **Weathered** | **Very Weathered** | **Total** |
|---|---|---|---|---|---|
| Small flaking debris <20mm | 44.58 | 9.57 | 5.42 | | 59.57 |
| Complete flakes ≥20mm | 1.81 | 1.26 | 0.72 | | 3.79 |
| Incomplete flakes ≥20mm | 9.57 | 2.53 | 0.90 | 0.18 | 13.18 |
| Core trimming flakes ≥20mm | 0.36 | | 0.18 | | 0.54 |
| Chunks ≥20mm | 5.78 | 2.53 | 2.53 | | 10.83 |
| Retouched pieces | 0.54 | 0.72 | 0.54 | | 1.81 |
| Cores | 1.26 | 1.08 | 3.97 | 0.36 | 6.68 |
| Core fragments | 0.90 | | 0.18 | | 1.08 |
| Bipolar cores | 0.36 | 0.36 | | | 0.72 |
| Bipolar core remains | 1.62 | | 0.18 | | 1.81 |
| **Total** | **66.79** | **18.05** | **14.62** | **0.54** | **100.0** |

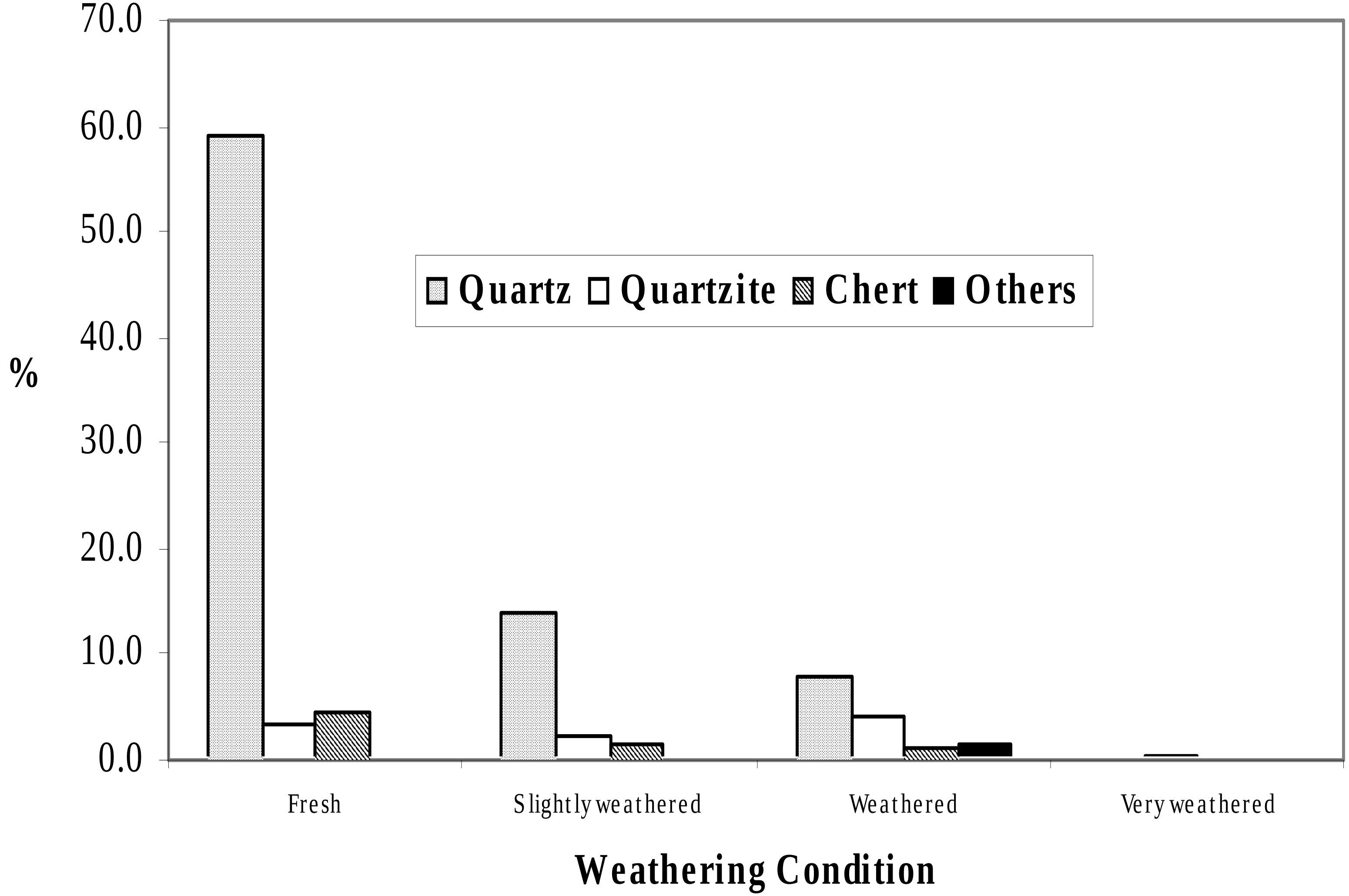


Figure 6.2: Post-Member 6 Infill artefact weathering conditions by raw material.

Table 6.7: Percentages of Post-Member 6 Infill weathering condition by stone tool raw material type.

| Raw material | Fresh | Slightly weathered | Weathered | Very weathered | Total |
|---|---|---|---|---|---|
| **Quartz** | 73.3 | 17.1 | 9.6 | | 100.0 |
| **Quartzite** | 32.1 | 23.2 | 41.1 | 3.6 | 100.0 |
| **Chert** | 61.0 | 22.0 | 17.1 | | 100.0 |
| **Others** | | 10.0 | 80.0 | 10.0 | 100.0 |

## 6.6 Raw material and flaking technology

Whenever diagnostic features were present, flaking technique was recorded as bipolar or freehand. Of the total of 51 cores or core fragments, 27% are bipolar, with 43% of the quartz cores showing bipolar flaking. Thus the cores indicate that, regardless of raw material, the majority of flaking technology is freehand. For flakes and chunks, the figures for freehand versus bipolar flaking are 88 freehand flaked, (21 complete flakes and 67 of the 73 incomplete flakes), and 10 bipolar flaked, (six incomplete flakes and four chunks), with 56 out of the 60 chunks being indeterminate for technique. Chunks, flake fragments and small flaking debris produced by shatter during bipolar flaking often do not show diagnostic features. Furthermore, only five quartz artifacts have clear evidence of freehand flaking (e.g., 6.3 a, 6.4 a and b). These observations show that figures for the percentage of bipolar pieces could well be an underestimation of the technique in an assemblage. The dominance of quartz in the bipolar category is apparent, and it may be due to the ease with which quartz cobbles and pebbles from the nearby gravels are flaked with this method. Freehand flaking is also relatively easier to identify on flakes, particularly with quartzite (e.g., Figures 6.3 b and c; 6.4 d; and 6.5).

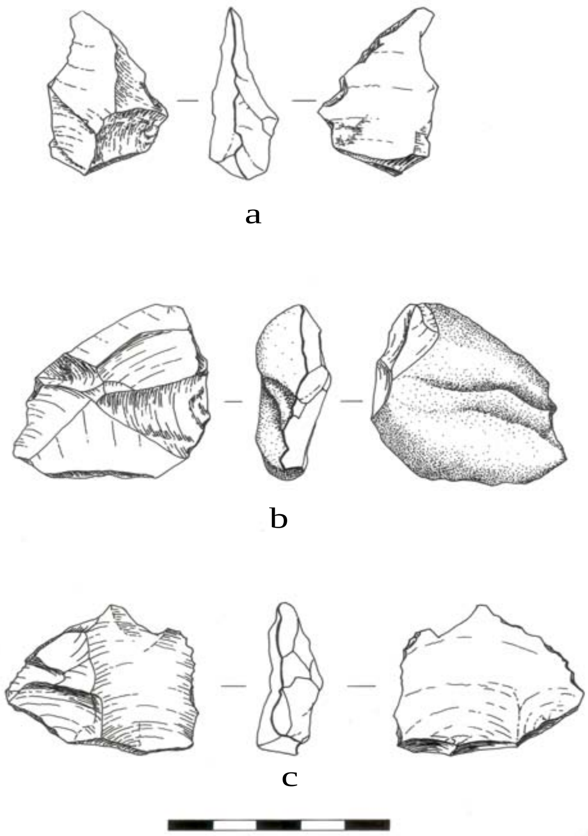


Figure 6.3: Post-Member 6 Infill flakes: (a) quartz flake, (b) quartzite flaked flake and (c) quartzite flake.

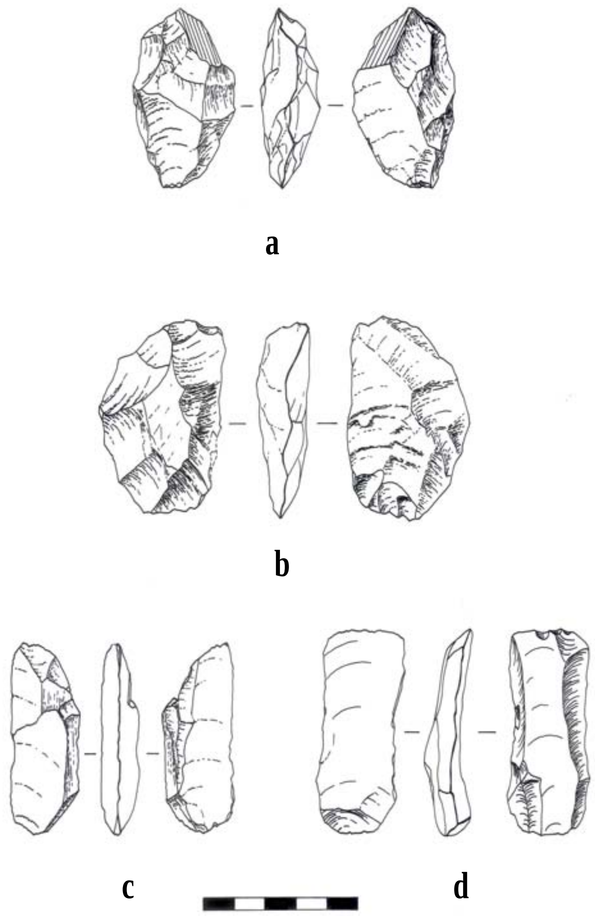


Figure 6.4: Selected Post-Member 6 Infill artefacts from the Post-Member 6 Infill: (a) quartz bifacially retouched piece, (b) quartz retouched flake fragment, (c) quartzite incomplete flake, possibly a bipolar flake and (d) a quartzite blade-like flake.

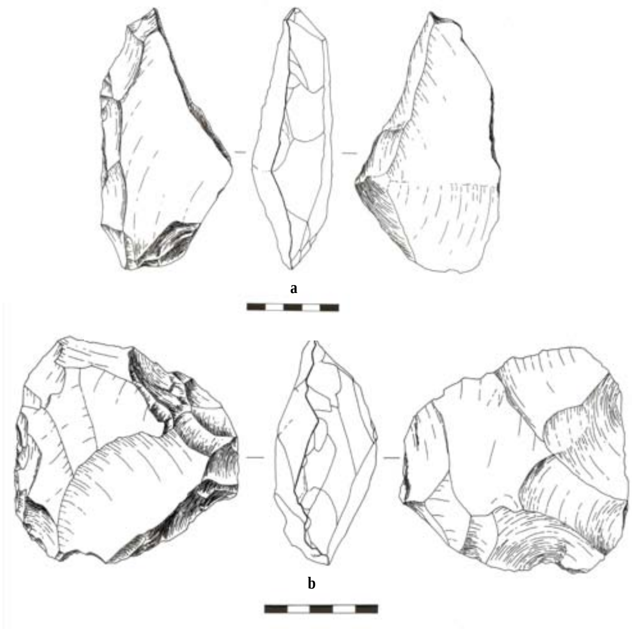


Figure 6.5: Post-Member 6 Infill artefacts: (a) Quartzite retouched large flake and (b) quartzite discoidal core.

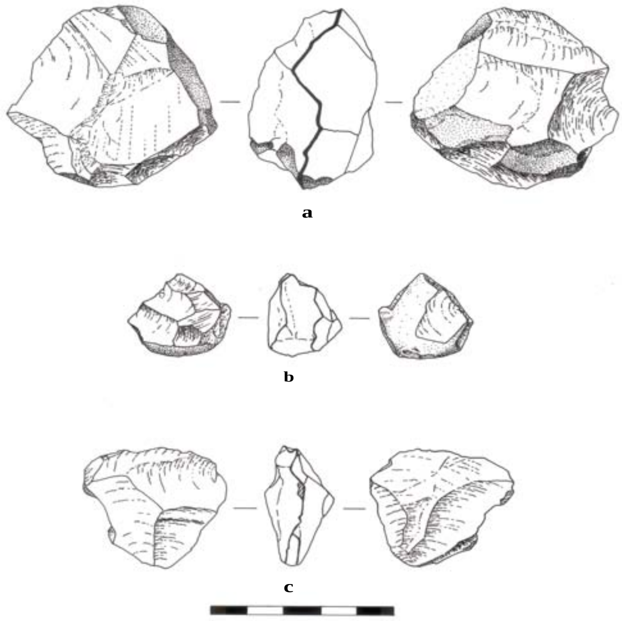


Figure 6.6: Post-Member 6 Infill cores: (a) quartz chopper core, (b) quartz single platform core and (c) quartz radial core.

Post-Member 6 Infill has a large proportion of bipolar pieces (2.3%) when compared to Member 5 West early Acheulean which has only two bipolar artifacts out of 3,245 pieces (Kuman *et al.*, 2005). This indicates that bipolar flaking is probably a significant MSA technique at the site. It is also more prominent in the MSA assemblage than in the Oldowan, which has only two bipolar artifacts out of 3,245 pieces. One quartz single platform core appears to have been made on a pebble, initially split by bipolar technique before being flaked from one platform (Figure 6.6b). It is thus possible that other quartz pebbles in the collection were also obtained from the river gravels and split by bipolar technique before being freehand-knapped, while larger quartz cobbles were directly freehand knapped, as in the case of the quartzite cores and large flake producing cores (Figure 6.5). The size differences for freehand knapped quartzite versus bipolar knapped quartz is not clear from the available data. It is, however, evident from the larger sizes of quartzite cobbles, cores and flakes that quartzite manuports were generally larger (larger than 60mm, mean = 67.4, median = 67 and standard deviation = 21.7) when collected for knapping, making then easily flaked by freehand technique. Quartz manuports, cores and flakes on the other hand are generally smaller (mean = 66.3, median = 62 and standard deviation = 18.5), and thus quartz cobbles may have been generally smaller when collected. The proportion of small flaking debris for quartz indicates that quartz was knapped at the site, as opposed to quartzite, which could be a mix of material both brought into the site during the MSA and those reworked from the Acheulean breccia.

## 6.7 Typological classification and the influence of raw materials

The assemblage has a variety of core types, with the majority composed of irregular cores (27.5%) and polyhedral cores (15.7%). It is difficult to distinguish the MSA from the ESA components from the data available for this study. Even though most of the cores are in quartz, the less extensively worked cores are abundant, but the most worked core types with many flake scars (discoids, single platform cores and core on flake) are in quartzite. There are only 10 retouched pieces in the assemblage. As all have miscellaneous (rather than formal) retouch, they do not provide any detail on formal tool types for this industry. Manuports and cores are better represented, but it is not certain how many of these may belong to the MSA or may derive from the Acheulean due to mixing of the younger incoming breccia with the older Acheulean breccia. Overall, the assemblage is informal in nature, but it is not possible to know if this is characteristic of the MSA industry to which it belongs (i.e., to an early MSA phase) or is due to the small size of the sample.

## 6.8 Conclusions

The MSA assemblage has a high percentage of small flaking debris, mostly in quartz, but the dominance of quartz is notable even if the small debris is eliminated from the count. The small flaking debris thus indicates that quartz was knapped at the site and is unlikely to have derived from reworked Acheulean breccia, which is winnowed of small material. The Acheulean on the other hand is dominated by large quartzite pieces. The quartzite components of the Post-Member 6 Infill are comparable to the early Acheulean assemblage in their large size, lack of small flaking debris and their more weathered condition of the pieces. The difference between the quartzite and quartz components of the Post-Member 6 Infill indicates that the quartzite component does not derive from the same source as the quartz component and bolsters the argument for mixing of the younger deposit with the older reworked early Acheulean. It has been noted that this mixing was minor, and hence the small degree of weathering, the lack of small flaking debris in quartzite, and the rarity of other quartzite tools.

This assemblage consists of a variety of stone tool types, including a variety of core types, many of which are indistinguishable from the Acheulean types.

The flaking technique is freehand dominated, but the proportion of bipolar flaked pieces is relatively larger than that for the older assemblages in the Sterkfontein Formation. This, together with an abundance of quartz as raw material, gives a unique character to the MSA at Sterkfontein that is different from the other industries in the Formation. Stone tool raw material has also contributed to the variety of core types in the assemblage, with some of the cores possibly being derived from decalcified early Acheulean breccia.

# Chapter 7

# Discussion and conclusions

New excavations of the western Sterkfontein breccias have provided a clean North-South stratigraphic profile. They have revealed the probable extension of Member 4 breccia to the far west of the site beyond the Member 5 West breccia, which we suggest formed within collapsed areas of late Member 4. The western profile preserves part of a small stalagmite boss in the southwestern corner and a flowstone in the south. Together, this stalagmite boss and the flowstone form a flowstone curtain between Member 4 hanging remnant in the South and the southwestern area of Member 5 West (Clarke, 1994). Compared to the Member 5 West capping flowstone, which directly succeeded the Acheulean breccia in its formation, these flowstones are older and appear to have formed after collapse of Member 4 and against the hanging remnant of this early breccia. These stalagmites thus formed prior to both the deposition of the Member 5 West breccia and its subsequent capping flowstone. Later, Member 5 was overlain by the fine chocolate brown Member 6 breccia, visible in the northern profile and in a small remnant at the northern end of the western profile. The confirmation of the relative stratigraphic positioning of these two flowstones will facilitate possible palaeomagnetic dating of the western area on these flowstones, providing more accurate relative age-bracket for Member 5. This kind of age estimate will help the correlation of the western area of the site to the better studied eastern area.

This study also revealed that Member 5 West breccia consists of at least three types of deposits, which are, from bottom to top, a coarse pink breccia, a fine orange-brown breccia and a yellowish microfauna-rich breccia (Figures 3.2 and 3.4). Large quartzite cores that are characteristic of the Member 5 West early Acheulean are visible *in situ* in these different breccia types, indicating their antiquity and their early Acheulean association. This implies that the Member 5 West early Acheulean was deposited in different phases in a manner similar to that suggested for Member 4 (Partridge, 1978). The pinkish coarse Member 5 West breccia is overlain by the fine orange-brown breccia and later by the microfauna breccia. Robinson (1962) postulated that the fossil cavern was completely filled with Member 4 deposit, while Kuman and Clarke (2000) suggested that the deposition of Member 4 deposits occurred at different periods, with an earlier more forested environment fauna and a later deposit of relatively more open grassland fauna (the STW 53 Infill). The deposition scenario suggested by Partridge (1978) thus provides a model for better understanding of Member 5 sequential infills.

After the filling of the fossil cavern with Member 4 deposit, collapse occurred in the central and western area, leaving a hanging remnant of Member 4 to the southwest and west. Dripstone formed over the Member 4 hanging remnant, which has been called the StW 53 Infill, forming stalactite curtains over Member 4 breccia in the west and filling cracks in the Member 4 deposit. Excavations by Clarke (1994) have revealed that the next event was the formation of a relatively narrow, shaft-like entrance over the central area, through which the deposition of the Oldowan Infill occurred. This later widened to allow entrance of the early Acheulean deposits (Clarke, 1994; Kuman and Clarke, 2000). At some point, the Acheulean deposits filled the westernmost area of the cave, resulting in the current western profile. Here, owls roosted on a ledge below the dolomite roof overhang, and thus there was an accumulation of owl pellets that formed the microfauna breccia.

The microfauna breccia later filled the entire space under the dolomite roof in this area, filling the spaces between the 'finger-like' stalactites that curtained the older Member 4 breccia. This entrance was in turn choked and there was deposition of the capping flowstone over the early Acheulean breccia under the dolomite roof towards the north, leaving a limited space under the roof, which was later filled by the Member 6 breccia (Robinson, 1962). Further collapse of these breccias into the lower cave occurred, probably due to wetter conditions, which is correlated with the presence of some water-dependent taxa in the younger deposits (Reynolds *et al.*, 2007). These events led to the decalcification of Member 5 early Acheulean breccia in the northwestern area between grid lines 58 and 63, and a channel was formed. This channel was then filled with Post-Member 6 Infill, much of which lies in the Lincoln Cave, which connects with the Post-Member 6 area. Some artefacts from the decalcified Member 5 West early Acheulean breccia were redeposited with these younger incoming deposits in the Post-Member 6 Infill and the Lincoln Cave during the Middle Stone Age period.

The present analysis of the Member 6 fauna from earlier excavations shows that this is a sample of grassland taxa, including medium-sized cat and one baboon previously not identified in the faunal list given by Brain (1981). The Member 6 faunal assemblage also has signs of both carnivore and hominid modification, indicating both as agents of accumulation, as earlier suggested by Brain. This study has examined the fracture edge morphology of the long bones and long bone shaft fragments in this assemblage to establish the accumulator and the timing of breakage of bones in the assemblage. Results indicate that the assemblage has mainly fresh broken fracture morphology (52% oblique angles and 60% curved outline) and modification marks of both a carnivore and hominid ravaged assemblage. Circumference analysis, however, reveals a non-hyaena broken assemblage (83% less than complete circumferences), suggesting a mostly hominid hammerstone percussion broken assemblage, and therefore implies that hominids were the main accumulating agent. This kind of splintering can also be produced by post-depositional destruction, but the presence of hominid hammerstone percussion marks and notches together with carnivore tooth marks and notches indicates that both agents were involved in the accumulation and modification of at least part of the assemblage. A portion of the sample could also have been accumulated by slopewash and by porcupines.

Given the restricted area under the dolomite roof in which Member 6 was deposited, it is unlikely that the bones were deposited directly in the cave by hominids, as this cave area was too vertically restricted for hominid occupation. Hominid stone tool modified and fractured bones identified in this assemblage may have accumulated in the cave from the landscape above through slopewash, fluvial action and gravitation. The cave may, however, have been suitable for carnivore denning as hyaenas can occupy low caves and burrows. There is, however, no indication of carnivore denning in the faunal assemblage in the form of juvenile and small carnivore remains or coprolites. Lack of evidence for denning carnivore activity in Member 6 does not preclude carnivore denning in the cave, but indicate only that the signs were not preserved. It is, however, more likely that the Member 6 fauna was accumulated by multiple agents, including carnivores, hominids and porcupines outside the cave before material was washed into the cave.

The Post-Member Infill fauna suggests a diverse animal community indicative of savannah mosaic environments with savannah-woodland and grassland habitats near permanent water sources, such as swamps or a perennial stream. Such a mosaic is shown by taxa such as bushbuck, springbok, lechwe and waterbuck. This assemblage also exhibits porcupine, carnivore and hominid influence in its modification and accumulation. Signs of hominid accumulation include butchery-modified bones on at least a portion of the assemblage. Stone tools and hominid-modified bones may have been deposited in the cave from the landscape above by abiotic forces, such as slopewash and gravitation. Some of the hominid-modified bones may also have been deposited in the cave by carnivores and porcupines. Although the frequencies of stone tool modifications are much lower than those established for simulated hominid accumulations and modern hunter/gatherer assemblages (Bunn, 1983a,b; Gifford *et al.*, 1980; Crader, 1981; Bunn *et al.*, 1988), they are relatively frequent considering the taphonomic history of this assemblage and the sample size. Stone tool modification in this assemblage is thus considered to fall within the expected range for hominid accumulated assemblages, indicating hominid activity in accumulation of this assemblage. Most of the carnivore tooth marks are on long bone shaft fragments indicating that carnivores probably acquired the carcasses or parts thereof before hominids broke them open for marrow as carnivores are unlikely to gnaw on bones that have been previously broken by hominids (Marean, 1991).

Hominid stone tool cutmarks and hammerstone percussion marks are found on marginal parts such as phalanges, indicating secondary access to these bones. The incidence of butchery marks and carnivore tooth marks on the different skeletal parts indicates that they may have been gaining access to each other's food or food remains. Carnivore occupation is indicated by coprolites and juvenile carnivore remains, especially juvenile hyaena, and by the carnivore-modified bones (Mills and Mills, 1977; Brain, 1981; Mills, 1990; Klein *et al.*, 1991; Pickering, 2002). More than half of the bone (56.7%, N=1304) in this assemblage preserves less than 100% of their circumference indicative of accumulation agents other than hyaena. In addition, fracture edge morphology indicates a mostly fresh broken assemblage in the form of 52% oblique angles and 65% curved outline (Villa and Mahieu, 1991). The presence of porcupine remains and porcupine-modified bones suggests suitability of the cave for porcupine occupation. The cave had filled up almost to the roof, thus providing easy access for carnivores and porcupines (Pickering, 2002), but it may have been too low for hominid occupation. It is likely that carnivores and hominids accumulated bones around the cave at different times or used different entrances to different parts of the cave. It is also possible that both carnivores and hominids used areas adjacent to the cave entrance as living and feeding sites, leaving food remains and other signs of activity around the cave entrance in the form modified bones, coprolites and stone tools, which were later washed into the cave. Alternatively denning areas may have been available for carnivores in the cave, with hominids accumulating modified bones on the land surface above. It is most likely that the Post-Member 6 Infill faunal assemblage was accumulated partly by hominids who left bones and tools near the cave entrance and partly by carnivores and porcupines using the cave and areas around the cave.

The Post-Member 6 Infill artefact assemblage has neither MSA nor Acheulean diagnostic pieces, except for the MSA diagnostic artefacts from the adjacent and apparently connected Lincoln Cave South. However, it differs from the Member 5 West early Acheulean in the high proportion of small flaking debris, general freshness of artefacts and the dominance of quartz as the stone tool making raw material. This assemblage is similar to the Lincoln Cave South that has MSA diagnostic artefacts and is dated by proxy to the MSA period in all these respects. Therefore, this assemblage is assigned to the MSA period in age. It is apparent that the connection with Lincoln Cave South through the excavated tunnel area in the northern profile is further proof that this assemblage is MSA in age and appears to comprise the upper portion of the Lincoln Cave South breccia. The Lincoln Cave North deposit with the Acheulean-like cores and fauna has Uranium Series dates of between 252,600 $\pm$ 35,600kya and 116 $\pm$ 7700kya on sandwiching flowstones (Reynolds *et al.*, 2003) and this is well within the MSA.

## 7.1 Conclusion

This study has clarified the stratigraphy of the western breccias and shown that Member 4 breccia exists in the far western parts of the current excavated surface probably beyond the current Member 5 West profile. The analysis of the Member 6 and Post-Member 6 Infill faunal assemblages have provided more information on taxa variety and modes of accumulation and the assemblage modifiers. This study has in turn helped to show that the Post-Member 6 Infill fauna is more diverse than was previously indicated from the analysis of a limited sample from squares L63 and M63 of the assemblage. The larger artefact sample from the Post-Member 6 Infill analysed during this study has shown that this younger assemblage has more features in common with the Lincoln Cave South than with the early Acheulean. However, Post-Member 6 and the Lincoln Cave have Acheulean-like cores and some large flakes which are like those in early Acheulean in Member 5 West, and these must result from re-working and re-deposition of the older element with the younger incoming deposits.

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# Appendix A

# Post-Member 6 Infill Artefact and Fauna provenances

## A.1 Post-Member 6 Infill fauna squares

## A.2 Post-Member 6 Infill fauna depths

## A.3 Sterkfontein Middle Stone Age artefact squares

## A.4 Sterkfontein Middle Stone Age artefact depths

Table A.1: Post-Member 6 Infill fauna provenances by squares.

| **Square** | **58** | **59** | **60** | **61** | **62** | **63** | **64** | **MIXED** | **Total** |
|---|---|---|---|---|---|---|---|---|---|
| **H** | | | | | 93 | 7 | | | **100** |
| **I** | | | | | 74 | 12 | | | **86** |
| **J** | | | | | 270 | 159 | | | **429** |
| **K** | | | | | 205 | 342 | | | **546** |
| **L** | | | | 3 | 282 | 426 | | 32 | **743** |
| **M** | | | 103 | 310 | 214 | 242 | 84 | 13 | **966** |
| **N** | | 162 | 129 | 25 | 9 | 71 | 11 | | **407** |
| **O** | | 8 | 89 | 42 | 17 | 61 | | | **217** |
| **P** | 29 | 108 | 51 | 63 | 13 | | 8 | | **272** |
| **Q** | 45 | 15 | | 4 | | | | | **64** |
| **Total** | **74** | **293** | **372** | **447** | **1177** | **1320** | **103** | 45 | **3831** |

Table A.2: Post-Member 6 Infill fauna provenances by depths. Depth in feet (').

| **Square** | **58** | **59** | **60** | **61** | **62** | **63** | **64** | **Total** |
|---|---|---|---|---|---|---|---|---|
| **Depth** | | | | | | | | |
| **2 - 6** | | | 3 | | | | | **3** |
| **6 - 8** | | | | | | 6 | | **6** |
| **8 -10** | | 3 | 10 | 4 | 7 | 8 | 69 | **101** |
| **10-12** | | 9 | 29 | 88 | 10 | 146 | 45 | **327** |
| **12-14** | 14 | 14 | 77 | 33 | 102 | 433 | 10 | **683** |
| **14-16** | 3 | 62 | 83 | 162 | 277 | 307 | | **894** |
| **16-18** | 2 | 31 | 67 | 107 | 456 | 129 | | **792** |
| **18-20** | 11 | 64 | 12 | 53 | 182 | 31 | | **353** |
| **20-22** | 12 | 99 | 64 | | 144 | 22 | | **341** |
| **22-24** | 23 | 6 | 27 | | | 10 | | **66** |
| **24-26** | 4 | 3 | | | | | | **7** |
| **MIXED** | | | | | | 46 | 44 | **90** |
| **Total** | **74** | **293** | **372** | **447** | **1177** | **1320** | **168** | **3831** |

Table A.3: Sterkfontein Middle Stone Age artefact provenances by squares.

| **Square** | **58** | **59** | **60** | **61** | **62** | **63** | **64** | **Total** |
|---|---|---|---|---|---|---|---|---|
| **I** | | | | | 1 | 1 | | **2** |
| **J** | | | | | 1 | 5 | | **6** |
| **K** | | | | | 2 | 8 | 2 | **10** |
| **L** | | | | | 2 | 4 | | **6** |
| **M** | | | 18 | 23 | 7 | 34 | | **72** |
| **N** | | 10 | 111 | 15 | 1 | 24 | | **161** |
| **O** | | 66 | 119 | 14 | 1 | | | **190** |
| **P** | 3 | 8 | 30 | 50 | 2 | | | **93** |
| **Q** | 10 | 1 | 1 | 1 | | | | **13** |
| **Total** | **13** | **85** | **279** | **103** | **17** | **76** | **2** | **608** |

Table A.4: Sterkfontein Middle Stone Age artefact provenances by depth. Depth in feet (').

| **Square** | **58** | **59** | **60** | **61** | **62** | **63** | **64** | **Total** |
|---|---|---|---|---|---|---|---|---|
| **Depth** | | | | | | | | |
| **6 - 8** | | 2 | | | | | 1 | **3** |
| **10-12** | | | 4 | | | | 1 | **5** |
| **10-12** | 1 | 2 | 9 | 15 | 1 | 19 | | **47** |
| **12-14** | | 3 | 3 | 30 | | 52 | | **88** |
| **14-16** | 1 | 9 | 9 | 20 | 4 | 16 | | **59** |
| **16-18** | 6 | 14 | 7 | 45 | 25 | 8 | | **105)** |
| **18-20** | 5 | 19 | 48 | 12 | 3 | 2 | | **89** |
| **20-22** | | 9 | 101 | | | 1 | | **111** |
| **22-24** | | 24 | 41 | | | | | **65** |
| **24-26** | | 5 | | | | | | **5** |
| **Total** | **13** | **87** | **222** | **141** | **33** | **96** | **2** | **608** |

# Appendix B

# List of identified Fauna from Member 6 at Sterkfontein Caves

## B.1 Member 6 Infill fauna

## B.2 Identified fauna from Member 6 Infill

Table B.1: Member 6 Infill fauna sample

| **Taxon** | **Brains sample** | **Current sample** | **New specimens** | **Not found** |
|---|---|---|---|---|
| Primates | | 2 | | |
| Carnivore | 9 | 13 | 4 | |
| Artiodactyla | | | | |
| *Antidorcas* | 2 | 2 | | |
| *Damaliscus* | 1 | 1 | | |
| *Connochaetes* | 1 | 1 | | |
| Size Class 1 | 10 | 20 | | |
| Size Class 2 | 37 | 63 | 16 | |
| Size Class 3 | 19 | 29 | 10 | |
| Perissodactyla | | | | |
| Equdae | 6 | 5 | | 1 |
| Hyracoidea | 5 | 4 | | 1 |
| Rodentia | | | | |
| Hystricidae | 2 | 3 | 1 | |
| indet. Rodents | | 9 | 9 | |
| Bone Flakes (LBSF) | | | | |
| 1-2cm | 17 | 15 | | 3 |
| 2-3cm | 112 | 109 | | 7 |
| 3-4cm | 85 | 77 | | 8 |
| 4-5cm | 41 | 34 | | 7 |
| 5-6cm | 17 | 10 | | 7 |
| 6-7cm | 8 | 8 | | |
| 7-8cm | 7 | 4 | | 3 |
| >8cm | 3 | 5 | 2 | |
| In Breccia (not measured) | | 8 | 8 | |
| **Total** | **454** | **466** | **50** | **37** |

Table B.2: Identified fauna from Member 6 Infill

| **Catalogue No.** | **Level** | **Element** | **Portion** | **Side** | **Taxon** |
|---|---|---|---|---|---|
| SE 2046 | DECALCIFIED | HUM | shaft frag | R | *Papio* sp. |
| SE 731 | DECALCIFIED | PHAL I | | L | *Papio* sp. |
| SE 864 | DECALCIFIED | HUM | dist. | L | Medium-sized Felid |
| SE 1423 | DECALCIFIED | ULNA | prox frag | R | CANID |
| SE 2109 | DECALCIFIED | MTP | dist. | | CANIS |
| | DECALCIFIED | M3 | | R | *Parahyaena brunnea* |
| SE 2329 | DECALCIFIED | C | | R | *Parahyaena brunnea* |
| SE 2299 | DECALCIFIED | I | | R | *Parahyaena brunnea* |
| SE 2059 | DECALCIFIED | TIB | dist. Shaft frag | L | M.CARN |
| SE 2062 | DECALCIFIED | MTC | prox. | R | M.FELID |
| SE 1140 | DECALCIFIED | MTT | | | S.CARN |
| SE 2065 | DECALCIFIED | MTT | | | S.CARN |
| SE 2095 | DECALCIFIED | MTC | | R | S.FELID |
| SE 2064 | DECALCIFIED | FEM | | | S.MAMM |
| SE 2104 | DECALCIFIED | 1/2 MAND | | L | VIVERRIDAE |
| SE 686 | DECALCIFIED | MOLAR | | | EQUID |
| SE 693 | DECALCIFIED | MOLAR | frag | | EQUID |
| SE 795 | DECALCIFIED | M3 | | | EQUID |
| SE 704 | DECALCIFIED | TOOTH | frag | | EQUID |
| SE 818 | DECALCIFIED | TOOTH | frag | | EQUID |
| SE 996 | DECALCIFIED | CRAN | frag | | BOV I |
| SE 837 | DECALCIFIED | CALC | dist. Frag | L | BOV I |
| SE 723 | DECALCIFIED | HUM | dist. | R | BOV I |
| SE 2202 | DECALCIFIED | HUM | dist. Cond. | R | BOV I |
| SE 863 | DECALCIFIED | MTP | dist. | | BOV I |
| SE 702 | DECALCIFIED | TIB | dist shaft frag | L | BOV I |
| SE 698 | DECALCIFIED | FEM | shaft frag | R | BOV I |
| SE 707 | DECALCIFIED | FEM | shaft frag | | BOV I |
| SE 845 | DECALCIFIED | FEM | shaft frag | | BOV I |
| SE 2066 | DECALCIFIED | HUM | shaft frag | | BOV I |
| SE 133 | DECALCIFIED | LBSF | | | BOV I |

| **Catalogue No.** | **Level** | **Element** | **Portion** | **Side** | **Taxon** |
|---|---|---|---|---|---|
| SE 1907 | DECALCIFIED | LBSF | | | BOV I |
| SE 2103 | DECALCIFIED | LBSF | | | BOV I |
| SE 834 | DECALCIFIED | LBSF | | | BOV I |
| SE 838 | DECALCIFIED | LBSF | | | BOV I |
| SE 965 | DECALCIFIED | MTC | | R | BOV I |
| SE 720 | DECALCIFIED | 1/2 PEL | | | BOV I |
| SE 984 | DECALCIFIED | PHAL II | | | BOV I |
| SE 376 | DECALCIFIED | RIB | frag | | BOV I |
| SE 2080 | DECALCIFIED | RAD | shaft frag | | BOV I |
| SE 2312 | DECALCIFIED | RAD | shaft frag | | BOV I |
| SE 2093 | DECALCIFIED | RIB | frag | | BOV I |
| SE 712 | DECALCIFIED | SCAP | ridge frag | | BOV I |
| SE 870 | DECALCIFIED | SCAP | ridge frag | | BOV I |
| SE 855 | DECALCIFIED | THOR | neural spine | | BOV I |
| SE 846 | DECALCIFIED | FEM | shaft frag | | BOV I |
| SE 1059 | DECALCIFIED | LBSF | | | BOV I |
| SE 1899 | DECALCIFIED | LBSF | | | BOV I |
| SE 690 | DECALCIFIED | MAND | frag | R | *Antidorcas* sp. |
| SE 691 | DECALCIFIED | TIB | prox | L | *Antidorcas* sp. |
| SE 692 | DECALCIFIED | MOLAR | | R | *Antidorcas* sp. |
| SE 1318 | DECALCIFIED | MAX | frag | R | *Damaliscus* sp. |
| SE 1419 | DECALCIFIED | CALC | frag | | BOV II |
| SE 924 | DECALCIFIED | CALC | frag | R | BOV II |
| SE 2336 | DECALCIFIED | CALC | frag | L | BOV II |
| SE 904 | DECALCIFIED | CERV | frag | | BOV II |
| SE 1785 | DECALCIFIED | HUM | dist. | L | BOV II |
| SE 1442 | DECALCIFIED | HUM | dist. Shaft frag | L | BOV II |
| SE 1446 | DECALCIFIED | HUM | dist. Shaft frag | R | BOV II |
| SE 2036 | DECALCIFIED | HUM | dist. Shaft | R | BOV II |
| SE 860 | UPPER BRECCIA | HUM | dist. Shaft | L | BOV II |

| Catalogue No. | Level | Element | Portion | Side | Taxon |
|---|---|---|---|---|---|
| SE 2096 | DECALCIFIED | HUM | dist. Shaft frag | R | BOV II |
| SE 848 | DECALCIFIED | HUM | dist. Shaft frag | R | BOV II |
| SE 865 | DECALCIFIED | HUM | dist. Shaft frag | R | BOV II |
| SE 2316 | DECALCIFIED | MTC | dist. Shaft frag | | BOV II |
| SE 1683 | DECALCIFIED | MTP | dist. | | BOV II |
| SE 1451 | DECALCIFIED | MTP | dist. Cond. | | BOV II |
| SE 2347 | DECALCIFIED | MTP | dist. Cond. | | BOV II |
| SE 2310 | DECALCIFIED | MTT | dist. | | BOV II |
| SE 836 | DECALCIFIED | PHAL I | dist. | | BOV II |
| SE 691 | DECALCIFIED | TIB | dist. Shaft frag | L | BOV II |
| SE 2370 | DECALCIFIED | FEM | head | | BOV II |
| SE 823 | DECALCIFIED | FEM | shaft | L | BOV II |
| SE 858 | DECALCIFIED | FEM | shaft | R | BOV II |
| SE 2058 | DECALCIFIED | FEM | shaft frag | | BOV II |
| SE 2067 | DECALCIFIED | FEM | shaft frag | | BOV II |
| SE 2068 | DECALCIFIED | FEM | shaft frag | | BOV II |
| SE 2297 | DECALCIFIED | FEM | shaft frag | | BOV II |
| SE 2333 | DECALCIFIED | FEM | shaft frag | | BOV II |
| SE 800 | DECALCIFIED | FEM | shaft frag | | BOV II |
| SE 813 | DECALCIFIED | FEM | shaft frag | L | BOV II |
| SE 820 | DECALCIFIED | FEM | shaft frag | | BOV II |
| SE 1142 | DECALCIFIED | HORN | frag | | BOV II |
| SE 2086 | DECALCIFIED | HORN | frag | | BOV II |
| SE 2302 | DECALCIFIED | HUM | shaft frag | L | BOV II |
| SE 2309 | DECALCIFIED | HUM | shaft frag | L | BOV II |
| SE 697 | DECALCIFIED | 1/2 PEL | frag | L | BOV II |
| SE 438 | DECALCIFIED | 1/2 MAND | frag | | BOV II |
| SE 939 | DECALCIFIED | 1/2 MAND | frag | | BOV II |
| SE 1139 | DECALCIFIED | MTC | shaft frag | | BOV II |
| SE 2374 | DECALCIFIED | MTC | shaft frag | | BOV II |
| SE 891 | DECALCIFIED | MTP | shaft | | BOV II |

| Catalogue No. | Level | Element | Portion | Side | Taxon |
|---|---|---|---|---|---|
| SE 2363 | DECALCIFIED | MTP | shaft frag | | BOV II |
| SE 819 | DECALCIFIED | MTP | shaft frag | | BOV II |
| SE 980 | DECALCIFIED | MTP | shaft frag | | BOV II |
| SE 692 | DECALCIFIED | MTT | shaft | | BOV II |
| SE 792 | DECALCIFIED | MTT | shaft | | BOV II |
| SE 2065 | DECALCIFIED | MTT | shaft frag | | BOV II |
| SE 2307 | UPPER BRECCIA | MTT | shaft frag | L | BOV II |
| SE 2343 | DECALCIFIED | MTT | shaft frag | | BOV II |
| SE 2344 | DECALCIFIED | MTT | shaft frag | | BOV II |
| SE 2381 | DECALCIFIED | MTT | shaft frag | | BOV II |
| SE 834 | DECALCIFIED | MTT | shaft frag | | BOV II |
| SE 956 | DECALCIFIED | OCC | cond. | | BOV II |
| SE 2380 | DECALCIFIED | OS PET | | | BOV II |
| SE 1150 | DECALCIFIED | 1/2 PEL | frag | | BOV II |
| SE 1539 | DECALCIFIED | 1/2 PEL | frag | R | BOV II |
| SE 1798 | DECALCIFIED | PHAL I | | | BOV II |
| SE 2303 | DECALCIFIED | PHAL I | | | BOV II |
| SE 869 | DECALCIFIED | PHAL I | | | BOV II |
| SE 900 | DECALCIFIED | PHAL I | | | BOV II |
| SE 878 | DECALCIFIED | PHAL I | | | BOV II |
| SE 861 | DECALCIFIED | PHAL II | | | BOV II |
| SE 981 | DECALCIFIED | PHAL II | | | BOV II |
| SE 2062 | DECALCIFIED | FEM | prox. Shaft frag | | BOV II |
| SE 2076 | DECALCIFIED | FEM | prox. Shaft frag | | BOV II |
| SE 2311 | DECALCIFIED | MTP | prox. | R | BOV II |
| SE 2298 | DECALCIFIED | MTT | prox. | R | BOV II |
| SE 2322 | DECALCIFIED | MTT | prox. | R | BOV II |
| SE 1907 | DECALCIFIED | LBSF | | | BOV I |
| SE 2103 | DECALCIFIED | LBSF | | | BOV I |
| SE 834 | DECALCIFIED | LBSF | | | BOV I |
| SE 838 | DECALCIFIED | LBSF | | | BOV I |

| Catalogue No. | Level | Element | Portion | Side | Taxon |
|---|---|---|---|---|---|
| SE 965 | DECALCIFIED | MTC | | R | BOV I |
| SE 720 | DECALCIFIED | 1/2 PEL | | | BOV I |
| SE 984 | DECALCIFIED | PHAL II | | | BOV I |
| SE 376 | DECALCIFIED | RIB | frag | | BOV I |
| SE 2080 | DECALCIFIED | RAD | shaft frag | | BOV I |
| SE 2312 | DECALCIFIED | RAD | shaft frag | | BOV I |
| SE 2093 | DECALCIFIED | RIB | frag | | BOV I |
| SE 712 | DECALCIFIED | SCAP | ridge frag | | BOV I |
| SE 870 | DECALCIFIED | SCAP | ridge frag | | BOV I |
| SE 855 | DECALCIFIED | THOR | neural spine | | BOV I |
| SE 846 | DECALCIFIED | FEM | shaft frag | | BOV I |
| SE 1059 | DECALCIFIED | LBSF | | | BOV I |
| SE 1899 | DECALCIFIED | LBSF | | | BOV I |
| SE 2352 | DECALCIFIED | MTT | prox. Shaft frag | R | BOV II |
| SE 2362 | DECALCIFIED | MTT | prox. Shaft frag | R | BOV II |
| SE 1247 | DECALCIFIED | PHAL I | | | BOV II |
| SE 1890 | DECALCIFIED | PHAL I | | | BOV II |
| SE 668 | UPPER BRECCIA | PHAL I | | | BOV II |
| SE 605 | DECALCIFIED | RIB | frag | | BOV II |
| SE 907 | DECALCIFIED | RIB | frag | | BOV II |
| SE 2325 | DECALCIFIED | TIB | shaft frag | R | BOV II |
| SE 688 | DECALCIFIED | TIB | shaft frag | L | BOV II |
| SE 2351 | DECALCIFIED | PUB | frag | L | BOV II |
| SE 2048 | DECALCIFIED | PUB | frag | L | BOV II |
| SE 1887 | DECALCIFIED | RAD | shaft frag | L | BOV II |
| SE 1892 | DECALCIFIED | RAD | shaft frag | L | BOV II |
| SE 948 | DECALCIFIED | RAD | shaft frag | L | BOV II |
| SE 2386 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 1002 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 1014 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 1062 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 2069 | DECALCIFIED | RIB | shaft frag | | BOV II |

| Catalogue No. | Level | Element | Portion | Side | Taxon |
|---|---|---|---|---|---|
| SE 2078 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 433 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 819 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 843 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 868 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 875 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 886 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 892 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 909 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 910 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 911 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 913 | DECALCIFIED | RIB | shaft frag | | BOV II |
| SE 2331 | DECALCIFIED | SCAP | blade frag | | BOV II |
| SE 833 | DECALCIFIED | SCAP | blade frag | | BOV II |
| SE 838 | DECALCIFIED | SCAP | blade frag | L | BOV II |
| SE 1889 | DECALCIFIED | SCAP | glenoid | R | BOV II |
| SE 1663 | DECALCIFIED | SCAP | blade frag | | BOV II |
| SE 927 | DECALCIFIED | SES | | | BOV II |
| SE 1162 | DECALCIFIED | TIB | shaft frag | R | BOV II |
| SE 2063 | DECALCIFIED | TIB | shaft frag | R | BOV II |
| SE 2073 | DECALCIFIED | TIB | shaft frag | | BOV II |
| SE 865 | DECALCIFIED | TIB | shaft frag | R | BOV II |
| SE 953 | DECALCIFIED | TIB | shaft frag | L | BOV II |
| SE 953 | DECALCIFIED | TIB | shaft frag | | BOV II |
| SE 2357 | DECALCIFIED | TOOTH | frag | | BOV II |
| SE 2378 | DECALCIFIED | TOOTH | frag | | BOV II |
| SE 2379 | DECALCIFIED | TOOTH | frag | | BOV II |
| SE 718 | DECALCIFIED | TOOTH | frag | | BOV II |
| SE 944 | DECALCIFIED | TOOTH | frag | | BOV II |
| SE 850 | DECALCIFIED | ULNA | frag | L | BOV II |

| Catalogue No. | Level | Element | Portion | Side | Taxon |
|---|---|---|---|---|---|
| SE 875 | DECALCIFIED | MOLAR | frag | | BOV II |
| SE 842 | DECALCIFIED | VERT | frag | | BOV II |
| SE 2305 | DECALCIFIED | VERT | frag | | BOV II |
| SE 2392 | DECALCIFIED | VERT | frag | | BOV II |
| SE 208 | DECALCIFIED | | | | BOV II |
| SE 2346 | DECALCIFIED | MTT | shaft frag | | BOV II |
| SE 1444 | DECALCIFIED | MOLAR | frag | | *Connochaetes* sp. |
| SE 2323 | DECALCIFIED | MTP | dist. | | BOV III |
| SE 1133 | DECALCIFIED | FEM | shaft frag | | BOV III |
| SE 816 | DECALCIFIED | HUM | shaft frag | R | BOV III |
| SE 737 | DECALCIFIED | MTC | shaft | | BOV III |
| SE 2353 | DECALCIFIED | MTC | shaft frag | | BOV III |
| SE 2340 | DECALCIFIED | MTP | shaft frag | | BOV III |
| SE 867 | DECALCIFIED | MTP | shaft frag | | BOV III |
| SE 1001 | DECALCIFIED | MTT | shaft frag | | BOV III |
| SE 2304 | DECALCIFIED | MTT | shaft frag | | BOV III |
| SE 2320 | DECALCIFIED | MTT | shaft frag | | BOV III |
| SE 2334 | DECALCIFIED | MTT | shaft frag | | BOV III |
| SE 2339 | DECALCIFIED | MTT | shaft frag | | BOV III |
| SE 2049 | DECALCIFIED | VERT | neural spine | | BOV III |
| SE 2249 | DECALCIFIED | MTC | prox. | R | BOV III |
| SE 2330 | DECALCIFIED | MTT | prox. | L | BOV III |
| SE 235 | DECALCIFIED | MTT | prox. frag | | BOV III |
| SE 847 | DECALCIFIED | RIB | prox. | | BOV III |
| SE 1137 | DECALCIFIED | RIB | prox. | | BOV III |
| SE 2052 | DECALCIFIED | TIB | prox. Shaft frag | R | BOV III |
| SE 2355 | DECALCIFIED | RIB | frag | | BOV III |
| SE 2168 | DECALCIFIED | RIB | shaft frag | | BOV III |

| Catalogue No. | Level | Element | Portion | Side | Taxon |
|---|---|---|---|---|---|
| SE 700 | DECALCIFIED | RIB | shaft frag | | BOV III |
| SE 2328 | DECALCIFIED | SCAP | glenoid | R | BOV III |
| SE 11 | DECALCIFIED | SCAP | blade frag | | BOV III |
| SE 2355 | DECALCIFIED | TIB | shaft frag | | BOV III |
| SE 2075 | DECALCIFIED | VERT | centrum frag | | BOV III |
| SE 359 | DECALCIFIED | MTT | prox. | | BOV IV |
| SE 458 | UPPER BRECCIA | TIB | shaft frag | | BOV IV |
| SE 707 | DECALCIFIED | TOOTH | | | *Lepus capensis* |
| SE 703 | DECALCIFIED | FEM | | R | *Procavia capensis* |
| SE 1050 | DECALCIFIED | P | | L | *Procavia capensis* |
| SE 806 | DECALCIFIED | 1/2 MAND | | L | *Procavia capensis* |
| SE 995 | DECALCIFIED | RAD | shaft frag | R | *Procavia capensis* |
| SE 994 | DECALCIFIED | I | | | *Hystrix africaeaustralis* |
| SE 921 | DECALCIFIED | I | frag | | *Hystrix africaeaustralis* |
| SE 928 | DECALCIFIED | TOOTH | | | *Hystrix africaeaustralis* |

# Appendix C

# List of identified bones from the Post-Member 6 Infill at Sterkfontein Caves

## C.1 Post-Member 6 Infill Fauna

Table C.1: Post-Member 6 Infill Fauna

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| StW 585 | L63 | | *C* | R | | *Homo sapien* |
| BP/3/33787 | K63 | | 1/2 MAND | L | Frag | *Cercopithecus aethiops* |
| BP/3/33853 | L63 | 16’6” - 17’6” | C | R | | *C. aethiops* |
| BP/3/34170 | L63 | 15’6” - 16’6” | HUM | L | dist. | *C. aethiops* |
| BP/3/33457 | M60 | 15’2” - 16’2” | ILL | R | Frag | *C. aethiops* |
| BP/3/33915 | K62 | 15’10” - 16’10” | M1 | L | | *C. aethiops* |
| BP/3/33411 | L62 | 14’5” - 15’5” | THOR | | | *C. aethiops* |
| BP/3/33082 | N59 | 21’0” - 22’0” | TIB | R | shaft frag | *C. aethiops* |
| BP/3/32871 | N59 | 16’0” - 17’0” | TIB | | | *C. aethiops* |
| BP/3/33537 | H62 | 21’10” - 22’10” | ULNA | L | shaft frag | *C. aethiops* |
| BP/3/18000 | L63+M63 | MIXED | CALC | | Frag | *C. aethiops* |
| BP/3/33605 | L62 | 14’5” - 15’5” | ULNA | | shaft frag | *C. aethiops* |
| SWP-2139 | O60 | 18’0” - 19’0” | 1/2 MAND | L | Frag | *Papio ursinus* |
| SWP-2145 | P58 | 20’10” - 21’10” | 1/2 MAND | L | Frag | *P. ursinus* |
| BP/3/33310 | P59 | 13’1” - 14’1” | 1/2 MAND | R | Frag | *P. ursinus* |
| SWP-2149 | O61 | 18’8” - 19’1” | ASTRAG | L | | *P. ursinus* |
| SWP-2791 | M62 | 17’11” - 18’11” | C | R | Frag | *P. ursinus* |
| S94-7694 | M61 | 12’8” - 13’8” | CALC | L | Frag | *P. ursinus* |
| SWP-2741 | O62 | 17’9” - 18’9” | CALC | | Frag | *P. ursinus* |
| S94-8291 | O62 | 17’9” - 18’9” | CALC | R | Frag | *P. ursinus* |
| BP/3/32426 | J62 | 19’10” - 20’10” | CERV | | Frag | *P. ursinus* |
| SWP 2152 | O59 | 16’6” - 17’6” | CRAN | | Frag | *P. ursinus* |
| SWP-2152 | O63 | 16’6” - 17’6” | CRAN | R | Frag | *P. ursinus* |
| S94-10064 | N60 | 13’9” - 14’9” | HUM | R | | *P. ursinus* |
| BP/3/17902 | L63 | 13’6” - 14’6” | I | R | | *P. ursinus* |
| BP/3/33188 | N60 | 22’9” - 23’9” | I1 | L | | *P. ursinus* |
| SWP-2138 | O63 | 20’6” - 21’6” | M+P | | | *P. ursinus* |
| SWP-2143 | O63 | 22’6” - 23’6” | M1 | R | | *P. ursinus* |
| SWP-2146 | O60 | 17’0” - 18’0” | P4 | L | Frag | *P. ursinus* |
| BP/3/19236 | P59 | 8’1” - 9’1” | TIB | L | | *P. ursinus* |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/18076 | L63 | 14’6” - 15’6” | C | L | Frag | *Acynonix Jubatus* |
| BP/3/32320 | K63 | 15’10” - 16’10” | C | R | | *Parahyaena bruunea* |
| BP/3/33603 | L62 | 14’5” - 15’5” | DP | R | | *P. bruunea* |
| BP/3/33604 | L62 | 14’5” - 15’5” | DP | L | | *P. bruunea* |
| BP/3/17899 | L63 | 13’6” - 14’6” | M1 | L | | *P. bruunea* |
| BP/3/17900 | L63 | 13’6” - 14’6” | P2 | L | | *P. bruunea* |
| BP/3/34169 | L63 | 15’6” - 16’6” | ASTRAG | R | Frag | *Canis mesomelas* |
| BP/3/34464 | K62 | 20’10” - 21’10” | ATLAS | | | *C. mesomelas* |
| BP/3/34490 | K62 | 17’10” - 18’10” | C | L | | *C. mesomelas* |
| S94-7803 | Q59 | 15’0” - 16’0” | CERV | | | *C. mesomelas* |
| BP/3/34128 | K63 | | FEM | R | head | *C. mesomelas* |
| BP/3/32343 | K63 | 15’10” - 16’10” | I1 | R | | *C. mesomelas* |
| BP/3/34550 | K62 | 18’10” - 19’10” | M1 | L | | *C. mesomelas* |
| BP/3/32299 | K63 | 17’0” - 18’0” | M1 | L | Frag | *C. mesomelas* |
| BP/3/33851 | L63 | 16’6” - 17’6” | M1 | R | Frag | *C. mesomelas* |
| BP/3/34674 | K63 | 17’0” - 18’0” | M2 | L | | *C. mesomelas* |
| BP/3/34476 | K62 | 17’10” - 18’10” | MTC III | R | | *C. mesomelas* |
| BP/3/33406 | J62 | 16’10” - 17’10” | ORB | L | Frag | *C. mesomelas* |
| BP/3/18244 | M62 | 17’11” - 18’11” | P | R | Frag | *C. mesomelas* |
| BP/3/33262 | L62 | 17’5” - 18’5” | P2 | R | | *C. mesomelas* |
| S94-14783 | L63 | 12’6” - 13’6” | P2 | L | | *C. mesomelas* |
| BP/3/34542 | K62 | 18’10” - 19’10” | P3 | R | | *C. mesomelas* |
| BP/3/32362 | K63 | 15’10” - 16’10” | P3 | R | | *C. mesomelas* |
| BP/3/34673 | | | P3 | L | | *C. mesomelas* |
| BP/3/33864 | L63 | 16’6” - 17’6” | P4 | R | Frag | *C. mesomelas* |
| BP/3/17892 | L63 | 13’6” - 14’6” | RAD | R | prox. shaft frag | *C. mesomelas* |
| S94-14781 | L63 | 12’6” - 13’6” | C | | | CANID |
| BP/3/33788 | K63 | | CRAN | R | ZYGM + PARI | CANID |
| S94-88 | P59 | 16’2” - 17’2” | I3 | L | | CANID |
| BP/3/34064 | M60 | 12’5” - 13’5” | M1 | R | Frag | CANID |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34027 | M61 | 11’3” - 12’3” | MTC III | R | Frag | CANID |
| BP/3/34028 | M61 | 11’3” - 12’3” | MTC III | L | FRag | CANID |
| S94-171 | N60 | 20’9” - 21’9” | P | | Frag | CANID |
| BP/3/33393 | L62 | 15’5” - 16’5” | PHAL | | prox. frag | CANID |
| BP/3/32391 | J63 | 20’10” - 21’10” | PHAL I | | prox. frag | CANID |
| S94-14770 | L63 | 12’6” - 13’6” | PHAL I | | | CANID |
| BP/3/34030 | M61 | 11’3” - 12’3” | PHAL I | | | CANID |
| BP/3/33791 | K63 | | RAD | R | shaft frag | CANID |
| BP/3/33707 | K63 | | TIB | L | distal | CANID |
| BP/3/34063 | M60 | 12’5” - 13’5” | TIB | L | distal | CANID |
| BP/3/18201 | M62 | 17’11” - 18’11” | TIB | R | distal | CANID |
| BP/3/16855 | O63 | 21’6” - 22’6” | TIB | R | dist. shaft frag | CANID |
| BP/3/33990 | M61 | 11’3” - 12’3” | ULNA | L | shaft frag | CANID |
| BP/3/34342 | J63 | 15’10” - 16’10” | AXIS | | | CANIS |
| BP/3/34008 | M61 | 11’3” - 12’3” | MTC III | L | whole | CANIS |
| BP/3/18243 | M62 | 17’11” - 18’11” | MTT | L | shaft frag | CANIS |
| S94-14774 | L63 | 12’6” - 13’6” | MTT III | | distal | CANIS |
| S94-14771 | L63 | 12’6” - 13’6” | MTT III | side | prox. | CANIS |
| BP/3/17894 | L63 | 13’6” - 14’6” | MTT III | L | prox. | CANIS |
| BP/3/32379 | I62 | 19’10” - 20’20” | PHAL I | | | CANIS |
| BP/3/33751 | K63 | | RAD | R | distal | CANIS |
| BP/3/33846 | L63 | 16’6” - 17’6” | SCAP | L | distaL frag | CANIS |
| BP/3/33831 | L63 | 16’6” - 17’6” | TIB | L | distal+shaft | CANIS |
| S94-14780 | L63 | 12’6” - 13’6” | C | R | | *Caracal caracal* |
| BP/3/33852 | L63 | 16’6” - 17’6” | C | R | | *C. caracal* |
| S94-8407 | N63 | 13’7” - 14’7” | P3 | R | | *C. caracal* |
| BP/3/32346 | K63 | 15’10” - 16’10” | ENAMEL | | Frag | CARN |
| BP/3/32340 | K63 | 15’10” - 16’10” | 1/2 MAND | | Frag | CARN |
| BP/3/33609 | L62 | 14’5” - 15’5” | 1/2 MAND | R | ascend. ramus frag | CARN |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33679 | L63 | 10'6" - 11'6" | MTP | | | CARN |
| BP/3/33680 | L63 | 10'6" - 11'6" | MTP | | | CARN |
| BP/3/32397 | J63 | 20'10" - 21'10" | RIB | | Frag | CARN |
| BP/3/32643 | J62 | 19'10" - 20'10" | VERT | | neural spine frag | CARN |
| BP/3/32407 | K63 | 17'0" - 18'0" | 1/2 MAND | | Frag | *Felis lybica silvestris* |
| BP/3/32389 | J63 | 20'10"-21'10" | CAPITATE | R | whole | *F. lybica silvestris* |
| BP/3/34675 | M61 | 11'3" - 12'3" | FOOT | L | | *F. lybica silvestris* |
| BP/3/32341 | K63 | 15'10"-16'10" | HUM | L | dist. frag | *F. lybica silvestris* |
| S94-14732 | L63 | 12'6" - 13'6" | I1 | R | | *F. lybica silvestris* |
| BP/3/32870 | N59 | 16'0" - 17'0" | C | | | HYAENA |
| BP/3/16679 | L63 | 10'6" - 11'6" | COPROLITE | | | HYAENA |
| S94-14784 | L63 | 12'6" - 13'6" | COPROLITE | | | HYAENA |
| BP/3/17878 | L63 | 13'6" - 14'6" | COPROLITE | | | HYAENA |
| BP/3/17879 | L63 | 13'6" - 14'6" | COPROLITE | | | HYAENA |
| BP/3/18073 | L63 | 14'6" - 15'6" | COPROLITE | | | HYAENA |
| BP/3/18074 | L63 | 14'6" - 15'6" | COPROLITE | | | HYAENA |
| BP/3/18075 | L63 | 14'6" - 15'6" | COPROLITE | | | HYAENA |
| BP/3/16678 | L63 | 7'6" - 8'6" | DIST MTT | R | | HYAENA |
| BP/3/32712 | J62 | 17'10" - 18'10" | DP2 | R | | HYAENA |
| BP/3/32305 | K63 | 15'10" - 16'10" | DP4 | R | | HYAENA |
| S94-7360 | P60 | 2'9" - 5'6" | MTT IV | R | | HYAENA |
| BP/3/34182 | L63 | 15'6" - 16'6" | P3 | L | | HYAENA |
| BP/3/17905 | L63 | 13'6" - 14'6" | DP | | | *Lycoan pictus* |
| BP/3/34661 | J62 | 20'10" - 21'10" | $_{C}$ | L | whole | *L. pictus* |
| BP/3/34567 | J63 | 18'10" - 19'10" | $M_1$ | | whole | *L. pictus* |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33311 | P59 | 14'1" - 15'1" | C | | root | M.CARN |
| BP/3/17910 | L63 | 13'6" - 14'6" | C | | Frag | M.CARN |
| BP/3/18077 | L63 | 14'6" - 15'6" | C | | Frag | M.CARN |
| BP/3/17911 | L63 | 13'6" - 14'6" | ENAMEL | | Frag | M.CARN |
| BP/3/34551 | K62 | 18'10" - 19'10" | $P_4$ | R | | M.CARN |
| S94-14775 | L63 | 12'6" - 13'6" | MTT II | | prox. | M.CARN |
| S94-103 | M61 | 17'8" - 18'8" | P | L | Frag | M.CARN |
| S94-29 | O60 | 18'0" - 19'0" | RAD | L | dist. Shaft frag | M.CARN |
| S94-30 | O60 | 18'0" - 19'0" | RAD | R | dist. Shaft frag | M.CARN |
| S94-31 | O60 | 18'0" - 19'0" | RAD | L | shaft frag | M.CARN |
| BP/3/33843 | L63 | 16'6" - 17'6" | RIB | | Frag | M.CARN |
| BP/3/34127 | K63 | | TOOTH | | Frag | M.CARN |
| BP/3/34116 | K63 | | $M^1$ | R | root | M.CARN |
| BP/3/34296 | K62 | 19'10" - 20'10" | TIB | L | dist. + shaft | *P.leo* |
| BP/3/34382 | K62 | 19'10" - 20'10" | HUM | R | dist. | *P.leo* |
| S94-7033 | N59 | 10'0" - 11'0" | LOWER M1 | L | | *P.leo* |
| S94-7224 | N59 | 20'0" - 21'0" | LOWER M1 | L | crown | *P.leo* |
| S94-115 | | | MTC | R | dist. | *P.leo* |
| S94-183 | O60 | 8'3" - 9'3" | NAVCL | L | | *P.leo* |
| BP/3/18180 | M62 | 16'11" - 17'11" | PHAL II | R | | *P.leo* |
| S94-1727 | N61 | 11'10" - 12'10" | FEM | R | prox.+shaft frag | *P.leo* |
| BP/3/18246 | M62 | 17'11" - 18'11" | LOWER I3 | L | | *P.pardus* |
| BP/3/34660 | J62 | 20'10" - 21'10" | LOWER P3 | R | | *P.pardus* |
| BP/3/33790 | K63 | | 1/2 MAND | R | Frag | *P. cristatus* |
| S94-7231 | N61 | 14'11" - 15'11" | 1/2 MAND | R | | *P. cristatus* |
| BP/3/17909 | L63 | 13'6" - 14'6" | UPPER P1 | L | | *P. cristatus* |
| 30/09/1999 | K62 | 19'10" - 20'10" | CRAN | | whole | *P. cristatus* |
| S94-14778 | L63 | 12'6" - 13'6" | ATLAS | | | S.CARN |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32642 | J62 | 19’10” - 20’10” | CAUD | | | S.CARN |
| BP/3/32442 | J63 | 19’10” - 20’10” | CAUD | | | S.CARN |
| BP/3/17896 | L63 | 13’6” - 14’6” | CAUD | | | S.CARN |
| S94-7590 | M63 | 11’9” - 12’9” | FEM | L | shaft frag | S.CARN |
| S94-14782 | L63 | 12’6” - 13’6” | LOWER P1 | R | whole | S.CARN |
| BP/3/17906 | L63 | 13’6” - 14’6” | MTC | | | S.CARN |
| S94-7670 | M62 | 14’11” - 15’11” | MTC | | prox. frag | S.CARN |
| BP/3/18181 | M62 | 16’11” - 17’11” | MTC | | | S.CARN |
| BP/3/34406 | J62 | 18’10” - 19’10” | MTP | | | S.CARN |
| BP/3/17897 | L63 | 13’6” - 14’6” | MTT | | | S.CARN |
| S94-14776 | L63 | 12’6” - 13’6” | RAD | | dist. | S.CARN |
| BP/3/32300 | K63 | 17’0” - 18’0” | RIB | L | prox. frag | S.CARN |
| BP/3/17898 | L63 | 13’6” - 14’6” | RIB | | prox. frag | S.CARN |
| S94-14777 | L63 | 12’6” - 13’6” | THOR | | whole | S.CARN |
| S94-14772 | L63 | 12’6” - 13’6” | ULNA | | dist. | S.CARN |
| S94-2407 | N63 | 13’7” - 14’7” | UPPER P3 | L | whole | S.CARN |
| BP/3/18179 | M62 | 16’11” - 17’11” | 1/2 MAND | L | Frag | S.FELID |
| S94-7531 | M63 | 11’9” - 12’9” | HUM | | dist. | S.FELID |
| BP/3/17893 | L63 | 13’6” - 14’6” | MTC II | R | prox. | S.FELID |
| BP/3/17895 | L63 | 13’6” - 14’6” | MTP | | dist. | S.FELID |
| S94-14779 | L63 | 12’6” - 13’6” | PHAL I | | whole | S.FELID |
| BP/3/17907 | L63 | 13’6” - 14’6” | PHAL II | | whole | S.FELID |
| BP/3/17891 | L63 | 13’6” - 14’6” | 1/2 MAND | R | Frag | *Civettictis civetta* |
| BP/3/34648 | J62 | 20’10” - 21’10” | 1/2 MAND | R | Frag | *Genetta genetta* |
| BP/3/32425 | J62 | 19’10” - 20’10” | ILI | R | Frag | *Herpestes ichneumon* |
| BP/3/17908 | L63 | 13’6” - 14’6” | C | | whole | viverrid indet. |
| BP/3/17904 | L63 | 13’6” - 14’6” | C | | root | viverrid indet. |
| S94-8405 | M63 | 13’9” - 14’9” | C | | whole | viverrid indet. |
| BP/3/18001 | L63+M64 | MIXED | LOWER P1 | L | whole | viverrid indet. |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/18078 | L63 | 14’6” - 15’6” | MTT III | R | whole | viverrid indet. |
| BP/3/17912 | L63 | 13’6” - 14’6” | PHAL I | | whole | viverrid indet. |
| BP/3/34491 | K62 | 20’10” - 21’10” | ATLAS | | whole | *Vulpes chama* |
| BP/3/34622 | I62 | 18’10” - 19’10” | CALC | R | whole | *V. chama* |
| BP/3/18245 | M62 | 17’11” - 18’11” | LOWER C | L | whole | *V. chama* |
| BP/3/33971 | L62 | 16’5” - 17’5” | TIB | R | dist. | *V. chama* |
| BP/3/32364 | J63 | 19’10” - 20’10” | LOWER I1 | R | whole | *Phacochoerus aethiopicus* |
| BP/3/34036 | M61 | 11’3” - 12’3” | LOWER M1UPPER M1 | R | whole | *P.aethiopicus* |
| BP/3/32395 | J63 | 20’10” - 21’10” | 1/2 MAX | | Frag | *Potamochoerus porcus* |
| BP/3/34209 | L63 | 15’6” - 16’6” | 1/2 MAND | R | Frag | *Equus* sp. |
| S9-379 | M61 | 14’8” - 15’8” | 1/2 MAND | | Frag | *Equus* sp. |
| BP/3/33067 | O60 | 19’0” - 20’0” | 1/2 MAND | | Frag | *Equus* sp. |
| BP/3/16673 | L63 | 10’6” - 11’6” | 1/2 MAX | R | Frag | *Equus* sp. |
| S94-364 | M61 | 10’8” - 11’8” | 1/2 MAX | L | Frag | *Equus* sp. |
| BP/3/34002 | M61 | 11’3” - 12’3” | 1/2 MAX | L | Frag | *Equus* sp. |
| S94-373 | M61 | 15’8” - 16’8” | 1/2 MAX | L | Frag | *Equus* sp. |
| S94-368 | M61 | 16’8” - 17’8” | 1/2 MAX | L | Frag | *Equus* sp. |
| BP/3/34443 | J63 | 17’10” - 18’10” | ASTRAG | | | *Equus* sp. |
| BP/3/16674 | L63 | 10’6” - 11’6” | DI 1 | R | | *Equus* sp. |
| S94-14793 | L63 | 12’6” - 13’6” | DP | | Frag | *Equus* sp. |
| S94-14792 | L63 | 12’6” - 13’6” | DP3 | L | Frag | *Equus* sp. |
| S94-14794 | L63 | 12’6” - 13’6” | DP3 | L | Frag | *Equus* sp. |
| S94-7745 | M63 | 11’9” - 12’9” | FEM | R | | *Equus* sp. |
| BP/3/33913 | K62 | 15’10” - 16’10” | I1 | L | | *Equus* sp. |
| S94-366 | M61 | 10’8” - 11’8” | I1 | L | | *Equus* sp. |
| BP/3/19330 | O63 | 8’6” - 10’6” | I3 | R | | *Equus* sp. |
| BP/3/33085 | P61 | 16’10” - 17’10” | ILIUM | | Frag | *Equus* sp. |
| BP/3/34385 | J62 | 14’10” - 15’10” | M1 | L | | *Equus* sp. |
| BP/3/34496 | K62 | 20’10” - 21’10” | M1 | R | | *Equus* sp. |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32408 | K63 | 17'0" - 18'0" | M1 | L | | *Equus* sp. |
| S94-363 | M61 | 10'8" - 11'8" | M1 | L | | *Equus* sp. |
| BP/3/33151 | L62 | 14'5" - 15'5" | M2 | L | | *Equus* sp. |
| BP/3/17999 | L63 | MIXED | M2 | L | | *Equus* sp. |
| S94-14789 | L63 | 12'6" - 13'6" | M2 | R | | *Equus* sp. |
| S94-9384 | M63 | 11'9" - 12'9" | M2 | L | | *Equus* sp. |
| S94-356 | M63 | 8'9' - 99" | M2 | R | Frag | *Equus* sp. |
| S94-374 | O60 | 14'3" - 15'3" | M2 | L | | *Equus* sp. |
| S94-8296 | P62 | 17'0" - 18'5" | M2 | L | | *Equus* sp. |
| BP/3/34623 | I62 | 18'10" - 19'10" | M3 | L | | *Equus* sp. |
| BP/3/32660 | J62 | 16'10" - 17'10" | M3 | | | *Equus* sp. |
| BP/3/34537 | K62 | 18'10" - 19'10" | M3 | R | | *Equus* sp. |
| BP/3/33150 | L62 | 14'5" - 15'5" | M3 | R | | *Equus* sp. |
| BP/3/16676 | L63 | 10'6" - 11'6" | M3 | R | | *Equus* sp. |
| BP/3/33861 | L63 | 16'6" - 17'6" | M3 | R | | *Equus* sp. |
| BP/3/33863 | L63 | 16'6" - 17'6" | M3 | L | | *Equus* sp. |
| S94-353 | O60 | 19'0" - 20'0" | M3 | L | | *Equus* sp. |
| S94-359 | P59 | 21'2" - 22'2" | M3 | R | | *Equus* sp. |
| BP/3/34640 | H63 | 22'10" - 23'10" | MOLAR | | Frag | *Equus* sp. |
| BP/3/32661 | J62 | 16'10" - 17'10" | MOLAR | | | *Equus* sp. |
| BP/3/32421 | J62 | 19'10" - 20'10" | MOLAR | L | | *Equus* sp. |
| BP/3/34114 | K63 | | MOLAR | | Frag | *Equus* sp. |
| BP/3/34115 | K63 | | MOLAR | | Frag | *Equus* sp. |
| S94-362 | M61 | 10'8" - 11'8" | MOLAR | | Frag | *Equus* sp. |
| S94-365 | M61 | 10'8" - 11'8" | MOLAR | | Frag | *Equus* sp. |
| BP/3/34001 | M61 | 11'3" - 12'3" | MOLAR | | Frag | *Equus* sp. |
| S94-358 | M61 | 16'8" - 17'8" | MOLAR | | Frag | *Equus* sp. |
| S94-355 | M63 | 15'9" - 16'9" | MOLAR | | Frag | *Equus* sp. |
| BP/3/33822 | K63 | | MTC | | dist. | *Equus* sp. |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33149 | L62 | 14’5” - 15’5” | MTC | L | | *Equus* sp. |
| BP/3/34223 | L63 | 15’6” - 16’6” | MTC II | L | prox. frag | *Equus* sp. |
| BP/3/33007 | L62 | 13’5” - 14’5” | MTC IV | L | | *Equus* sp. |
| BP/3/33538 | H62 | 21’10” - 22’10” | MTP | | shaft frag | *Equus* sp. |
| BP/3/33821 | K62 | 19’10” - 20’10” | MTP | | distal | *Equus* sp. |
| S94-14795 | L63 | 12’6” - 13’6” | MTP | | distal | *Equus* sp. |
| S94-9988 | M64 | 9’8” - 10’8” | MTP | | shaft frag | *Equus* sp. |
| S94-328 | N59 | 22’0” - 23’0” | MTP | | dist. | *Equus* sp. |
| S94-2015 | P60 | 15’4” - 16’4” | MTP | | dist. shaft frag | *Equus* sp. |
| S94-2014 | P60 | 15’4” - 16’4” | MTP | | shaft frag | *Equus* sp. |
| BP/3/32368 | J63 | 19’10” - 20’10” | MTP II/1V | R | Frag | *Equus* sp. |
| S94-7682 | M62 | 13’11” - 14’11” | MTT | L | prox. | *Equus* sp. |
| BP/3/34384 | J62 | 14’10” - 15’10” | P2 | L | | *Equus* sp. |
| BP/3/34293 | J63 | 14’10” - 15’10” | P2 | L | | *Equus* sp. |
| S94-14790 | L63 | 12’6” - 13’6” | P2 | L | | *Equus* sp. |
| S94-14788 | L63 | 12’6” - 13’6” | P2 | L | Frag | *Equus* sp. |
| S94-14791 | L63 | 12’6” - 13’6” | P2 | L | Frag | *Equus* sp. |
| BP/3/34210 | L63 | 15’6” - 16’6” | P2 | R | | *Equus* sp. |
| S9-378 | M61 | 14’8” - 15’8” | P2 | R | | *Equus* sp. |
| S94-9383 | M63 | 11’9” - 12’9” | P2 | L | | *Equus* sp. |
| S94-1785 | N61 | 16’11’ ’ - 17’11” | P2 | L | | *Equus* sp. |
| S94-377 | O62 | 10’0” - 11’0” | P2 | L | Frag | *Equus* sp. |
| BP/3/18944 | L63 | 10’6” - 11’6” | P3 | L | | *Equus* sp. |
| BP/3/34211 | L63 | 15’6” - 16’6” | P3 | R | | *Equus* sp. |
| BP/3/33862 | L63 | 16’6” - 17’6” | P3 | L | Frag | *Equus* sp. |
| S94-376 | M61 | 13’8” - 14’8” | P3 | R | | *Equus* sp. |
| BP/3/34506 | I63 | 15’10” - 16’10” | PHAL III | | | *Equus* sp. |
| BP/3/16677 | L63 | 10’6” - 11’6” | PHAL III | | | *Equus* sp. |
| S94-7632 | M62 | 15’11” - 16’11” | RAD | L | dist. shaft frag | *Equus* sp. |
| BP/3/32435 | H62 | 21’10” - 22’10” | SCAP | | blade frag | *Equus* sp. |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-6604 | O60 | 15’3” - 16’0” | TARS + MTT | | | *Equus* sp. |
| BP/3/32432 | J6 | 2 19’10” - 20’10” | THOR | | centrum | *Equus* sp. |
| BP/3/33875 | K62 | 15’10” - 16’10” | TIB | R | dist. | *Equus* sp. |
| BP/3/33924 | K62 | 15’10” - 16’10” | TOOTH | | Frag | *Equus* sp. |
| BP/3/16675 | L63 | 10’6” - 11’6” | TOOTH | | Frag | *Equus* sp. |
| BP/3/18945 | L63 | 10’6” - 11’6” | TOOTH | | Frag | *Equus* sp. |
| S94-371 | M61 | 15’8” - 16’8” | TOOTH | | Frag | *Equus* sp. |
| BP/3/18202 | M62 | 17’11” - 18’11” | TOOTH | | Frag | *Equus* sp. |
| BP/3/34538 | K62 | 18’10” - 19’10” | UPPER 3 | R | whole | *Equus* sp. |
| BP/3/33780 | K63 | | 1/2 MAND | L | Frag | *Ourebia ourebi* |
| BP/3/34559 | J63 | 18’10” - 19’10” | 1/2 MAX | L | Frag | *O. ourebi* |
| S94-6704 | P61 | 17’10” - 18’5” | 1/2 MAX | R | Frag | *O. ourebi* |
| BP/3/34390 | J62 | 14’10” - 15’10” | LOWER M3 | L | whole | *O. ourebi* |
| S94-6836 | P58 | 27’10” - 28’10” | 1/2 MAND | R | Frag | *Cephalophus* sp. |
| BP/3/33050 | L62 | 13’5” - 14’5” | 1/2 MAX | L | Frag | *Cephalophus* sp. |
| BP/3/33267 | L62 | 17’5” - 18’5” | 1/2 MAX | R | Frag | *Cephalophus* sp. |
| BP/3/33541 | H62 | 21’10” - 22’10” | 1/2 MAND | R | Frag | BOV I |
| BP/3/34625 | I62 | 18’10” - 19’10” | 1/2 MAND | R | Frag | BOV I |
| BP/3/32375 | I62 | 19’10” - 20’20” | 1/2 MAND | L | Frag | BOV I |
| BP/3/32378 | I62 | 19’10” - 20’20” | 1/2 MAND | L | Frag | BOV I |
| BP/3/33379 | J62 | 16’10” - 17’10” | 1/2 MAND | | Frag | BOV I |
| BP/3/33376 | J62 | 16’10” - 17’10” | 1/2 MAND | R | Frag | BOV I |
| BP/3/34278 | J63 | 14’10” - 15’10” | 1/2 MAND | L | Frag | BOV I |
| BP/3/34440 | K62 | 17’10” - 18’10” | 1/2 MAND | R | condyle | BOV I |
| BP/3/34437 | K62 | 17’10” - 18’10” | 1/2 MAND | R | Frag | BOV I |
| BP/3/34555 | K62 | 18’10” - 19’10” | 1/2 MAND | L | ascend. ramus frag | BOV I |
| BP/3/33599 | L62 | 14’5” - 15’5” | 1/2 MAND | L | Frag | BOV I |
| BP/3/33275 | L62 | 15’5” - 16’5” | 1/2 MAND | | ascend. ramus frag | BOV I |
| BP/3/33265 | L62 | 17’5” - 18’5” | 1/2 MAND | R | ascend. ramus | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34232 | L63 | 15’6” - 16’6” | 1/2 MAND | R | ascend. ramus | BOV I |
| BP/3/34248 | L63 | 15’6” - 16’6” | 1/2 MAND | R | Frag | BOV I |
| BP/3/34216 | L63 | 15’6” - 16’6” | 1/2 MAND | | Frag | BOV I |
| BP/3/34045 | M60 | 10’5” - 11’5” | 1/2 MAND | L | ascend. ramus | BOV I |
| BP/3/32922 | M61 | 14’8” - 15’8” | 1/2 MAND | L | Frag | BOV I |
| BP/3/18178 | M62 | 16’11” - 17’11” | 1/2 MAND | | Frag | BOV I |
| BP/3/18137 | M62 | 16’11” - 17’11” | 1/2 MAND | R | Frag | BOV I |
| S94-7585 | M63 | 11’9” - 12’9” | 1/2 MAND | R | ascend. ramus | BOV I |
| S94-1613 | M63 | 11’9” - 12’9” | 1/2 MAND | L | Frag | BOV I |
| S94-1614 | M63 | 11’9” - 12’9” | 1/2 MAND | L | Frag | BOV I |
| S94-6725 | P59 | 22’2”-. | 1/2 MAND | R | Frag | BOV I |
| S94-7259 | Q58 | 19’3” - 20’3” | 1/2 MAND | L | ascend. ramus | BOV I |
| BP/3/33378 | J62 | 16’10” - 17’10” | 1/2 MAX | L | Frag | BOV I |
| BP/3/34558 | J63 | 18’10” - 19’10” | 1/2 MAX | R | Frag | BOV I |
| BP/3/33781 | K63 | | 1/2 MAX | R | Frag | BOV I |
| BP/3/34034 | M61 | 11’3” - 12’3” | 1/2 MAX | R | Frag | BOV I |
| BP/3/18174 | M62 | 16’11” - 17’11” | 1/2 MAX | | Frag | BOV I |
| BP/3/18175 | M62 | 16’11” - 17’11” | 1/2 MAX | | Frag | BOV I |
| BP/3/34120 | K63 | | 1/2 PEL | R | Frag | BOV I |
| BP/3/33394 | L62 | 15’5” - 16’5” | 1/2 PEL | L | Frag | BOV I |
| S94-1695 | M62 | 13’11” - 14’11” | 1/2 PEL | | Frag | BOV I |
| BP/3/33665 | M62 | 16’11” - 17’11” | 1/2 PEL | | Frag | BOV I |
| S94-14841 | M63 | MIXED | 1/2 PEL | | Frag | BOV I |
| BP/3/34132 | K63 | | ACET | | Frag | BOV I |
| BP/3/34258 | K62 | 19’10” - 20’10” | ASTRAG | L | | BOV I |
| BP/3/34174 | L63 | 15’6” - 16’6” | ASTRAG | L | Frag | BOV I |
| BP/3/34175 | L63 | 15’6” - 16’6” | ASTRAG | L | Frag | BOV I |
| BP/3/33844 | L63 | 16’6” - 17’6” | ASTRAG | L | Frag | BOV I |
| BP/3/18185 | M62 | 17’11” - 18’11” | ASTRAG | R | | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-7529 | M63 | 11’9” - 12’9” | ASTRAG | R | | BOV I |
| S94-7530 | M63 | 11’9” - 12’9” | ASTRAG | R | | BOV I |
| S94-1198 | N63 | 13’10” - 14’10” | ASTRAG | L | | BOV I |
| S94-6844 | P59 | 18’2” - 19’2” | ASTRAG | L | | BOV I |
| BP/3/33380 | J62 | 16’10” - 17’10” | BONE | | Frag | BOV I |
| S94-14800 | M61 | 16’8” - 17’8” | BONE | | Frag | BOV I |
| S94-7580 | M63 | 11’9” - 12’9” | CALC | R | caudal frag | BOV I |
| S94-7602 | M63 | 12’9” - 13’9” | CALC | L | | BOV I |
| BP/3/33885 | K62 | 15’10” - 16’10” | CALC | R | caudal frag | BOV I |
| S94-14797 | M61 | 16’8” - 17’8” | CALC | | caudal frag | BOV I |
| S94-7528 | M63 | 11’9” - 12’9” | CALC | L | | BOV I |
| BP/3/34462 | K62 | 20’10” - 21’10” | CERV | | | BOV I |
| BP/3/33964 | L62 | 16’5” - 17’5” | CORO | L | Frag | BOV I |
| BP/3/34421 | J63 | 13’10” - 14’10” | CRAN | | mastoid | BOV I |
| BP/3/34441 | K62 | 17’10” - 18’10” | CRAN | | Frag | BOV I |
| BP/3/34401 | J62 | 14’10” - 15’10” | DIASTEMA | L | Frag | BOV I |
| S94-14806 | M61 | 16’8” - 17’8” | DIASTEMAR | | whole | BOV I |
| S94-1600 | M63 | 12’9” - 13’9” | DIASTEMA | L | whole | BOV I |
| BP/3/34565 | J63 | 18’10” - 19’10” | DP1 | | | BOV I |
| BP/3/33965 | L62 | 16’5” - 17’5” | DP2 | | | BOV I |
| BP/3/18247 | M62 | 17’11” - 18’11” | DP2 | L | | BOV I |
| BP/3/32955 | L62 | 13’5” - 14’5” | ENAMEL | | Frag | BOV I |
| BP/3/18163 | M62 | 16’11” - 17’11” | ENAMEL | | Frag | BOV I |
| BP/3/18167 | M62 | 16’11” - 17’11” | ENAMEL | | Frag | BOV I |
| S94-8377 | M63 | 13’9” - 14’9” | ENAMEL | | Frag | BOV I |
| S94-6729 | P59 | 22’2”- | ENAMEL | | Frag | BOV I |
| S94-6730 | P59 | 22’2”- | ENAMEL | | Frag | BOV I |
| S94-6731 | P59 | 22’2”- | ENAMEL | | Frag | BOV I |
| S94-6732 | P59 | 22’2”- | ENAMEL | | Frag | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-6733 | P59 | 22’2”- | ENAMEL | | Frag | BOV I |
| S94-6830 | P60 | 16’6” - 17’6” | ENAMEL | | Frag | BOV I |
| S94-6831 | P60 | 16’6” - 17’6” | ENAMEL | | Frag | BOV I |
| BP/3/34350 | J63 | 15’10” - 16’10” | EXT+MED CUN | L | | BOV I |
| BP/3/33906 | K62 | 15’10” - 16’10” | EXT+MED CUN | R | | BOV I |
| BP/3/33527 | L62 | 14’5” - 15’5” | EXT+MED CUN | R | | BOV I |
| BP/3/33574 | H62 | 21’10” - 22’10” | FEM | L | distal shaft frag | BOV I |
| BP/3/34586 | I62 | 18’10” - 19’10” | FEM | | dist. Condyle | BOV I |
| BP/3/34585 | I62 | 18’10” - 19’10” | FEM | L | prox. shaft frag | BOV I |
| BP/3/33317 | J62 | 16’10” - 17’10” | FEM | R | distal shaft frag | BOV I |
| BP/3/33329 | J62 | 16’10” - 17’10” | FEM | | shaft frag | BOV I |
| BP/3/33331 | J62 | 16’10” - 17’10” | FEM | | shaft frag | BOV I |
| BP/3/33582 | J62 | 16’10” - 17’10” | FEM | R | shaft frag | BOV I |
| BP/3/33581 | J62 | 16’10” - 17’10” | FEM | L | prox. shaft frag | BOV I |
| BP/3/33505 | J62 | 17’10” - 18’10” | FEM | R | shaft frag | BOV I |
| BP/3/34375 | J62 | 17’10” - 18’10” | FEM | R | shaft frag | BOV I |
| BP/3/34376 | J62 | 17’10” - 18’10” | FEM | L | shaft frag | BOV I |
| BP/3/34282 | J63 | 14’10” - 15’10” | FEM | | shaft frag | BOV I |
| BP/3/34452 | J63 | 17’10” - 18’10” | FEM | R | shaft frag | BOV I |
| BP/3/33749 | K63 | | FEM | L | shaft frag | BOV I |
| BP/3/33771 | K63 | | FEM | L | shaft frag | BOV I |
| BP/3/33585 | L62 | 13’5” - 14’5” | FEM | L | distal shaft frag | BOV I |
| BP/3/33586 | L62 | 13’5” - 14’5” | FEM | | distal shaft frag | BOV I |
| BP/3/33497 | L62 | 13’5” - 14’5” | FEM | L | prox. shaft frag | BOV I |
| BP/3/33682 | L63 | 12’6” - 13’6” | FEM | R | dist. Shaft frag | BOV I |
| BP/3/17437 | L63 | 13’6” - 14’6” | FEM | L | distal shaft frag | BOV I |
| BP/3/34228 | L63 | 15’6” - 16’6” | FEM | L | distal shaft frag | BOV I |
| BP/3/34043 | M60 | 10’5” - 11’5” | FEM | R | head | BOV I |
| BP/3/33472 | M61 | 19’8”-20’8” | FEM | R | prox. shaft frag | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33655 | M62 | 16'11" - 17'11" | FEM | L | distal shaft frag | BOV I |
| BP/3/33661 | M62 | 16'11" - 17'11" | FEM | L | distal shaft frag | BOV I |
| BP/3/18124 | M62 | 16'11" - 17'11" | FEM | R | shaft frag | BOV I |
| BP/3/18198 | M62 | 17'11" - 18'11" | FEM | L | prox. shaft frag | BOV I |
| S94-7631 | M63 | 12'9" - 13'9" | FEM | L | head | BOV I |
| BP/3/33293 | M63 | 13'9" - 14'9" | FEM | L | prox. shaft frag | BOV I |
| S94-10007 | M64 | 10'8" - 11'8" | FEM | | shaft frag | BOV I |
| BP/3/33631 | M64 | 11'4" - 12'4" | FEM | | shaft frag | BOV I |
| S94-7724 | M64 | 8'8" - 9'8" | FEM | L | dist. Condyle | BOV I |
| BP/3/33089 | O60 | 12'3" - 13'3" | FEM | | shaft frag | BOV I |
| S94-6587 | O60 | 14'3" - 15'3" | FEM | L | dist. | BOV I |
| S94-6462 | O63 | 10'0" - 11'0" | FEM | | shaft frag | BOV I |
| S94-6448 | O63 | 13'0" - 14'0" | FEM | | head | BOV I |
| BP/3/34226 | L63 | 15'6" - 16'6" | FEM | L | Shaft | BOV I |
| BP/3/34317 | J62 | 15'10" - 16'10" | HORN | | core frag | BOV I |
| BP/3/33908 | K62 | 15'10" - 16'10" | HORN | | core frag | BOV I |
| BP/3/34556 | K62 | 18'10" - 19'10" | HORN | | core frag | BOV I |
| BP/3/34007 | M61 | 11'3" - 12'3" | HORN | | core frag | BOV I |
| S94-7355 | M61 | 14'8" - 15'8" | HORN | | core frag | BOV I |
| S94-7644 | M62 | 15'11" - 16'11" | HORN | | Frag | BOV I |
| BP/3/33236 | N60 | 20'9" - 21'9" | HORN | | core frag | BOV I |
| BP/3/34522 | K62 | 18'10" - 19'10" | HORN+CRAN | L | core frag | BOV I |
| BP/3/32453 | H62 | 21'10" - 22'10" | HUM | L | dist. Frag | BOV I |
| BP/3/33549 | H62 | 21'10" - 22'10" | HUM | R | distal shaft frag | BOV I |
| BP/3/33578 | H62 | 21'10" - 22'10" | HUM | R | distal shaft frag | BOV I |
| BP/3/34604 | I62 | 18'10" - 19'10" | HUM | L | shaft frag | BOV I |
| BP/3/34402 | J62 | 14'10" - 15'10" | HUM | R | dist. Shaft frag | BOV I |
| BP/3/33206 | J62 | 16'10" - 17'10" | HUM | R | distal shaft frag | BOV I |
| BP/3/33318 | J62 | 16'10" - 17'10" | HUM | R | distal shaft frag | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34280 | J63 | 14'10" - 15'10" | HUM | R | distal shaft frag | BOV I |
| BP/3/34279 | J63 | 14'10" - 15'10" | HUM | R | shaft frag | BOV I |
| BP/3/34468 | J63 | 16'10" - 17'10" | HUM | L | distal shaft frag | BOVI |
| BP/3/33871 | K62 | 15'10" - 16'10" | HUM | R | dist. | BOV I |
| BP/3/33738 | K63 | | HUM | L | distal shaft frag | BOV I |
| BP/3/33495 | L62 | 13'5" - 14'5" | HUM | R | distal shaft frag | BOV I |
| BP/3/33506 | L62 | 14'5" - 15'5" | HUM | R | distal shaft frag | BOV I |
| S94-14979 | L63 | 12'6" - 13'6" | HUM | R | shaft frag | BOV I |
| BP/3/32579 | M60 | 16'2" - 17'2" | HUM | | shaft frag | BOV I |
| BP/3/32580 | M60 | 16'2" - 17'2" | HUM | | shaft frag | BOV I |
| BP/3/34020 | M61 | 11'3" - 12'3" | HUM | R | shaft frag | BOV I |
| BP/3/32905 | M61 | 14'8" - 15'8" | HUM | | shaft frag | BOV I |
| BP/3/32906 | M61 | 14'8" - 15'8" | HUM | L | shaft frag | BOV I |
| BP/3/32925 | M61 | 14'8" - 15'8" | HUM | R | shaft frag | BOV I |
| BP/3/32929 | M61 | 14'8" - 15'8" | HUM | | shaft frag | BOV I |
| S94-7525 | M63 | 11'9" - 12'9" | HUM | R | shaft frag | BOV I |
| S94-7622 | M63 | 12'9" - 13'9" | HUM | | distal shaft frag | BOV I |
| S94-10005 | M64 | 10'8" - 11'8" | HUM | R | dist. Frag | BOV I |
| S94-7703 | M64 | 8'8" - 9'8" | HUM | L | distal shaft frag | BOV I |
| S94-7706 | M64 | 8'8" - 9'8" | HUM | L | distal shaft frag | BOV I |
| S94-9978 | M64 | 9'8" - 10'8" | HUM | R | distal shaft frag | BOV I |
| S94-6589 | O60 | 14'3" - 15'3" | HUM | R | dist. | BOV I |
| SWP-2147 | O61 | 18'8" - 19'1" | HUM | L | condyles | BOV I |
| SWP-2148 | O61 | 18'8" - 19'1" | HUM | R | distal shaft frag | BOV I |
| S94-2022 | P61 | 14'10" - 15'10" | HUM | | shaft frag | BOV I |
| BP/3/34583 | I6 | 2 18'10" - 19'10" | HUM | R | shaft frag | BOV I |
| BP/3/33234 | N60 | 21'9" - 22'9" | I | | | BOV I |
| BP/3/33190 | N60 | 22'9" - 23'9" | I | | | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34445 | J63 | 17'10" - 18'10" | ILI | R | Frag | BOV I |
| BP/3/33883 | K62 | 15'10" - 16'10" | ILI | R | Frag | BOV I |
| BP/3/33276 | L62 | 15'5" - 16'5" | ILI | R | Frag | BOV I |
| BP/3/33485 | M61 | 15'8" - 16'8" | ILI | R | Frag | BOV I |
| S94-7598 | M63 | 12'9" - 13'9" | ILI | R | Frag | BOV I |
| BP/3/32861 | N59 | 16'0" - 17'0" | ILI | R | Frag | BOV I |
| S94-10040 | N60 | 12'9" - 13'9" | ILI | L | Frag | BOV I |
| BP/3/33897 | K62 | 15'10" - 16'10" | ISCH | R | Frag | BOV I |
| BP/3/34534 | K62 | 18'10" - 19'10" | ISCH | R | Frag | BOV I |
| S94-7554 | M63 | 11'9" - 12'9" | ISCH | L | Frag | BOV I |
| S94-7599 | M63 | 12'9" - 13'9" | ISCH | | Frag | BOV I |
| S94-7606 | M63 | 12'9" - 13'9" | ISCH | R | | BOV I |
| S94-10035 | N60 | 12'9" - 13'9" | ISCH | L | Frag | BOV I |
| S94-10048 | N60 | 12'9" - 13'9" | ISCH | R | Frag | BOV I |
| BP/3/16802 | O63 | 22'6" - 23'6" | ISCH | R | Frag | BOV I |
| BP/3/33733 | K63 | | LAT MELL | R | Frag | BOV I |
| BP/3/34400 | J62 | 14'10" - 15'10" | LUMB | | | BOV I |
| BP/3/34536 | K62 | 18'10" - 19'10" | LUMB | | neural arch + spine | BOV I |
| BP/3/34257 | L63 | 15'6" - 16'6" | LUMB | | neural arch + spine | BOV I |
| BP/3/34672 | P60 | 14'10" - 15'10" | LUN | L | | BOV I |
| BP/3/34358 | J63 | 15'10" - 16'10" | M1 | L | | BOV I |
| BP/3/34501 | J63 | 16'10" - 17'10" | M1 | L | whole | BOV I |
| BP/3/33922 | K62 | 15'10" - 16'10" | M1 | L | whole | BOV I |
| BP/3/34100 | K63 | | M1 | L | whole | BOV I |
| BP/3/34242 | L63 | 15'6" - 16'6" | M1 | R | | BOV I |
| S94-8367 | M63 | 13'9" - 14'9" | M1 | L | whole | BOV I |
| BP/3/34632 | I62 | 18'10" - 19'10" | M2 | R | whole | BOV I |
| BP/3/34103 | K63 | | M2 | L | | BOV I |
| BP/3/33858 | L63 | 16'6" - 17'6" | M2 | L | whole | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/19246 | Q61 | 10'5" - 11'9" | MAG | L | | BOV I |
| BP/3/33715 | K63 | | MTC | | dist. Shaft frag | BOV I |
| BP/3/34453 | J63 | 17'10" - 18'10" | MTC | | shaft frag | BOV I |
| BP/3/34435 | K62 | 17'10" - 18'10" | MTC | | shaft frag | BOV I |
| S94-7258 | Q58 | 19'3" - 20'3" | MTC | | shaft frag | BOV I |
| BP/3/33758 | K63 | | MTP | | dist. condyle | BOV I |
| BP/3/33396 | L62 | 15'5" - 16'5" | MTP | | shaft frag | BOV I |
| BP/3/33292 | M63 | 15'9" - 16'9" | MTP | | dist. | BOV I |
| S94-11254 | P61 | 17'10" - 18'5" | MTP | | Frag | BOV I |
| BP/3/33756 | K63 | | MTT | | dist. | BOV I |
| BP/3/33757 | K63 | | MTT | | dist. | BOV I |
| BP/3/34160 | K63 | | MTT | | dist. shaft frag | BOV I |
| BP/3/33143 | L62 | 14'5" - 15'5" | MTT | | dist. shaft frag | BOV I |
| BP/3/33829 | L63 | 16'6" - 17'6" | MTT | | dist. | BOV I |
| S94-14822 | M61 | 16'8" - 17'8" | MTT | | dist. | BOV I |
| S94-9979 | M64 | 9'8" - 10'8" | MTT | R | dist. shaft frag | BOV I |
| BP/3/33551 | H62 | 21'10" - 22'10" | MTT | | shaft frag | BOV I |
| BP/3/33573 | H62 | 21'10" - 22'10" | MTT | | shaft frag | BOV I |
| BP/3/34286 | J63 | 14'10" - 15'10" | MTT | R | shaft frag | BOV I |
| BP/3/34531 | K62 | 18'10" - 19'10" | MTT | R | shaft frag | BOV I |
| BP/3/33718 | K63 | | MTT | R | shaft frag | BOV I |
| BP/3/33719 | K63 | | MTT | | shaft frag | BOV I |
| BP/3/33739 | K63 | | MTT | | shaft frag | BOV I |
| BP/3/33740 | K63 | | MTT | | shaft frag | BOV I |
| BP/3/33453 | M60 | 15'2" - 16'2" | MTT | | shaft frag | BOV I |
| BP/3/33455 | M60 | 15'2" - 16'2" | MTT | | shaft frag | BOV I |
| BP/3/33307 | M60 | 19'2" - 20'2" | MTT | | shaft frag | BOV I |
| BP/3/34006 | M61 | 11'3" - 12'3" | MTT | | shaft frag | BOV I |
| BP/3/32901 | M61 | 14'8" - 15'8" | MTT | L | shaft frag | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32902 | M61 | 14’8” - 15’8” | MTT | | shaft frag | BOV I |
| BP/3/33487 | M61 | 15’8” - 16’8” | MTT | | shaft frag | BOV I |
| BP/3/33491 | M61 | 15’8” - 16’8” | MTT | | shaft frag | BOV I |
| S94-7679 | M62 | 13’11” - 14’11” | MTT | | shaft frag | BOV I |
| S94-7740 | M62 | 9’11” - 10’11” | MTT | | shaft frag | BOV I |
| S94-7591 | M63 | 11’9” - 12’9” | MTT | | shaft frag | BOV I |
| S94-6601 | O62 | 14’9” - 15’9” | MTT | | shaft frag | BOV I |
| BP/3/34298 | K62 | 19’10” - 20’10” | NAV-CUB | L | | BOV I |
| BP/3/33754 | K63 | | NAV-CUB | L | | BOV I |
| BP/3/33177 | L62 | 14’5” - 15’5” | NAV-CUB | L | | BOV I |
| BP/3/34177 | L63 | 15’6” - 16’6” | NAV-CUB | L | | BOV I |
| BP/3/34247 | L63 | 15’6” - 16’6” | NAV-CUB | R | | BOV I |
| BP/3/33828 | L63 | 16’6” - 17’6” | NAV-CUB | R | | BOV I |
| BP/3/34250 | L63 | 15’6” - 16’6” | OCC | R | condyle | BOV I |
| BP/3/33483 | M61 | 15’8” - 16’8” | OCC | R | Frag | BOV I |
| S94-7582 | M63 | 11’9” - 12’9” | ORB | | Frag | BOV I |
| BP/3/34535 | K62 | 18’10” - 19’10” | OS PET | R | | BOV I |
| BP/3/34477 | K62 | 20’10” - 21’10” | OS PET | L | | BOV I |
| BP/3/18176 | M62 | 16’11” - 17’11” | OS PET | | | BOV I |
| S94-1753 | N60 | 12’9” - 13’9” | OS PET | | | BOV I |
| S94-14644 | L63 | 12’6” - 13’6” | P | | Frag | BOV I |
| BP/3/32342 | K63 | 15’10” - 16’10” | P3 | R | | BOV I |
| BP/3/32360 | K63 | 15’10” - 16’10” | P3 | L | whole | BOV I |
| BP/3/33060 | M61 | 14’8” - 15’8” | P3 | | | BOV I |
| BP/3/33388 | L62 | 15’5” - 16’5” | P4 | L | | BOV I |
| BP/3/33952 | L62 | 16’5” - 17’5” | P4 | L | whole | BOV I |
| BP/3/33271 | L62 | 17’5” - 18’5” | P4 | | | BOV I |
| S94-14687 | L63 | 12’6” - 13’6” | P4 | L | whole | BOV I |
| S94-14708 | L63 | 12’6” - 13’6” | P4 | | whole | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-1606 | M61 | 15’11” - 16’11” | P4 | L | Frag | BOV I |
| S94-6447 | O63 | 13’0” - 14’0” | PAT | | Frag | BOV I |
| BP/3/33220 | J62 | 16’10” - 17’10” | PHAL | | Frag | BOV I |
| BP/3/33203 | J62 | 16’10” - 17’10” | PHAL I | | | BOV I |
| BP/3/33902 | K62 | 15’10” - 16’10” | PHAL I | R | 2 whole | BOV I |
| BP/3/34300 | K62 | 19’10” - 20’10” | PHAL I | | | BOV I |
| BP/3/34305 | K62 | 19’10” - 20’10” | PHAL I | | | BOV I |
| BP/3/33744 | K63 | | PHAL I | | dist. frag | BOV I |
| BP/3/34085 | K63 | | PHAL I | | | BOV I |
| BP/17986 | L-M63 | MIXED | PHAL I | | dist. frag | BOV I |
| BP/3/33991 | M61 | 11’3” - 12’3” | PHAL I | | 2 whole | BOV I |
| BP/3/18084 | M62 | 16’11” - 17’11” | PHAL I | | dist. frag | BOV I |
| BP/3/18085 | M62 | 16’11” - 17’11” | PHAL I | | dist. frag | BOV I |
| S94-7548 | M63 | 11’9” - 12’9” | PHAL I | | dist. frag | BOV I |
| S94-9972 | M64 | 9’8” - 10’8” | PHAL I | | dist. frag | BOV I |
| S94-1234 | N63 | 12’9” - 13’9” | PHAL I | | dist. frag | BOV I |
| S94-1203 | N63 | 13’10” - 14’10” | PHAL I | | dist. frag | BOV I |
| S94-1205 | N63 | 13’10” - 14’10” | PHAL I | | | BOV I |
| BP/3/34430 | K62 | 17’10” - 18’10” | PHAL I | | Frag | BOV I |
| BP/3/34591 | I62 | 18’10” - 19’10” | PHAL II | | | BOV I |
| BP/3/34415 | J63 | 13’10” - 14’10” | PHAL II | | | BOV I |
| BP/3/34417 | J63 | 13’10” - 14’10” | PHAL II | | | BOV I |
| BP/3/33890 | K62 | 15’10” - 16’10” | PHAL II | | | BOV I |
| BP/3/34518 | K62 | 18’10” - 19’10” | PHAL II | | | BOV I |
| BP/3/34474 | K62 | 20’10” - 21’10” | PHAL II | | | BOV I |
| BP/3/34086 | K63 | | PHAL II | | | BOV I |
| BP/3/34087 | K63 | | PHAL II | | | BOV I |
| BP/3/34088 | K63 | | PHAL II | | | BOV I |
| BP/3/34089 | K63 | | PHAL II | | | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33176 | L62 | 14’5” - 15’5” | PHAL II | | | BOV I |
| BP/3/33525 | L62 | 14’5” - 15’5” | PHAL II | | | BOV I |
| BP/3/33526 | L62 | 14’5” - 15’5” | PHAL II | | | BOV I |
| BP/3/34234 | L63 | 15’6” - 16’6” | PHAL II | | | BOV I |
| S94-7542 | M63 | 11’9” - 12’9” | PHAL II | | | BOV I |
| S94-8051 | N63 | 13’7” - 14’7” | PHAL II | | | BOV I |
| S94-6456 | O59 | 10’0” - 11’0” | PHAL II | | dist. frag | BOV I |
| S94-2037 | P60 | 14’4” - 15’4” | PHAL II | | dist. frag | BOV I |
| BP/3/33992 | M61 | 11’3” - 12’3” | PHAL II | | whole | BOV I |
| BP/3/34621 | I62 | 18’10” - 19’10” | PHAL III | | | BOV I |
| BP/3/34418 | J63 | 13’10” - 14’10” | PHAL III | | | BOV I |
| BP/3/34288 | J63 | 14’10” - 15’10” | PHAL III | | | BOV I |
| BP/3/33891 | K62 | 15’10” - 16’10” | PHAL III | | | BOV I |
| BP/3/33892 | K62 | 15’10” - 16’10” | PHAL III | | | BOV I |
| BP/3/34090 | K63 | | PHAL III | | | BOV I |
| BP/3/34150 | K63 | | PHAL III | | | BOV I |
| S94-1228 | N63 | 12’9” - 13’9” | PHAL III | | | BOV I |
| S94-6824 | P60 | 16’6” - 17’6” | PHAL III | | | BOV I |
| BP/3/18229 | M62 | 17’11” - 18’11” | PREMOLAR | | root Frag | BOV I |
| BP/3/32652 | J62 | 16’10” - 17’10” | FEM | L | prox. | BOV I |
| S94-9960 | M64 | 9’8” - 10’8” | FEM | R | prox. | BOV I |
| BP/3/18123 | M62 | 16’11” - 17’11” | HUM | L | prox. | BOV I |
| S94-8397 | M63 | 13’9” - 14’9” | HUM | L | prox. | BOV I |
| BP/3/33901 | K62 | 15’10” - 16’10” | MTC | R | prox. | BOV I |
| S94-14833 | M61 | 16’8” - 17’8” | MTC | | prox. | BOV I |
| BP/3/33291 | M63 | 15’9” - 16’9” | MTC | R | prox. | BOV I |
| S94-10046 | N60 | 12’9” - 13’9” | MTC | R | prox. | BOV I |
| S94-7691 | M61 | 12’8” - 13’8” | MTT | R | prox. | BOV I |
| S94-14830 | M61 | 16’8” - 17’8” | MTT | L | prox. | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-7667 | M62 | 14’11” - 15’11” | MTT | R | prox. | BOV I |
| BP/3/18188 | M62 | 17’11” - 18’11” | MTT | R | prox. | BOV I |
| S94-7597 | M63 | 12’9” - 13’9” | MTT | L | prox. | BOV I |
| BP/3/16916 | L63 | 0’6” - 11’6” | MTT | L | prox. frag | BOV I |
| BP/3/32824 | N59 | 15’0” - 16’0” | MTT | R | prox. frag | BOV I |
| BP/3/33732 | K63 | | MTT | | prox. frag | BOV I |
| BP/3/18189 | M62 | 17’11” - 18’11” | MTT | | prox. shaft | BOV I |
| BP/3/34584 | I62 | 18’10” - 19’10” | MTT | L | prox. + shaft frag | BOV I |
| BP/3/34013 | M61 | 11’3” - 12’3” | PHAL | | prox. epiph frag | BOV I |
| BP/3/33792 | K63 | | PHAL I | | prox. frag | BOV I |
| S94-1197 | N63 | 13’10” - 14’10” | PHAL I | | prox. frag | BOV I |
| BP/3/32961 | L62 | 13’5” - 14’5” | PHAL I | | prox. frag | BOV I |
| S94-7633 | M62 | 15’11” - 16’11” | PHAL I | | prox. frag | BOV I |
| BP/3/19256 | O63 | 8’6” - 10’6” | RIB | | prox. frag | BOV I |
| BP/3/33847 | L63 | 16’6” - 17’6” | RIB | | prox. frag | BOV I |
| BP/3/19268 | P59 | 12’1” - 13’8” | SCAP | | prox. frag | BOV I |
| S94-7651 | M62 | 15’11” - 16’11” | TIB | | prox frag | BOV I |
| BP/3/33128 | M60 | 14’2” - 15’2” | TIB | R | prox. frag | BOV I |
| BP/3/33572 | H62 | 21’10” - 22’10” | TIB | R | prox. shaft frag | BOV I |
| BP/3/32810 | N61 | 18’11” - 19’11” | TIB | R | prox. shaft frag | BOV I |
| S94-14839 | M61 | 16’8” - 17’8” | ULNA | L | prox. frag | BOV I |
| BP/3/34593 | I62 | 18’10” - 19’10” | ULNA | L | pxox. frag | BOV I |
| S94-7629 | M63 | 12’9” - 13’9” | PUB | R | frag | BOV I |
| S94-7630 | M63 | 12’9” - 13’9” | PUB | R | frag | BOV I |
| BP/3/34444 | J63 | 17’10” - 18’10” | PUB | R | frag | BOV I |
| BP/3/32817 | N59 | 15’0” - 16’0” | PUB | R | frag | BOV I |
| S94-10033 | N60 | 12’9” - 13’9” | PUB | L | frag | BOV I |
| S94-14814 | M61 | 16’8” - 17’8” | RAD | L | frag | BOV I |
| BP/3/18125 | M62 | 16’11” - 17’11” | RAD | L | dist. shaft frag | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32465 | H62 | 21’10” - 22’10” | RAD | L | shaft frag | BOV I |
| BP/3/33750 | K63 | | RAD | R | shaft frag | BOV I |
| BP/3/33532 | L62 | 14’5” - 15’5” | RAD | | shaft frag | BOV I |
| BP/3/33533 | L62 | 14’5” - 15’5” | RAD | | shaft frag | BOV I |
| BP/3/33689 | L63 | 12’6” - 13’6” | RAD | R | shaft frag | BOV I |
| S94-7558 | M63 | 11’9” - 12’9” | RAD | | shaft frag | BOV I |
| S94-7594 | M63 | 11’9” - 12’9” | RAD | | shaft frag | BOV I |
| S94-10067 | N60 | 13’9” - 14’9” | RAD | L | shaft frag | BOV I |
| BP/3/33093 | O60 | 14’3” - 15’3” | RAD | | shaft frag | BOV I |
| BP/3/19287 | P60 | 9’5” - 10’5” | RAD | R | shaft frag | BOV I |
| BP/3/33384 | J62 | 16’10” - 17’10” | RIB | | shaft frag | BOV I |
| BP/3/32347 | K63 | 15’10” - 16’10” | RIB | | shaft frag | BOV I |
| BP/3/32348 | K63 | 15’10” - 16’10” | RIB | | shaft frag | BOV I |
| BP/3/33797 | K63 | | RIB | | shaft frag | BOV I |
| BP/3/17919 | L63 | 11’6” - 12’6” | RIB | | frag frag | BOV I |
| BP/3/18105 | L63 | 12’6” - 13’6” | RIB | | frag | BOV I |
| BP/3/18113 | L63 | 12’6” - 13’6” | RIB | | frag | BOV I |
| BP/3/32953 | M60 | 15’2” - 16’2” | RIB | | shaft frag | BOV I |
| BP/3/33028 | M61 | 15’8” - 16’8” | RIB | | shaft frag | BOV I |
| BP/3/33029 | M61 | 15’8” - 16’8” | RIB | | shaft frag | BOV I |
| BP/3/33030 | M61 | 15’8” - 16’8” | RIB | | shaft frag | BOV I |
| BP/3/33031 | M61 | 15’8” - 16’8” | RIB | | shaft frag | BOV I |
| BP/3/33032 | M61 | 15’8” - 16’8” | RIB | | shaft frag | BOV I |
| BP/3/33043 | M61 | 15’8” - 16’8” | RIB | | shaft frag | BOV I |
| S94-7532 | M63 | 11’9” - 12’9” | RIB | | shaft frag | BOV I |
| S94-7563 | M63 | 11’9” - 12’9” | RIB | | shaft frag | BOV I |
| S94-7605 | M63 | 12’9” - 13’9” | RIB | | shaft frag | BOV I |
| S94-7608 | M63 | 12’9” - 13’9” | RIB | | shaft frag | BOV I |
| S94-7620 | M63 | 12’9” - 13’9” | RIB | | shaft frag | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33283 | N60 | 20'9" - 21'9" | RIB | | shaft frag | BOV I |
| BP/3/32814 | N61 | 18'11" - 19'11" | RIB | | shaft frag | BOV I |
| BP/3/19257 | O63 | 8'6" - 10'6" | RIB | | shaft frag | BOV I |
| BP/3/19281 | P61 | 12'1" - 13'1" | RIB | | Frag | BOV I |
| S94-2006 | P62 | 16'0" - 17'0" | RIB | | Frag | BOV I |
| BP/3/34165 | K63 | | SAC | | Frag | BOV I |
| BP/3/34058 | M60 | 10'5" - 11'5" | SAC | | Frag | BOV I |
| BP/3/34420 | J63 | 13'10" - 14'10" | SCAP | L | blade frag | BOV I |
| BP/3/33886 | K62 | 15'10" - 16'10" | SCAP | L | distal frag | BOV I |
| BP/3/33898 | K62 | 15'10" - 16'10" | SCAP | L | ridge frag | BOV I |
| BP/3/34525 | K62 | 18'10" - 19'10" | SCAP | L | blade frag | BOV I |
| BP/3/33596 | K63 | 15'10" - 16'10" | SCAP | R | ridge frag | BOV I |
| BP/3/33817 | K63 | | SCAP | L | neck | BOV I |
| BP/3/33522 | L62 | 14'5" - 15'5" | SCAP | L | ridge frag | BOV I |
| BP/3/33278 | L62 | 15'5" - 16'5" | SCAP | R | dist. | BOV I |
| BP/3/33418 | L62 | 17'5" - 18'5" | SCAP | R | ridge frag | BOV I |
| BP/3/34151 | L63 | 12'6" - 13'6" | SCAP | R | neck | BOV I |
| BP/3/34057 | M60 | 10'5" - 11'5" | SCAP | R | ridge frag | BOV I |
| BP/3/33458 | M60 | 15'2" - 16'2" | SCAP | L | dist. | BOV I |
| BP/3/33490 | M61 | 15'8" - 16'8" | SCAP | | blade frag | BOV I |
| S94-14802 | M61 | 16'8" - 17'8" | SCAP | | blade frag | BOV I |
| S94-7654 | M62 | 15'11" - 16'11" | SCAP | R | distal frag | BOV I |
| BP/3/18194 | M62 | 17'11" - 18'11" | SCAP | | Frag | BOV I |
| S94-10060 | N60 | 13'9" - 14'9" | SCAP | L | blade frag | BOV I |
| S94-6573 | O60 | 12'3" - 13'3" | SCAP | L | Frag | BOV I |
| BP/3/34255 | L63 | 15'6" - 16'6" | SCAPH | R | | BOV I |
| BP/3/34456 | J63 | 16'10" - 17'10" | SES | | | BOV I |
| S94-8052 | N63 | 13'7" - 14'7" | SES | | | BOV I |
| BP/3/34343 | J63 | 15'10" - 16'10" | THOR | | Frag | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34129 | K63 | | THOR | | | BOV I |
| BP/3/33722 | K63 | | THOR | | centrum | BOV I |
| S94-14744 | L63 | 12’6” - 13’6” | THOR | | neural arch + spine | BOV I |
| BP/3/28099 | L63 | 12’6” - 13’6” | THOR | | Frag | BOV I |
| S94-14739 | L63 | 12’6” - 13’6” | THOR | | neural spine | BOV I |
| BP/3/34178 | L63 | 15’6” - 16’6” | THOR | | Frag | BOV I |
| BP/3/33849 | L63 | 16’6” - 17’6” | THOR | | centrum | BOV I |
| BP/3/34053 | M60 | 10’5” - 11’5” | THOR | | centrum | BOV I |
| BP/3/32919 | M61 | 14’8” - 15’8” | THOR | | centrum | BOV I |
| BP/3/32920 | M61 | 14’8” - 15’8” | THOR | | centrum | BOV I |
| S94-14801 | M61 | 16’8” - 17’8” | THOR | | | BOV I |
| BP/3/33571 | H62 | 21’10” - 22’10” | TIB | R | dist. shaft frag | BOV I |
| BP/3/34578 | I62 | 18’10” - 19’10” | TIB | L | dist. Shaft frag | BOV I |
| BP/3/34404 | J62 | 14’10” - 15’10” | TIB | L | shaft frag | BOV I |
| BP/3/33339 | J62 | 16’10” - 17’10” | TIB | L | shaft frag | BOV I |
| BP/3/33118 | L62 | 13’5” - 14’5” | TIB | | shaft frag | BOV I |
| BP/3/33529 | L62 | 14’5” - 15’5” | TIB | L | dist. shaft frag | BOV I |
| BP/3/18112 | L63 | 12’6” - 13’6” | TIB | R | shaft frag | BOV I |
| BP/3/33465 | M60 | 15’2” - 16’2” | TIB | | shaft frag | BOV I |
| BP/3/33652 | M62 | 16’11” - 17’11” | TIB | | dist. shaft frag | BOV I |
| BP/3/33650 | M62 | 16’11” - 17’11” | TIB | L | shaft frag | BOV I |
| BP/3/33651 | M62 | 16’11” - 17’11” | TIB | | shaft frag | BOV I |
| S94-7621 | M63 | 12’9” - 13’9” | TIB | | shaft frag | BOV I |
| S94-1202 | N63 | 13’10” - 14’10” | TIB | L | dist. | BOV I |
| S94-1193 | N63 | 13’10” - 14’10” | TIB | L | shaft frag | BOV I |
| BP/3/32811 | N61 | 18’11” - 19’11” | TIB | | dist. shaft frag | BOV I |
| S94-6576 | O60 | 12’3” - 13’3” | TIB | R | shaft frag | BOV I |
| S94-11216 | P58 | 18’10” - 19’10” | TIB | L | shaft frag | BOV I |
| BP/3/19151 | Q58 | 14’6” - 15’3” | TIB | R | dist. Frag | BOV I |
| BP/3/33017 | M61 | 15’8” - 16’8” | TIB | R | shaft | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33274 | L62 | 15’5” - 16’5” | ULNA | L | trochlea notch | BOV I |
| BP/3/34426 | J62 | 20’10” - 21’10” | UPPER M | | whole | BOV I |
| BP/3/33767 | K63 | | VERT | | neural arch | BOV I |
| BP/3/33766 | K63 | | VERT | | neural spine frag | BOV I |
| BP/3/33768 | K63 | | VERT | | centrum | BOV I |
| BP/3/34164 | K63 | | VERT | | Frag | BOV I |
| BP/3/33417 | L62 | 17’5” - 18’5” | VERT | | centrum frag | BOV I |
| P/3/17018 | L63 | 11’6” - 12’6” | VERT | | neural arch + spine | BOV I |
| BP/3/17016 | L63 | 11’6” - 12’6” | VERT | | centrum frag | BOV I |
| BP/3/28100 | L63 | 12’6” - 13’6” | VERT | | neural spine frag | BOV I |
| BP/3/28102 | L63 | 12’6” - 13’6” | VERT | | centrum frag | BOV I |
| S94-14740 | L63 | 12’6” - 13’6” | VERT | | Frag | BOV I |
| BP/3/18012 | L63 | 14’6” - 15’6” | VERT | | Frag | BOV I |
| BP/3/33429 | M61 | 14’8” - 15’8” | VERT | | neural spine frag | BOV I |
| BP/3/33042 | M61 | 15’8” - 16’8” | VERT | | neural spine | BOV I |
| BP/3/33294 | M63 | 13’9” - 14’9” | VERT | | Frag | BOV I |
| S94-11218 | P58 | 19’10” - 20’10” | VERT | | centrum frag | BOV I |
| S94-6845 | P59 | 18’2” - 19’2” | VERT | | centrum frag | BOV I |
| S94-6823 | P60 | 16’6” - 17’6” | VERT | | Frag | BOV I |
| S94-7798 | Q59 | 14’0’ ’- 15’0” | VERT | | centrum frag | BOV I |
| BP/3/32672 | J62 | 16’10” - 17’10” | 1/2 MAX | L | Frag | BOV I |
| BP/3/33092 | O60 | 14’3” - 15’3” | 1/2 PEL | | | BOV I |
| BP/3/32533 | M61 | 19’8” - 20’9” | CALC | L | Frag | BOV I |
| BP/3/32283 | K63 | 17’0” - 18’0” | HUM | L | dist. | BOV I |
| BP/3/32651 | J62 | 16’10” - 17’10” | MTT | | dist. | BOV I |
| BP/3/33613 | K63 | 17’0” - 18’0” | TIB | R | dist. | BOV I |
| BP/3/32498 | O63 | 13’6” - 14’6” | FEM | | shaft frag | BOV I |
| BP/3/32512 | M63 | 15’9” - 16’9” | HUM | | shaft frag | BOV I |
| BP/3/32632 | L62 | 17’5” - 18’5” | HUM | L | dist. shaft frag | BOV I |
| BP/3/32883 | M61 | 14’8” - 15’8” | HUM | L | shaft frag | BOV I |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32942 | M61 | 14'8" - 15'8" | HUM | L | shaft frag | BOV I |
| BP/3/32848 | N59 | 18'0" - 19'0" | HUM | L | shaft frag | BOV I |
| BP/3/32618 | M63 | 13'9" - 14'9" | LBSF | | | BOV I |
| S94-1340 | O60 | 12'3" - 13'3" | LBSF | | | BOV I |
| S94-6828 | P60 | 16'6" - 17'6" | M1 | L | | BOV I |
| BP/3/32677 | J62 | 16'10" - 17'10" | M3 | L | | BOV I |
| BP/3/32561 | M63 | 14'9" - 15'9" | PHAL I | | | BOV I |
| BP/3/32484 | K63 | 15'10" - 16'10" | RIB | | shaft frag | BOV I |
| BP/3/32401 | K63 | 17'0" - 18'0" | RIB | | shaft frag | BOV I |
| BP/3/32992 | L62 | 13'5" - 14'5" | RIB | | shaft frag | BOV I |
| BP/3/33117 | L62 | 13'5" - 14'5" | RIB | | shaft frag | BOV I |
| BP/3/33027 | M61 | 15'8" - 16'8" | RIB | | shaft frag | BOV I |
| BP/3/19150 | Q58 | 14'6" - 15'3" | RIB | | shaft frag | BOV I |
| BP/3/32570 | M63 | 14'9" - 15'9" | TIB | R | shaft frag | BOV I |
| BP/3/33087 | O60 | 12'3" - 13'3" | TIB | | shaft frag | BOV I |
| BP/3/33111 | O61 | 14'8" - 15'8" | TIB | R | shaft frag | BOV I |
| BP/3/33200 | J62 | 16'10" - 17'10" | ULNA | R | trochlea | BOV I |
| BP/3/32918 | M61 | 14'8" - 15'8" | VERT | | neural spine | BOV I |
| BP/3/34112 | K63 | | M2 | R | | *Aepyceros melampus* |
| BP/3/33281 | L62 | 15'5" - 16'5" | I | R | Frag | *A. melampus* |
| S94-14817 | M61 | 16'8" - 17'8" | LOWER MOLAR | R | whole | *A. melampus* |
| BP/3/33155 | L62 | 14'5" - 15'5" | M2 | L | | *A. melampus* |
| BP/3/34204 | L63 | 15'6" - 16'6" | M2 | R | Frag | *A. melampus* |
| BP/3/33933 | K62 | 15'10" - 16'10" | M3 | R | | *A. melampus* |
| BP/3/34311 | K62 | 21'10" - 22'10" | M3 | R | | *A. melampus* |
| BP/3/32409 | K63 | 17'0" - 18'0" | M3 | R | | *A. melampus* |
| BP/3/34191 | L63 | 15'6" - 16'6" | M3 | R | | *A. melampus* |
| NO NUMBER | POST-MEMBER 6 | | HORN | L+R | | *Ammotragus lervia* |
| S94-6875 | P59 | 15'2" - 16'2" | DIASTEMA | R | | *Antidorcas marsupialis* |
| BP/3/34186 | L63 | 15'6" - 16'6" | DP2 | R | | *A. marsupialis* |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32318 | K63 | 15’10” - 16’10” | DP4 | L | | *A. marsupialis* |
| BP/3/34192 | L63 | 15’6” - 16’6” | DP4 | R | | *A. marsupialis* |
| BP/3/32753 | N59 | 21’0” - 22’0” | DP4 | | Frag | *A. marsupialis* |
| BP/3/34481 | K62 | 17’10” - 18’10” | HORN | | core + cranial frag | *A. marsupialis* |
| BP/3/34315 | J62 | 15’10” - 16’10” | HORN | | core | *A. marsupialis* |
| BP/3/33951 | L62 | 16’5” - 17’5” | I | R | | *A. marsupialis* |
| BP/3/33273 | L62 | 15’5” - 16’5” | I1 | L | | *A. marsupialis* |
| BP/3/33957 | L62 | 16’5” - 17’5” | I1 | L | | *A. marsupialis* |
| BP/3/33259 | L62 | 17’5” - 18’5” | I1 | L | | *A. marsupialis* |
| BP/3/34183 | L63 | 15’6” - 16’6” | I1 | R | | *A. marsupialis* |
| BP/3/34066 | M60 | 12’5” - 13’5” | I1 | L | | *A. marsupialis* |
| BP/3/33931 | K62 | 15’10” - 16’10” | I2 | L | | *A. marsupialis* |
| BP/3/34094 | K63 | | I2 | R | | *A. marsupialis* |
| S94-6837 | P58 | 27’10” - 28’10” | I2 | L | | *A. marsupialis* |
| BP/3/33579 | M63 | 17’10” - 18’10” | I3 | L | | *A. marsupialis* |
| BP/3/32369 | I62 | 19’10” - 20’20” | M1 | L | | *A. marsupialis* |
| BP/3/32367 | J63 | 19’10” - 20’10” | M1 | R | | *A. marsupialis* |
| BP/3/34111 | K63 | | M1 | L | | *A. marsupialis* |
| BP/3/34213 | L63 | 15’6” - 16’6” | M1 | R | | *A. marsupialis* |
| BP/3/33856 | L63 | 16’6” - 17’6” | M1 | L | | *A. marsupialis* |
| BP/3/34033 | M61 | 11’3” - 12’3” | M1 | R | | *A. marsupialis* |
| BP/3/32706 | J62 | 17’10” - 18’10” | M2 | L | | *A. marsupialis* |
| BP/3/33260 | L62 | 17’5” - 18’5” | M2 | L | | *A. marsupialis* |
| BP/3/33270 | L62 | 17’5” - 18’5” | M2 | L | | *A. marsupialis* |
| BP/3/33256 | N60 | 20’9” - 21’9” | M2 | L | | *A. marsupialis* |
| S94-6856 | P58 | 23’10” - 24’10” | M2 | L | | *A. marsupialis* |
| BP/3/33269 | L62 | 17’5” - 18’5” | M2-3 | R | | *A. marsupialis* |
| BP/3/34493 | K62 | 20’10” - 21’10” | M3 | L | | *A. marsupialis* |
| BP/3/33261 | L62 | 17’5” - 18’5” | M3 | L | | *A. marsupialis* |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33065 | M61 | 14’8” - 15’8” | M3 | L | Frag | *A. marsupialis* |
| BP/3/32751 | N59 | 21’0” - 22’0” | M3 | R | | *A. marsupialis* |
| S94-6802 | P59 | 18’4” - 19’4” | M3 | R | | *A. marsupialis* |
| S94-6871 | P59 | 15’2” - 16’2” | 1/2 MAND +M1-2 | R | Frag | *A. marsupialis* |
| BP/3/33779 | K63 | | 1/2 MAND +M1+M2/P4 | L | Frag | *A. marsupialis* |
| BP/3/33919 | K62 | 15’10” - 16’10” | 1/2 MAND +M2 | R | Frag | *A. marsupialis* |
| BP/3/33254 | N60 | 20’9” - 21’9” | 1/2 MAND +M2 | R | Frag | *A. marsupialis* |
| BP/3/33929 | K62 | 15’10” - 16’10” | 1/2 MAND +P3-M3 | L | Frag | *A. marsupialis* |
| BP/3/33044 | L62 | 13’5” - 14’5” | 1/2 MAND +P3-M3 | R | Frag | *A. marsupialis* |
| BP/3/33928 | K62 | 15’10” - 16’10” | 1/2 MAND +P4-M3 | R | Frag | *A. marsupialis* |
| BP/3/33045 | L62 | 13’5” - 14’5” | 1/2 MAND +P4-M3 | L | Frag | *A. marsupialis* |
| BP/3/34188 | L63 | 15’6” - 16’6” | 1/2 MAND +TEETH | R | Frag | *A. marsupialis* |
| BP/3/33783 | K63 | | 1/2 MAX P2-M2 | R | Frag | *A. marsupialis* |
| BP/3/33051 | L62 | 13’5” - 14’5” | 1/2 MAX +MS | R | Frag | *A. marsupialis* |
| BP/3/33268 | L62 | 17’5” - 18’5” | 1/2 MAX +P3-M3 | L | Frag | *A. marsupialis* |
| BP/3/33048 | L62 | 13’5” - 14’5” | 1/2 MAX +P4-M3 | L | Frag | *A. marsupialis* |
| BP/3/33049 | L62 | 13’5” - 14’5” | 1/2 MAX +P4-M3 | R | Frag | *A. marsupialis* |
| BP/3/34189 | L63 | 15’6” - 16’6” | 1/2 MAX +TEETH | L | Frag | *A. marsupialis* |
| BP/3/32705 | J62 | 17’10” - 18’10” | 1/2 MAX FRAG +P2&3 | L | Frag | *A. marsupialis* |
| BP/3/34113 | K63 | | P | | | *A. marsupialis* |
| BP/3/34097 | K63 | | P3 | L | | *A. marsupialis* |
| BP/3/34200 | L63 | 15’6” - 16’6” | P3 | L | | *A. marsupialis* |
| BP/3/32410 | K63 | 17’0” - 18’0” | P4 | L | | *A. marsupialis* |
| BP/3/34201 | L63 | 15’6” - 16’6” | P4 | L | | *A. marsupialis* |
| BP/3/34010 | M61 | 11’3” - 12’3” | P4 | L | | *A. marsupialis* |
| BP/3/32293 | K63 | 17’0” - 18’0” | PHAL I | | | *A. marsupialis* |
| BP/3/32406 | K63 | 17’0” - 18’0” | TIB | R | dist. shaft frag | *A. marsupialis* |
| BP/3/33542 | H62 | 21’10” - 22’10” | 1/2 MAND | R | Frag | BOV II |
| BP/3/33543 | H62 | 21’10” - 22’10” | 1/2 MAND | L | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34624 | I62 | 18'10" - 19'10" | 1/2 MAND | L | Frag | BOV II |
| BP/3/34465 | J63 | 17'10" - 18'10" | 1/2 MAND | L | Frag | BOV II |
| BP/3/34439 | K62 | 17'10" - 18'10" | 1/2 MAND | | Frag | BOV II |
| BP/3/34497 | K62 | 20'10" - 21'10" | 1/2 MAND | R | Frag | BOV II |
| BP/3/33591 | L62 | 13'5" - 14'5" | 1/2 MAND | L | Frag | BOV II |
| BP/3/32382 | I62 | 19'10" - 20'20" | 1/2 MAND | R | Frag | BOV II |
| BP/3/33377 | J62 | 16'10" - 17'10" | 1/2 MAND | L | Frag | BOV II |
| BP/3/32323 | K63 | 15'10" - 16'10" | 1/2 MAND | R | Frag | BOV II |
| BP/3/34147 | K63 | | 1/2 MAND | | Frag | BOV II |
| BP/3/33389 | L62 | 15'5" - 16'5" | 1/2 MAND | R | Frag | BOV II |
| BP/3/34243 | L63 | 15'6" - 16'6" | 1/2 MAND | R | Frag | BOV II |
| BP/3/34046 | M60 | 10'5" - 11'5" | 1/2 MAND | R | symph. | BOV II |
| BP/3/33134 | M60 | 14'2" - 15'2" | 1/2 MAND | R | Frag | BOV II |
| BP/3/33135 | M60 | 14'2" - 15'2" | 1/2 MAND | | Frag | BOV II |
| BP/3/33456 | M60 | 15'2" - 16'2" | 1/2 MAND | | Frag | BOV II |
| BP/3/32921 | M61 | 14'8" - 15'8" | 1/2 MAND | L | Frag | BOV II |
| BP/3/33482 | M61 | 15'8" - 16'8" | 1/2 MAND | L | Frag | BOV II |
| S94-1603 | M62 | 9'11" - 10'11" | 1/2 MAND | L | Frag | BOV II |
| BP/3/32563 | M63 | 14'9" - 15'9" | 1/2 MAND | | Frag | BOV II |
| S94-1618 | N61 | 15'11" - 16'11" | 1/2 MAND | R | Frag | BOV II |
| BP/3/33474 | O60 | 13'3" - 14'3" | 1/2 MAND | | Frag | BOV II |
| BP/3/33399 | P58 | 13'10" - 14'10" | 1/2 MAND | L | Frag | BOV II |
| S94-11215 | P58 | 18'10" - 19'10" | 1/2 MAND | L | Frag | BOV II |
| BP/3/33663 | M62 | 16'11" - 17'11" | 1/2 MAND+ROOTS | | Frag | BOV II |
| BP/3/34438 | K62 | 17'10" - 18'10" | 1/2 MAND | L | ramus frag | BOV II |
| BP/3/34011 | M61 | 11'3" - 12'3" | 1/2 MAND | L | ramus frag | BOV II |
| BP/3/34654 | J62 | 20'10" - 21'10" | 1/2 MAND+DP | R | Frag | BOV II |
| BP/3/18177 | M62 | 16'11" - 17'11" | 1/2 MAND+M | | Frag | BOV II |
| BP/3/34241 | L63 | 15'6" - 16'6" | 1/2 MAND+M1-2 | R | Frag | BOV II |
| BP/3/34370 | J63 | 15'10" - 16'10" | 1/2 MAND+M1-2 | L | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34217 | L63 | 15’6” - 16’6” | 1/2 MAND +M2-3 | R | Frag | BOV II |
| BP/3/33778 | K63 | | 1/2 MAND +M2F+M3 | R | Frag | BOV II |
| BP/3/33776 | K63 | | 1/2 MAND +M3 | R | Frag | BOV II |
| BP/3/34239 | L63 | 15’6” - 16’6” | 1/2 MAND +M3 | L | Frag | BOV II |
| BP/3/34218 | L63 | 15’6” - 16’6” | 1/2 MAND +MS | R | Frag | BOV II |
| BP/3/33777 | K63 | | 1/2 MAND +P2-4 | R | Frag | BOV II |
| BP/3/34000 | M61 | 11’3” - 12’3” | 1/2 MAND +ROOTS | | Frag | BOV II |
| BP/3/34187 | L63 | 15’6” - 16’6” | 1/2 MAND +TEETH | L | Frag | BOV II |
| S94-8364 | M63 | 13’9” - 14’9” | 1/2 MAND +TEETH | | Frag | BOV II |
| BP/3/34425 | J62 | 20’10” - 21’10” | 1/2 MAND +DP | R | Frag | BOV II |
| BP/3/34371 | J63 | 15’10” - 16’10” | 1/2 MAND +M2 | R | Frag | BOV II |
| BP/3/33785 | K63 | | 1/2 MAX +P2+3 | R | Frag | BOV II |
| BP/3/18127 | M62 | 16’11” - 17’11” | 1/2 MAX +M1+2 | | Frag | BOV II |
| BP/3/33920 | K62 | 15’10” - 16’10” | 1/2 MAX +M | | Frag | BOV II |
| BP/3/33782 | K63 | | 1/2 MAX +M2 | | Frag | BOV II |
| BP/3/18205 | M62 | 17’11” - 18’11” | 1/2 MAX +P | | Frag | BOV II |
| BP/3/33047 | L62 | 13’5” - 14’5” | 1/2 MAX +TEETH | | Frag | BOV II |
| BP/3/33584 | J62 | 16’10” - 17’10” | 1/2 MAX | | frag | BOV II |
| BP/3/32398 | J63 | 20’10” - 21’10” | 1/2 MAX | L | Frag | BOV II |
| BP/3/33594 | L62 | 13’5” - 14’5” | 1/2 MAX | R | Frag | BOV II |
| BP/3/33136 | M60 | 14’2” - 15’2” | 1/2 MAX | | Frag | BOV II |
| BP/3/34637 | H63 | 22’10” - 23’10” | 1/2 MAX +M2-3 | R | frag | BOV II |
| BP/3/34636 | H63 | 22’10” - 23’10” | 1/2 MAX +M3 | L | frag | BOV II |
| BP/3/34620 | I62 | 18’10” - 19’10” | 1/2 PEL | | Frag | BOV II |
| BP/3/33900 | K62 | 15’10” - 16’10” | 1/2 PEL | | Frag | BOV II |
| BP/3/33940 | L63 | | 1/2 PEL | | Frag | BOV II |
| BP/3/33989 | M61 | 11’3” - 12’3” | 1/2 PEL | R | Frag | BOV II |
| BP/3/34005 | M61 | 11’3” - 12’3” | 1/2 PEL | L | Frag | BOV II |
| BP/3/32934 | M61 | 14’8” - 15’8” | 1/2 PEL | | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33477 | M61 | 15’8” - 16’8” | 1/2 PEL | | Frag | BOV II |
| S94-7684 | M62 | 13’11” - 14’11” | 1/2 PEL | L | Frag | BOV II |
| BP/3/33258 | N60 | 20’9” - 21’9” | 1/2 PEL | | Frag | BOV II |
| S94-10125 | N64 | 12’8” - 13’8” | 1/2 PEL | | Frag | BOV II |
| BP/3/16892 | O63 | 16’6” - 17’6” | 1/2 PEL | | Frag | BOV II |
| BP/3/33400 | P58 | 13’10” - 14’10” | 1/2 PEL | | Frag | BOV II |
| S94-11246 | P59 | 18’4” - 19’4” | 1/2 PEL | | Frag | BOV II |
| BP/3/34641 | J62 | 20’10” - 21’10” | 1/2 PEL | L | Frag | BOV II |
| BP/3/33471 | M61 | 19’8”-20’8” | ACET | R | Frag | BOV II |
| S94-1163 | N61 | 11’10” - 12’10” | ACET | L | Frag | BOV II |
| BP/3/34671 | P60 | 14’10” - 15’10” | ACET | R | Frag | BOV II |
| S94-7652 | M62 | 15’11” - 16’11” | 1/2 PEL | L | Frag | BOV II |
| S94-7729 | M62 | 10’11” - 11’11” | 1/2 PEL | L | Frag | BOV II |
| S94-7744 | M63 | 11’9” - 12’9” | 1/2 PEL | R | Frag | BOV II |
| S94-7746 | M63 | 11’9” - 12’9” | 1/2 PEL | L | Frag | BOV II |
| S94-6481 | O63 | 13’0” - 14’0” | 1/2 PEL | R | Frag | BOV II |
| S94-7737 | M62 | 9’11” - 10’11” | 1/2 PEL | R | Frag | BOV II |
| BP/3/33558 | H62 | 21’10” - 22’10” | 1/2 PEL | R | Frag | BOV II |
| S94-6723 | P59 | 16’2” - 17’2” | 1/2 PEL | R | Frag | BOV II |
| BP/3/34348 | J63 | 15’10” - 16’10” | ASTRAG | R | Frag | BOV II |
| BP/3/34428 | K62 | 17’10” - 18’10” | ASTRAG | L | | BOV II |
| BP/3/34070 | K63 | | ASTRAG | L | | BOV II |
| BP/3/34071 | K63 | | ASTRAG | R | | BOV II |
| BP/3/34072 | K63 | | ASTRAG | L | | BOV II |
| BP/3/34074 | K63 | | ASTRAG | R | Frag | BOV II |
| BP/3/34168 | K63 | | ASTRAG | | Frag | BOV II |
| S94-7637 | M62 | 15’11” - 16’11” | ASTRAG | L | | BOV II |
| S94-7544 | M63 | 11’9” - 12’9” | ASTRAG | L | | BOV II |
| S94-7550 | M63 | 11’9” - 12’9” | ASTRAG | R | | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32728 | N59 | 21’0” - 22’0” | ASTRAG | R | Frag | BOV II |
| BP/3/33237 | N60 | 20’9” - 21’9” | ASTRAG | L | | BOV II |
| S94-9540 | N60 | 20’9” - 21’9” | ASTRAG | L | Frag | BOV II |
| S94-6574 | O60 | 12’3” - 13’3” | ASTRAG | R | Frag | BOV II |
| S94-6800 | P59 | 18’4” - 19’4” | ASTRAG | L | | BOV II |
| S94-2703 | Q58 | 18’3” - 19’3” | ASTRAG | R | | BOV II |
| S94-7797 | Q59 | 14’0’ ’- 15’0” | ASTRAG | L | Frag | BOV II |
| S94-7808 | Q59 | 15’0” - 16’0” | ASTRAG | R | Frag | BOV II |
| BP/3/33760 | K63 | | ATLAS | | | BOV II |
| BP/3/33823 | K63 | | ATLAS | | | BOV II |
| S94-7604 | M63 | 12’9” - 13’9” | ATLAS | | | BOV II |
| BP/3/34461 | K62 | 20’10” - 21’10” | AXIS | | Frag | BOV II |
| S94-7527 | M63 | 11’9” - 12’9” | AXIS | | Frag | BOV II |
| S94-9998 | M64 | 10’8” - 11’8” | AXIS | | Frag | BOV II |
| S94-8050 | N63 | 13’7” - 14’7” | AXIS | | Frag | BOV II |
| BP/3/32650 | J62 | 16’10” - 17’10” | CALC | L | | BOV II |
| BP/3/34351 | J63 | 15’10” - 16’10” | CALC | L | | BOV II |
| BP/3/33907 | K62 | 15’10” - 16’10” | CALC | R | caudal frag | BOV II |
| BP/3/34176 | L63 | 15’6” - 16’6” | CALC | L | caudal frag | BOV II |
| S94-14993 | M64 | 11’4” - 12’4” | CALC | L | caudal frag | BOV II |
| BP/3/32727 | N59 | 21’0” - 22’0” | CALC | L | | BOV II |
| S94-6681 | P58 | 24’10” - 25’10” | CALC | L | caudal | BOV II |
| BP/3/19208 | P61 | 11’11” - 12’11” | CALC | L | head | BOV II |
| BP/3/34429 | K62 | 17’10” - 18’10” | CALC | L | Frag | BOV II |
| BP/3/33005 | L62 | 13’5” - 14’5” | CALC | L | Frag | BOV II |
| BP/3/33161 | L62 | 14’5” - 15’5” | CALC | R | Frag | BOV II |
| BP/3/34254 | L63 | 15’6” - 16’6” | CALC | L | Frag | BOV II |
| BP/3/34040 | M60 | 10’5” - 11’5” | CALC | R | | BOV II |
| BP/3/33994 | M61 | 11’3” - 12’3” | CALC | L | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32530 | M61 | 19’8” - 20’9” | CALC | R | Frag | BOV II |
| S94-7526 | M63 | 11’9” - 12’9” | CALC | L | | BOV II |
| S94-7549 | M63 | 11’9” - 12’9” | CALC | L | Frag | BOV II |
| S94-7583 | M63 | 11’9” - 12’9” | CALC | | Frag | BOV II |
| S94-14923 | M63 | MIXED | CALC | R | Frag | BOV II |
| S94-9986 | M64 | 9’8” - 10’8” | CALC | R | Frag | BOV II |
| BP/3/33185 | N60 | 22’9” - 23’9” | CALC | R | Frag | BOV II |
| BP/3/32548 | P59 | 14’1” - 15’1” | CALC | R | Frag | BOV II |
| BP/3/33080 | P61 | 15’10” - 16’10” | CALC | | Frag | BOV II |
| BP/3/32648 | L62 | 15’5” - 16’5” | CALC | L | Frag | BOV II |
| S94-14832 | M61 | 16’8” - 17’8” | CARA | | | BOV II |
| BP/3/34396 | J63 | 18’10” - 19’10” | CAUD | | | BOV II |
| BP/3/33841 | L63 | 16’6” - 17’6” | CAUD | | | BOV II |
| BP/3/33559 | H62 | 21’10” - 22’10” | CERV | | Frag | BOV II |
| BP/3/33560 | H62 | 21’10” - 22’10” | CERV | | Frag | BOV II |
| BP/3/34597 | I62 | 18’10” - 19’10” | CERV | | Frag | BOV II |
| BP/3/32710 | J62 | 17’10” - 18’10” | CERV | | | BOV II |
| BP/3/34455 | J63 | 16’10” - 17’10” | CERV | | | BOV II |
| BP/3/28094 | L63 | 12’6” - 13’6” | CERV | | Frag | BOV II |
| BP/3/28097 | L63 | 12’6” - 13’6” | CERV | | Frag | BOV II |
| S94-14737 | L63 | 12’6” - 13’6” | CERV | | Frag | BOV II |
| S94-14752 | L63 | 12’6” - 13’6” | CERV | | Frag | BOV II |
| S94-14755 | L63 | 12’6” - 13’6” | CERV | | Frag | BOV II |
| BP/3/33850 | L63 | 16’6” - 17’6” | CERV | | Frag | BOV II |
| BP/3/17953 | L63 | MIXED | CERV | | Frag | BOV II |
| BP/3/17958 | L63 | MIXED | CERV | | Frag | BOV II |
| BP/3/32832 | N59 | 15’0” - 16’0” | CERV | | centrum | BOV II |
| S94-1227 | N63 | 12’9” - 13’9” | CERV | | centrum frag | BOV II |
| S94-6437 | O63 | 14’6” - 15’10” | CERV | | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-11250 | P59 | 25’2” - 26’2” | condyle | | frag | BOV II |
| BP/3/33570 | H62 | 21’10” - 22’10” | CRAN | | Frag | BOV II |
| BP/3/33222 | J62 | 16’10” - 17’10” | CRAN | | Frag | BOV II |
| BP/3/33927 | K62 | 15’10” - 16’10” | CRAN | | Frag | BOV II |
| BP/3/34480 | K62 | 17’10” - 18’10” | CRAN | | Frag | BOV II |
| BP/3/32319 | K63 | 15’10” - 16’10” | CRAN | | Frag | BOV II |
| BP/3/32330 | K63 | 15’10” - 16’10” | CRAN | | Frag | BOV II |
| BP/3/32301 | K63 | 17’0” - 18’0” | CRAN | | Frag | BOV II |
| BP/3/33478 | O60 | 13’3” - 14’3” | CRAN | | Frag | BOV II |
| BP/3/192043 | O60 | 8’3” - 9’3” | CRAN | | Frag | BOV II |
| BP/3/192405 | O60 | 8’3” - 9’3” | CRAN | | Frag | BOV II |
| BP/3/192408 | O60 | 8’3” - 9’3” | CRAN | | Frag | BOV II |
| BP/3/19130 | O61 | 11’5” - 12’5” | CRAN | | Frag | BOV II |
| BP/3/33298 | P59 | 14’1” - 15’1” | CRAN | | Frag | BOV II |
| BP/3/19140 | P61 | 13’1” - 14’10” | CRAN | | Frag | BOV II |
| | P64 | 10’8” - 11’8” | OS PET | | | BOV II |
| BP/3/32723 | N59 | 21’0” - 22’0” | CRAN+HORNCORE | | Frag | BOV II |
| BP/3/33248 | N60 | 20’9” - 21’9” | CUN | L | | BOV II |
| BP/3/33251 | N60 | 20’9” - 21’9” | CUN | | Frag | BOV II |
| S94-6799 | P59 | 18’4” - 19’4” | CUN | L | | BOV II |
| BP/3/33881 | K62 | 15’10” - 16’10” | DIASTEMA | R | Frag | BOV II |
| BP/3/34003 | M61 | 11’3” - 12’3” | DIASTEMA | L | Frag | BOV II |
| S94-1626 | M62 | 15’11” - 16’11” | DIASTEMA | R | Frag | BOV II |
| S94-1620 | M63 | 11’9” - 12’9” | DIASTEMA | L | Frag | BOV II |
| BP/3/32999 | L62 | 13’5” - 14’5” | FEM | R | dist. | BOV II |
| S94-7522 | M63 | 11’9” - 12’9” | FEM | L | dist. | BOV II |
| S94-7546 | M63 | 11’9” - 12’9” | FEM | R | dist. | BOV II |
| S94-7656 | M62 | 14’11” - 15’11” | FEM | R | dist. + shaft | BOV II |
| BP/3/34231 | L63 | 15’6” - 16’6” | FEM | R | dist. frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32873 | N59 | 13’0” - 14’0” | FEM | L | dist. frag | BOV II |
| S94-7579 | M63 | 11’9” - 12’9” | FEM | L | dist. frag | BOV II |
| BP/3/33018 | M61 | 15’8” - 16’8” | FEM | R | dist. shaft frag | BOV II |
| BP/3/33640 | M62 | 16’11” - 17’11” | FEM | | dist. shaft | BOV II |
| BP/3/33225 | N59 | 22’0” - 23’0” | FEM | R | dist. shaft | BOV II |
| S94-14834 | M61 | 16’8” - 17’8” | FEM | L | dist. shaft | BOV II |
| BP/3/32734 | N59 | 21’0” - 22’0” | FEM | L | dist. shaft | BOV II |
| BP/3/32688 | J62 | 17’10” - 18’10” | HUM | R | dist. | BOV II |
| BP/3/34260 | K62 | 19’10” - 20’10” | HUM | R | dist. | BOV II |
| BP/3/33706 | K63 | | HUM | R | dist. | BOV II |
| BP/3/16102 | L63 | 10’6” - 11’6” | HUM | R | dist. | BOV II |
| S94-14733 | L63 | 12’6” - 13’6” | HUM | R | dist. | BOV II |
| BP/3/18195 | M62 | 17’11” - 18’11” | HUM | R | dist. | BOV II |
| BP/3/18197 | M62 | 17’11” - 18’11” | HUM | L | dist. | BOV II |
| S94-7519 | M63 | 11’9” - 12’9” | HUM | R | dist. | BOV II |
| S94-7600 | M63 | 12’9” - 13’9” | HUM | R | dist. | BOV II |
| S94-6567 | O60 | 13’3” - 14’3” | HUM | R | dist. | BOV II |
| S94-6847 | P59 | 18’2” - 19’2” | HUM | R | dist. | BOV II |
| BP/3/33826 | L63 | 16’6” - 17’6” | HUM | R | dist. +shaft | BOV II |
| BP/3/34392 | J63 | 18’10” - 19’10” | HUM | | dist. condyle frag | BOV II |
| BP/3/32950 | M60 | 15’2” - 16’2” | HUM | | dist. condyle | BOV II |
| S94-7665 | M62 | 14’11” - 15’11” | HUM | R | dist. condyle frag | BOV II |
| S94-10068 | N60 | 13’9” - 14’9” | HUM | | dist. condyle frag | BOV II |
| S94-9538 | N60 | 20’9” - 21’9” | HUM | L | dist. condyle frag | BOV II |
| S94-1236 | N63 | 12’9” - 13’9” | HUM | L | dist. condyle | BOV II |
| BP/3/17101 | L63 | 13’6” - 14’6” | HUM | R | shaft frag | BOV II |
| S94-10143 | N64 | 12’8” - 13’8” | HUM | L | dist. frag | BOV II |
| BP/3/34582 | I62 | 18’10” - 19’10” | HUM | L | dist. + shaft | BOV II |
| BP/3/34581 | I62 | 18’10” - 19’10” | HUM | L | dist.+ shaft frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34362 | J63 | 15’10” - 16’10” | HUM | R | dist. + shaft frag | BOV II |
| BP/3/34427 | K62 | 17’10” - 18’10” | HUM | L | dist. + shaft frag | BOV II |
| BP/3/33441 | M61 | 17’8” - 18’8” | HUM | L | dist. lat. condyle | BOV II |
| BP/3/32439 | L62 | 18’5” - 19’5” | MTP | | dist. | BOV II |
| BP/3/33703 | K63 | | MTC | | dist. | BOV II |
| BP/3/32900 | M61 | 14’8” - 15’8” | MTC | | dist. | BOV II |
| BP/3/32908 | M61 | 14’8” - 15’8” | MTC | | dist. | BOV II |
| BP/3/33015 | M61 | 15’8” - 16’8” | MTC | | | BOV II |
| S94-14821 | M61 | 16’8” - 17’8” | MTC | | dist. | BOV II |
| S94-14825 | M61 | 16’8” - 17’8” | MTC | | dist. | BOV II |
| S94-14829 | M61 | 16’8” - 17’8” | MTC | | dist. | BOV II |
| S94-7551 | M63 | 11’9” - 12’9” | MTC | | dist. | BOV II |
| S94-8393 | M63 | 13’9” - 14’9” | MTC | | dist. | BOV II |
| BP/3/33226 | N60 | 21’9” - 22’9” | MTC | | dist. | BOV II |
| S94-8042 | N63 | 13’7” - 14’7” | MTC | | dist. | BOV II |
| BP/3/32441 | L62 | 18’5” - 19’5” | MTC | | dist. | BOV II |
| BP/3/32419 | J62 | 19’10” - 20’10” | MTC | | dist. | BOV II |
| S94-7571 | M63 | 11’9” - 12’9” | MTC | | dist.shaft frag | BOV II |
| BP/3/34513 | K62 | 18’10” - 19’10” | MTC | | dist + shaft frag | BOV II |
| BP/3/32644 | L62 | 15’5” - 16’5” | MTP | | dist. | BOV II |
| S94-14828 | M61 | 16’8” - 17’8” | MTP | | dist | BOV II |
| BP/3/33238 | N60 | 20’9” - 21’9” | MTP | | dist. | BOV II |
| BP/3/33240 | N60 | 20’9” - 21’9” | MTP | | dist. | BOV II |
| BP/3/33297 | P59 | 14’1” - 15’1” | MTP | | dist. | BOV II |
| S94-6722 | P59 | 16’2” - 17’2” | MTP | | dist. | BOV II |
| BP/3/33775 | K63 | | MTP | | dist. | BOV II |
| BP/3/32602 | M63 | 15’9” - 16’9” | MTP | | dist. shaft frag | BOV II |
| BP/3/34172 | L63 | 15’6” - 16’6” | MTP | | dist. | BOV II |
| BP/3/33882 | K62 | 15’10” - 16’10” | MTP | | dist. | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33984 | M61 | 11'3" - 12'3" | MTT | R | dist. | BOV II |
| BP/3/32899 | M61 | 14'8" - 15'8" | MTT | | dist. | BOV II |
| S94-14820 | M61 | 16'8" - 17'8" | MTT | | dist. | BOV II |
| S94-7552 | M63 | 11'9" - 12'9" | MTT | | dist. | BOV II |
| BP/3/33072 | N59 | 21'0" - 22'0" | MTT | | dist. | BOV II |
| S94-6872 | P59 | 15'2" - 16'2" | MTT | | dist. | BOV II |
| S94-6609 | P59 | 21'2" - 22'2" | MTT | | dist. | BOV II |
| S94-6571 | O60 | 12'3" - 13'3" | MTT | | dist. | BOV II |
| BP/3/34377 | J62 | 17'10" - 18'10" | RAD | R | dist. | BOV II |
| BP/3/34412 | J63 | 13'10" - 14'10" | RAD | L | dist. | BOV II |
| S94-14831 | M61 | 16'8" - 17'8" | RAD | R | dist. | BOV II |
| S94-8396 | M63 | 13'9" - 14'9" | RAD | L | dist. | BOV II |
| S94-6873 | P59 | 15'2" - 16'2" | RAD | R | dist. | BOV II |
| S94-8388 | M63 | 13'9" - 14'9" | RAD | R | dist. | BOV II |
| S94-10043 | N60 | 12'9" - 13'9" | RAD | R | dist. | BOV II |
| BP/3/34133 | K63 | | RAD | R | dist. | BOV II |
| BP/3/18196 | M62 | 17'11" - 18'11" | RAD | R | dist. shaft | BOV II |
| BP/3/33218 | J62 | 16'10" - 17'10" | TIB | L | dist. | BOV II |
| BP/3/33753 | K63 | | TIB | R | dist. | BOV II |
| BP/3/33001 | L62 | 13'5" - 14'5" | TIB | | dist. | BOV II |
| BP/3/32884 | M61 | 14'8" - 15'8" | TIB | L | dist. | BOV II |
| BP/3/33016 | M61 | 15'8" - 16'8" | TIB | L | dist. | BOV II |
| S94-14989 | M64 | 11'4" - 12'4" | TIB | L | dist. | BOV II |
| BP/3/33081 | O61 | 18'8" - 19'1" | TIB | R | dist. | BOV II |
| BP/3/32844 | N59 | 18'0" - 19'0" | TIB | L | dist. | BOV II |
| S94-1238 | N63 | 12'9" - 13'9" | TIB | R | dist. | BOV II |
| BP/3/33734 | K63 | | TIB | R | dist. | BOV II |
| BP/3/34393 | J63 | 18'10" - 19'10" | TIB | L | dist. | BOV II |
| BP/3/32980 | L62 | 13'5" - 14'5" | TIB | L | dist. | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32981 | L62 | 13’5” - 14’5” | TIB | L | dist. | BOV II |
| BP/3/32982 | L62 | 13’5” - 14’5” | TIB | R | dist. | BOV II |
| BP/3/32365 | J63 | 19’10” - 20’10” | ULNA | | dist. | BOV II |
| BP/3/32749 | N59 | 21’0” - 22’0” | DISTEMA | | Frag | BOV II |
| BP/3/34102 | K63 | | DP | | | BOV II |
| BP/3/34193 | L63 | 15’6” - 16’6” | DP | | | BOV II |
| BP/3/33356 | J62 | 16’10” - 17’10” | DP | | Frag | BOV II |
| BP/3/34629 | I62 | 18’10” - 19’10” | DP | | | BOV II |
| BP/3/34564 | J63 | 18’10” - 19’10” | DP1 | | | BOV II |
| BP/3/33958 | L62 | 16’5” - 17’5” | DP1 | | | BOV II |
| BP/3/34656 | J62 | 20’10” - 21’10” | DP2 | R | | BOV II |
| BP/3/33959 | L62 | 16’5” - 17’5” | DP2 | | | BOV II |
| BP/3/34221 | L63 | 15’6” - 16’6” | DP2 | | | BOV II |
| BP/3/34195 | L63 | 15’6” - 16’6” | DP2 | R | | BOV II |
| BP/3/34032 | M61 | 11’3” - 12’3” | DP2 | R | | BOV II |
| BP/3/34628 | I62 | 18’10” - 19’10” | DP3 | R | | BOV II |
| BP/3/32708 | J62 | 17’10” - 18’10” | DP3 | | Frag | BOV II |
| BP/3/32392 | J63 | 20’10” - 21’10” | DP3 | L | | BOV II |
| BP/3/33960 | L62 | 16’5” - 17’5” | DP3 | | | BOV II |
| BP/3/34222 | L63 | 15’6” - 16’6” | DP3 | | | BOV II |
| BP/3/32393 | J63 | 20’10” - 21’10” | DP4 | L | | BOV II |
| BP/3/32402 | K63 | 17’0” - 18’0” | DP4 | R | | BOV II |
| S94-8365 | M63 | 13’9” - 14’9” | DP4 | | | BOV II |
| BP/3/18133 | M62 | 16’11” - 17’11” | DP4 | R | Frag | BOV II |
| BP/3/33516 | L62 | 14’5” - 15’5” | ELBOW JOINT | | frag | BOV II |
| BP/3/33517 | L62 | 14’5” - 15’5” | ELBOW JOINT | L | Frag | BOV II |
| BP/3/34299 | K62 | 19’10” - 20’10” | EXT & MED CUN | R | | BOV II |
| BP/3/34459 | K62 | 20’10” - 21’10” | EXT & MED CUN | R | | BOV II |
| BP/3/32528 | M61 | 19’8” - 20’9” | EXT. CUN | R | | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32467 | H62 | 21'10" - 22'10" | FEM | L | shaft frag | BOV II |
| BP/3/33539 | H62 | 21'10" - 22'10" | FEM | L | shaft frag | BOV II |
| BP/3/33564 | H62 | 21'10" - 22'10" | FEM | L | shaft frag | BOV II |
| BP/3/32466 | H62 | 21'10" - 22'10" | FEM | L | shaft frag | BOV II |
| BP/3/34579 | I62 | 18'10" - 19'10" | FEM | R | shaft frag | BOV II |
| BP/3/34592 | I62 | 18'10" - 19'10" | FEM | L | shaft frag | BOV II |
| BP/3/34617 | I62 | 18'10" - 19'10" | FEM | R | head | BOV II |
| BP/3/34580 | I62 | 18'10" - 19'10" | FEM | R | shaft frag | BOV II |
| BP/3/34605 | I62 | 18'10" - 19'10" | FEM | R | shaft frag | BOV II |
| BP/3/34606 | I62 | 18'10" - 19'10" | FEM |  | shaft frag | BOV II |
| BP/3/34571 | I63 | 15'10" - 16'10" | FEM | L | shaft frag | BOV II |
| BP/3/34397 | J62 | 14'10" - 15'10" | FEM | L | shaft frag | BOV II |
| BP/3/34320 | J62 | 15'10" - 16'10" | FEM | R | shaft frag | BOV II |
| BP/3/33330 | J62 | 16'10" - 17'10" | FEM | L | shaft frag | BOV II |
| BP/3/33332 | J62 | 16'10" - 17'10" | FEM | R | prox. shaft frag | BOV II |
| BP/3/32697 | J62 | 17'10" - 18'10" | FEM | R | prox. shaft frag | BOV II |
| BP/3/34642 | J62 | 20'10" - 21'10" | FEM | R | head | BOV II |
| BP/3/34424 | J62 | 20'10" - 21'10" | FEM | R | prox. shaft frag | BOV II |
| BP/3/34281 | J63 | 14'10" - 15'10" | FEM | L | shaft frag | BOV II |
| BP/3/34361 | J63 | 15'10" - 16'10" | FEM | L | shaft frag | BOV II |
| BP/3/34332 | J63 | 15'10" - 16'10" | FEM | L | shaft frag | BOV II |
| BP/3/34451 | J63 | 17'10" - 18'10" | FEM | R | shaft frag | BOV II |
| BP/3/32390 | J63 | 20'10" - 21'10" | FEM | L | shaft frag | BOV II |
| BP/3/33910 | K62 | 15'10" - 16'10" | FEM | L | shaft frag | BOV II |
| BP/3/33909 | K62 | 15'10" - 16'10" | FEM | R | shaft frag | BOV II |
| BP/3/33918 | K62 | 15'10" - 16'10" | FEM | R | prox. shaft frag | BOV II |
| BP/3/34532 | K62 | 18'10" - 19'10" | FEM |  | dist. condyle frag | BOV II |
| BP/3/34527 | K62 | 18'10" - 19'10" | FEM | R | shaft frag | BOV II |
| BP/3/34267 | K62 | 19'10" - 20'10" | FEM | L | shaft frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34460 | K62 | 20'10" - 21'10" | FEM | L | shaft frag | BOV II |
| BP/3/33598 | K63 | 15'10" - 16'10" | FEM | R | shaft frag | BOV II |
| BP/3/32308 | K63 | 15'10" - 16'10" | FEM | R | shaft frag | BOV II |
| BP/3/32309 | K63 | 15'10" - 16'10" | FEM | R | shaft frag | BOV II |
| BP/3/33720 | K63 | | FEM | L | shaft frag | BOV II |
| BP/3/33772 | K63 | | FEM | L | shaft frag | BOV II |
| BP/3/34139 | K63 | | FEM | R | shaft frag | BOV II |
| BP/3/33712 | K63 | | FEM | R | shaft frag | BOV II |
| BP/3/33713 | K63 | | FEM | R | shaft frag | BOV II |
| BP/3/33714 | K63 | | FEM | R | shaft frag | BOV II |
| BP/3/33743 | K63 | | FEM | R | shaft frag | BOV II |
| BP/3/33773 | K63 | | FEM | | shaft frag | BOV II |
| BP/3/34136 | K63 | | FEM | R | shaft frag | BOV II |
| BP/3/34137 | K63 | | FEM | R | shaft frag | BOV II |
| BP/3/34144 | K63 | | FEM | | shaft frag | BOV II |
| BP/3/33705 | K63 | | FEM | R | prox. shaft frag | BOV II |
| BP/3/33741 | K63 | | FEM | R | prox. shaft frag | BOV II |
| BP/3/33742 | K63 | | FEM | L | prox. shaft frag | BOV II |
| BP/3/33535 | L61 | 13'5" - 14'5" | FEM | R | shaft frag | BOV II |
| BP/3/33536 | L61 | 13'5" - 14'5" | FEM | R | shaft frag | BOV II |
| BP/3/33587 | L62 | 13'5" - 14'5" | FEM | R | shaft frag | BOV II |
| BP/3/33588 | L62 | 13'5" - 14'5" | FEM | L | shaft frag | BOV II |
| BP/3/33515 | L62 | 14'5" - 15'5" | FEM | R | shaft frag | BOV II |
| BP/3/33514 | L62 | 14'5" - 15'5" | FEM | | shaft frag | BOV II |
| BP/3/33521 | L62 | 14'5" - 15'5" | FEM | L | shaft frag | BOV II |
| BP/3/33392 | L62 | 15'5" - 16'5" | FEM | R | prox. shaft frag | BOV II |
| BP/3/33427 | L62 | 17'5" - 18'5" | FEM | R | shaft frag | BOV II |
| BP/3/33670 | L63 | 10'6" - 11'6" | FEM | R | shaft frag | BOV II |
| BP/3/34152 | L63 | 12'6" - 13'6" | FEM | R | shaft frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/33687 | L63 | 12’6” - 13’6” | FEM | L | shaft frag | BOV II |
| BP/3/33699 | L63 | 12’6” - 13’6” | FEM | | shaft frag | BOV II |
| S94-14967 | L63 | 12’6” - 13’6” | FEM | | shaft frag | BOV II |
| BP/3/33684 | L63 | 12’6” - 13’6” | FEM | R | prox. shaft frag | BOV II |
| BP/3/18019 | L63 | 13’6” - 14’6” | FEM | R | shaft frag | BOV II |
| BP/3/34245 | L63 | 15’6” - 16’6” | FEM | R | shaft frag | BOV II |
| BP/3/33833 | L63 | 16’6” - 17’6” | FEM | L | head frag | BOV II |
| BP/3/33827 | L63 | 16’6” - 17’6” | FEM | L | shaft frag | BOV II |
| BP/3/16736 | L63 | 7’6” - 8’6” | FEM | L | shaft frag | BOV II |
| S94-14876 | L63 | MIXED | FEM | | shaft frag | BOV II |
| BP/3/33676 | L63 | MIXED | FEM | R | shaft frag | BOV II |
| BP/3/34051 | M60 | 10’5” - 11’5” | FEM | R | shaft frag | BOV II |
| BP/3/34055 | M60 | 10’5” - 11’5” | FEM | | shaft frag | BOV II |
| BP/3/34060 | M60 | 12’5” - 13’5” | FEM | L | distal condyle | BOV II |
| BP/3/34065 | M60 | 12’5” - 13’5” | FEM | | shaft frag | BOV II |
| BP/3/34059 | M60 | 12’5” - 13’5” | FEM | R | prox. shaft frag | BOV II |
| BP/3/33306 | M60 | 18’2” - 19’2” | FEM | L | shaft frag | BOV II |
| BP/3/33982 | M61 | 11’3” - 12’3” | FEM | L | shaft frag | BOV II |
| S94-7690 | M61 | 12’8” - 13’8” | FEM | L | shaft frag | BOV II |
| S94-7688 | M61 | 12’8” - 13’8” | FEM | L | shaft frag | BOV II |
| BP/3/32935 | M61 | 14’8” - 15’8” | FEM | L | shaft frag | BOV II |
| BP/3/32940 | M61 | 14’8” - 15’8” | FEM | R | shaft frag | BOV II |
| BP/3/33014 | M61 | 15’8” - 16’8” | FEM | | shaft frag | BOV II |
| BP/3/33020 | M61 | 15’8” - 16’8” | FEM | L | shaft frag | BOV II |
| BP/3/33022 | M61 | 15’8” - 16’8” | FEM | | shaft frag | BOV II |
| BP/3/33058 | M61 | 15’8” - 16’8” | FEM | R | shaft frag | BOV II |
| S94-14836 | M61 | 16’8” - 17’8” | FEM | R | shaft frag | BOV II |
| BP/3/32551 | M61 | 18’8” - 19’8” | FEM | L | distal epiph. | BOV II |
| BP/3/32525 | M61 | 19’8” - 20’9” | FEM | L | shaft frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32542 | M61 | 19’8” - 20’9” | FEM | L | shaft frag | BOV II |
| S94-7747 | M62 | 12’11” - 13’11” | FEM | R | shaft frag | BOV II |
| S94-7649 | M62 | 15’11” - 16’11” | FEM | L | shaft frag | BOV II |
| S94-7653 | M62 | 15’11” - 16’11” | FEM | L | shaft frag | BOV II |
| S94-7655 | M62 | 15’11” - 16’11” | FEM | L | shaft frag | BOV II |
| S94-7647 | M62 | 15’11” - 16’11” | FEM | | prox. shaft frag | BOV II |
| BP/3/33638 | M62 | 16’11” - 17’11” | FEM | R | shaft frag | BOV II |
| BP/3/33634 | M62 | 17’11” - 18’11” | FEM | L | shaft frag | BOV II |
| BP/3/33635 | M62 | 17’11” - 18’11” | FEM | R | shaft frag | BOV II |
| BP/3/18200 | M62 | 17’11” - 18’11” | FEM | L | shaft frag | BOV II |
| S94-7520 | M63 | 11’9” - 12’9” | FEM | R | shaft frag | BOV II |
| S94-7565 | M63 | 11’9” - 12’9” | FEM | L | shaft frag | BOV II |
| S94-7574 | M63 | 11’9” - 12’9” | FEM | L | shaft frag | BOV II |
| S94-7586 | M63 | 11’9” - 12’9” | FEM | L | shaft frag | BOV II |
| S94-7588 | M63 | 11’9” - 12’9” | FEM | | shaft frag | BOV II |
| S94-7592 | M63 | 11’9” - 12’9” | FEM | L | shaft frag | BOV II |
| BP/3/32620 | M63 | 13’9” - 14’9” | FEM | L | shaft frag | BOV II |
| S94-8404 | M63 | 13’9” - 14’9” | FEM | | shaft frag | BOV II |
| BP/3/32575 | M63 | 14’9” - 15’9” | FEM | | shaft frag | BOV II |
| BP/3/32505 | M63 | 15’9” - 16’9” | FEM | L | shaft frag | BOV II |
| BP/3/32506 | M63 | 15’9” - 16’9” | FEM | L | head | BOV II |
| BP/3/32513 | M63 | 15’9” - 16’9” | FEM | | shaft frag | BOV II |
| S94-7705 | M64 | 8’8” - 9’8” | FEM | R | prox. shaft frag | BOV II |
| BP/3/32851 | N59 | 18’0” - 19’0” | FEM | L | shaft frag | BOV II |
| BP/3/33480 | N59 | 22’0” - 23’0” | FEM | R | shaft frag | BOV II |
| S94-10063 | N60 | 13’9” - 14’9” | FEM | R | shaft frag | BOV II |
| S94-9531 | N60 | 20’9” - 21’9” | FEM | R | shaft frag | BOV II |
| S94-9547 | N60 | 20’9” - 21’9” | FEM | | shaft frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-9539 | N60 | 20’9” - 21’9” | FEM | R | prox. shaft frag | BOV II |
| S94-1244 | N63 | 12’9” - 13’9” | FEM | L | head | BOV II |
| S94-1245 | N63 | 12’9” - 13’9” | FEM | R | shaft frag | BOV II |
| BP/3/16803 | O63 | 22’6” - 23’6” | FEM | R | shaft frag | BOV II |
| BP/3/32626 | O59 | 12’6” - 13’6” | FEM | L | shaft frag | BOV II |
| S94-6575 | O60 | 12’3” - 13’3” | FEM | L | shaft frag | BOV II |
| BP/3/33475 | O60 | 13’3” - 14’3” | FEM | R | shaft frag | BOV II |
| S94-6593 | O60 | 14’3” - 15’3” | FEM | R | shaft frag | BOV II |
| S94-6594 | O60 | 14’3” - 15’3” | FEM | R | prox. shaft frag | BOV II |
| BP/3/16857 | O60 | 17’0” - 18’0” | FEM | R | shaft frag | BOV II |
| S94-6467 | O61 | 14’8” - 15’8” | FEM | L | shaft frag | BOV II |
| S94-6488 | O61 | 15’8” - 16’8” | FEM | | shaft frag | BOV II |
| BP/3/16764 | O61 | 17’8” - 18’8” | FEM | R | shaft frag | BOV II |
| BP/3/16765 | O61 | 17’8” - 18’8” | FEM | R | shaft frag | BOV II |
| S94-6599 | O62 | 14’9” - 15’9” | FEM | | shaft frag | BOV II |
| BP/3/33101 | O62 | 14’9” - 15’9” | FEM | L | prox. shaft frag | BOV II |
| S94-6461 | O63 | 10’0” - 11’0” | FEM | R | shaft frag | BOV II |
| S94-6463 | O63 | 10’0” - 11’0” | FEM | R | shaft frag | BOV II |
| S94-6442 | O63 | 13’0” - 14’0” | FEM | L | prox. shaft frag | BOV II |
| BP/3/32501 | O63 | 13’6” - 14’6” | FEM | | shaft frag | BOV II |
| BP/3/32502 | O63 | 13’6” - 14’6” | FEM | | shaft frag | BOV II |
| S94-6721 | P58 | 25’10” - 26’10” | FEM | R | head | BOV II |
| S94-6839 | P58 | 27’10” - 28’10” | FEM | R | shaft frag | BOV II |
| S94-6840 | P58 | 27’10” - 28’10” | FEM | R | shaft frag | BOV II |
| S94-2035 | P60 | 14’4” - 15’4” | FEM | R | shaft frag | BOV II |
| S94-6825 | P60 | 16’6” - 17’6” | FEM | | dist. condyle frag | BOV II |
| S94-6618 | P60 | 17’6” - 18’6” | FEM | R | shaft frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/19161 | P61 | 8'6" - 9'6" | FEM | L | shaft frag | BOV II |
| BP/3/19164 | P61 | 8'6" - 9'6" | FEM | | shaft frag | BOV II |
| BP/3/19275 | Q58 | 13'6" - 14'6" | FEM | L | shaft frag | BOV II |
| BP/3/19153 | Q58 | 14'6" - 15'3" | FEM | R | shaft frag | BOV II |
| S94-7260 | Q58 | 19'3" - 20'3" | FEM | L | dist. | BOV II |
| S94-7256 | Q58 | 19'3" - 20'3" | FEM | L | shaft frag | BOV II |
| S94-13065 | Q58 | 23'3' '- 24'3" | FEM | | shaft frag | BOV II |
| S94-9546 | N60 | 20'9" - 21'9" | FEM | | head frag | BOV II |
| BP/3/34324 | J62 | 15'10" - 16'10" | FEM | R | shaft | BOV II |
| BP/3/34159 | K63 | | FEM | R | shaft | BOV II |
| BP/3/34054 | M60 | 10'5" - 11'5" | FRONT | R | Frag | BOV II |
| S94-6675 | P59 | 17'2" - 18'2" | FEM | L | frag | BOV II |
| BP/3/32444 | H62 | 21'10" - 22'10" | HORN | | Frag | BOV II |
| BP/3/33315 | J62 | 16'10" - 17'10" | HORN | | Frag | BOV II |
| BP/3/34368 | J63 | 15'10" - 16'10" | HORN | | Frag | BOV II |
| BP/3/34069 | K63 | | HORN | | Frag | BOV II |
| BP/3/33444 | M61 | 17'8" - 18'8" | HORN | | Frag | BOV II |
| BP/3/33639 | M62 | 16'11" - 17'11" | HORN | | Frag | BOV II |
| BP/3/32863 | N59 | 16'0" - 17'0" | HORN | | Frag | BOV II |
| BP/3/32833 | N59 | 18'0" - 19'0" | HORN | | Frag | BOV II |
| BP/3/33479 | N59 | 22'0" - 23'0" | HORN | | Frag | BOV II |
| BP/3/32877 | N60 | 17'9" - 18'9" | HORN | | Frag | BOV II |
| S94-1194 | N63 | 13'10" - 14'10" | HORN | | Frag | BOV II |
| S94-1698 | N61 | 11'10" - 12'10" | HORN | | Frag | BOV II |
| S94-1724 | N61 | 12'10" - 13'10" | HORN | | Frag | BOV II |
| S94-6451 | O63 | 12'6" - 13'10" | HORN | | Frag | BOV II |
| BP/3/33403 | P58 | 13'10" - 14'10" | HORN | | Frag | BOV II |
| S94-11241 | P59 | 16'2" - 17'2" | HORN | | Frag | BOV II |
| S94-6796 | P59 | 18'4" - 19'4" | HORN | | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-11248 | P59 | 25'2" - 26'2" | HORN | | Frag | BOV II |
| BP/3/33069 | P61 | 16'10" - 17'10" | HORN | | Frag | BOV II |
| S94-10095 | P64 | 10'8" - 11'8" | HORN | | Frag | BOV II |
| BP/3/32458 | H62 | 21'10" - 22'10" | HUM | L | dist. shaft frag | BOV II |
| BP/3/33548 | H62 | 21'10" - 22'10" | HUM | R | dist. shaft frag | BOV II |
| BP/3/33557 | H62 | 21'10" - 22'10" | HUM | R | dist. shaft frag | BOV II |
| BP/3/34398 | J62 | 14'10" - 15'10" | HUM | R | prox. shaft frag | BOV II |
| BP/3/33207 | J62 | 16'10" - 17'10" | HUM | R | dist. shaft frag | BOV II |
| BP/3/33208 | J62 | 16'10" - 17'10" | HUM | R | dist. shaft frag | BOV II |
| BP/3/32429 | J62 | 19'10" - 20'10" | HUM | L | shaft frag | BOV II |
| BP/3/34331 | J63 | 15'10" - 16'10" | HUM | L | shaft frag | BOV II |
| BP/3/33880 | K62 | 15'10" - 16'10" | HUM | L | shaft frag | BOV II |
| BP/3/34526 | K62 | 18'10" - 19'10" | HUM | R | shaft frag | BOV II |
| BP/3/32331 | K63 | 15'10" - 16'10" | HUM | R | shaft frag | BOV II |
| BP/3/32316 | K63 | 15'10" - 16'10" | HUM | R | prox. shaft frag | BOV II |
| BP/3/33717 | K63 | | HUM | R | dist. shaft frag | BOV II |
| BP/3/33737 | K63 | | HUM | L | dist. shaft frag | BOV II |
| BP/3/34135 | K63 | | HUM | L | shaft frag | BOV II |
| BP/3/33723 | K63 | | HUM | R | prox. shaft frag | BOV II |
| BP/3/33494 | L62 | 13'5" - 14'5" | HUM | R | dist. shaft frag | BOV II |
| BP/3/33512 | L62 | 14'5" - 15'5" | HUM | L | shaft frag | BOV II |
| BP/3/32639 | L62 | 15'5" - 16'5" | HUM | R | dist. shaft frag | BOV II |
| BP/3/18936 | L63 | 10'6" - 11'6" | HUM | R | shaft frag | BOV II |
| BP/3/17143 | L63 | 12'6" - 13'6" | HUM | R | dist. shaft frag | BOV II |
| BP/3/33690 | L63 | 12'6" - 13'6" | HUM | R | dist. shaft frag | BOV II |
| S94-15020 | L63 | 12'6" - 13'6" | HUM | L | dist. shaft frag | BOV II |
| BP/3/34039 | M60 | 10'5" - 11'5" | HUM | L | shaft frag | BOV II |
| BP/3/33104 | M60 | 14'2" - 15'2" | HUM | | shaft frag | BOV II |
| BP/3/32596 | M60 | 17'2" - 18'2" | HUM | R | dist. shaft frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32897 | M61 | 14’8” - 15’8” | HUM | R | dist. shaft frag | BOV II |
| BP/3/32928 | M61 | 14’8” - 15’8” | HUM | L | dist. shaft frag | BOV II |
| BP/3/32898 | M61 | 14’8” - 15’8” | HUM | R | shaft frag | BOV II |
| BP/3/32936 | M61 | 14’8” - 15’8” | HUM | L | shaft frag | BOV II |
| BP/3/32552 | M61 | 18’8” - 19’8” | HUM | R | dist. shaft frag | BOV II |
| BP/3/33473 | M61 | 19’8”-20’8” | HUM | R | prox. shaft frag | BOV II |
| S94-7681 | M62 | 13’11” - 14’11” | HUM | L | shaft frag | BOV II |
| BP/3/33641 | M62 | 16’11” - 17’11” | HUM | R | dist. shaft frag | BOV II |
| BP/3/33642 | M62 | 16’11” - 17’11” | HUM | R | dist. shaft frag | BOV II |
| BP/3/33643 | M62 | 16’11” - 17’11” | HUM | L | dist. shaft frag | BOV II |
| BP/3/33644 | M62 | 16’11” - 17’11” | HUM | | dist. shaft frag | BOV II |
| BP/3/33662 | M62 | 16’11” - 17’11” | HUM | L | dist. shaft frag | BOV II |
| BP/3/33666 | M62 | 16’11” - 17’11” | HUM | L | dist. shaft frag | BOV II |
| S94-7741 | M62 | 9’11” - 10’11” | HUM | L | dist. shaft frag | BOV II |
| S94-8394 | M63 | 13’9” - 14’9” | HUM | R | dist. shaft frag | BOV II |
| BP/3/32603 | M63 | 13’9” - 14’9” | HUM | L | prox. shaft frag | BOV II |
| S94-8395 | M63 | 13’9” - 14’9” | HUM | R | prox. shaft frag | BOV II |
| BP/3/32518 | M63 | 15’9” - 16’9” | HUM | | shaft frag | BOV II |
| BP/3/33615 | M64 | 11’4” - 12’4” | HUM | L | dist. shaft frag | BOV II |
| BP/3/33626 | M64 | 11’4” - 12’4” | HUM | L | shaft frag | BOV II |
| BP/3/33617 | M64 | 11’4” - 12’4” | HUM | L | prox. shaft frag | BOV II |
| BP/3/33625 | M64 | 11’4” - 12’4” | HUM | R | prox. shaft frag | BOV II |
| BP/3/33629 | M64 | 11’4” - 12’4” | HUM | L | prox. shaft frag | BOV II |
| BP/3/32796 | N59 | 19’0” - 20’0” | HUM | L | dist. shaft frag | BOV II |
| BP/3/32794 | N59 | 20’0” - 21’0” | HUM | L | dist. shaft frag | BOV II |
| BP/3/32736 | N59 | 21’0” - 22’0” | HUM | R | prox. shaft frag | BOV II |
| S94-10061 | N60 | 13’9” - 14’9” | HUM | R | dist. shaft frag | BOV II |
| BP/3/32875 | N60 | 17’9” - 18’9” | HUM | L | shaft frag | BOV II |
| S94-1231 | N63 | 12’9” - 13’9” | HUM | R | dist. shaft frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-8049 | N63 | 13’7” - 14’7” | HUM | R | dist. shaft frag | BOV II |
| S94-10145 | N64 | 12’8” - 13’8” | HUM | R | dist. shaft frag | BOV II |
| BP/3/16862 | O60 | 17’0” - 18’0” | HUM | R | dist. shaft frag | BOV II |
| BP/3/16895 | O60 | 20’0” - 21’0” | HUM | L | dist. shaft frag | BOV II |
| BP/3/16896 | O60 | 20’0” - 21’0” | HUM | L | prox. shaft frag | BOV II |
| BP/16797 | O60 | 22’0” - 23’0” | HUM | R | dist. shaft frag | BOV II |
| S94-6466 | O61 | 14’8” - 15’8” | HUM | L | shaft frag | BOV II |
| S94-6581 | O62 | 15’9” - 16’9” | HUM | L | dist. shaft frag | BOV II |
| BP/3/32497 | O63 | 13’6” - 14’6” | HUM | L | dist. shaft frag | BOV II |
| BP/3/33385 | O63 | 13’6” - 14’6” | HUM | R | dist. shaft frag | BOV II |
| S94-6861 | P58 | 23’10” - 24’10” | HUM | | dist. shaft frag | BOV II |
| S94-6720 | P58 | 25’10” - 26’10” | HUM | R | dist. shaft frag | BOV II |
| BP/3/34670 | P60 | 15’4” - 16’4” | HUM | L | prox. shaft frag | BOV II |
| S94-6634B | P61 | 15’10” - 16’10” | HUM | L | dist. shaft frag | BOV II |
| S94-13404 | Q58 | 15’3” - 16’3” | HUM | R | dist. Frag | BOV II |
| S94-7805 | Q59 | 15’0” - 16’0” | HUM | L | shaft frag | BOV II |
| BP/3/32638 | L62 | 15’5” - 16’5” | HUM | R | | BOV II |
| S94-7666 | M62 | 14’11” - 15’11” | HUM | L | head | BOV II |
| BP/3/32748 | N59 | 21’0” - 22’0” | HUM | | head | BOV II |
| S94-10045 | N60 | 12’9” - 13’9” | HUM | L | head | BOV II |
| S94-6489 | O61 | 15’8” - 16’8” | HUM | | head frag | BOV II |
| S94-10108 | P64 | 10’8” - 11’8” | HUM | R | head | BOV II |
| BP/3/33083 | N59 | 21’0” - 22’0” | HUM | L | shaft | BOV II |
| BP/3/32670 | J62 | 16’10” - 17’10” | HYO | | Frag | BOV II |
| BP/3/34646 | J62 | 20’10” - 21’10” | HYO | | Frag | BOV II |
| S94-1725 | M63 | 10’10” - 11’10” | I | L | Frag | BOV II |
| BP/3/33235 | N60 | 21’9” - 22’9” | I | | whole | BOV II |
| S94-8047 | N63 | 13’7” - 14’7” | I | R | Frag | BOV II |
| BP/3/34569 | I63 | 15’10” - 16’10” | I1 | L | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32679 | J62 | 16’10” - 17’10” | I1 | R | | BOV II |
| BP/3/32680 | J62 | 16’10” - 17’10” | I1 | R | | BOV II |
| BP/3/34653 | J62 | 20’10” - 21’10” | I1 | L | | BOV II |
| BP/3/34482 | K62 | 17’10” - 18’10” | I1 | R | | BOV II |
| BP/3/18131 | M62 | 16’11” - 17’11” | I1 | R | | BOV II |
| BP/3/18217 | M62 | 17’11” - 18’11” | I1 | R | | BOV II |
| S94-1690 | N62 | 10’10” - 11’10” | I1 | L | | BOV II |
| BP/3/34627 | I62 | 18’10” - 19’10” | I2 | R | | BOV II |
| BP/3/34408 | J63 | 13’10” - 14’10” | I2 | L | | BOV II |
| BP/3/34499 | J63 | 16’10” - 17’10” | I2 | R | | BOV II |
| BP/3/34539 | K62 | 18’10” - 19’10” | I2 | L | | BOV II |
| BP/3/34540 | K62 | 18’10” - 19’10” | I2 | R | | BOV II |
| BP/3/32349 | K63 | 15’10” - 16’10” | I2 | L | | BOV II |
| BP/3/34185 | L63 | 15’6” - 16’6” | I2 | L | | BOV II |
| BP/3/18135 | M62 | 16’11” - 17’11” | I2 | L | | BOV II |
| S94-6614 | P61 | 16’10” - 17’10” | I2 | R | | BOV II |
| BP/3/34626 | I62 | 18’10” - 19’10” | I3 | R | | BOV II |
| BP/3/34391 | J62 | 14’10” - 15’10” | I3 | R | | BOV II |
| BP/3/34407 | J63 | 13’10” - 14’10” | I3 | L | | BOV II |
| BP/3/34092 | K63 | | I3 | R | whole | BOV II |
| BP/3/17915 | M62 | 17’11” - 18’11” | I3 | L | | BOV II |
| S94-8376 | M63 | 13’9” - 14’9” | I3 | L | | BOV II |
| BP/3/32701 | J62 | 17’10” - 18’10” | ILI | R | neck | BOV II |
| BP/3/32703 | J62 | 17’10” - 18’10” | ILI | L | neck | BOV II |
| BP/3/34643 | J62 | 20’10” - 21’10” | ILI | L | Frag | BOV II |
| BP/3/33103 | M60 | 14’2” - 15’2” | ILI | | blade frag | BOV II |
| BP/3/32933 | M61 | 14’8” - 15’8” | ILI | L | Frag | BOV II |
| S94-14838 | M61 | 16’8” - 17’8” | ILI | R | neck frag | BOV II |
| S94-7731 | M62 | 10’11” - 11’11” | ILI | | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-7730 | M62 | 10’11” - 11’11” | ILI | L | neck | BOV II |
| BP/3/18122 | M62 | 16’11” - 17’11” | ILI | L | neck frag | BOV II |
| S94-7712 | M64 | 8’8” - 9’8” | ILI | L | blade frag | BOV II |
| S94-9971 | M64 | 9’8” - 10’8” | ILI | L | neck | BOV II |
| BP/3/32872 | N59 | 13’0” - 14’0” | ILI | L | Frag | BOV II |
| BP/3/32829 | N59 | 15’0” - 16’0” | ILI | R | Frag | BOV II |
| BP/3/32820 | N59 | 15’0” - 16’0” | ILI | R | Frag | BOV II |
| BP/3/32823 | N59 | 15’0” - 16’0” | ILI | R | blade frag | BOV II |
| BP/3/32818 | N59 | 15’0” - 16’0” | ILI | R | Frag | BOV II |
| BP/3/32822 | N59 | 15’0” - 16’0” | ILI | R | neck frag | BOV II |
| BP/3/32864 | N59 | 16’0” - 17’0” | ILI | R | blade frag | BOV II |
| SWP-2672 | N60 | 11’9” - 12’9” | ILI | L | Frag | BOV II |
| BP/3/32830 | N61 | 18’11” - 19’11” | ILI | R | Frag | BOV II |
| BP/3/32627 | O59 | 12’6” - 13’6” | ILI | L | neck | BOV II |
| S94-6588 | O60 | 14’3” - 15’3” | ILI | L | neck | BOV II |
| S94-6487 | O61 | 15’8” - 16’8” | ILI | | neck | BOV II |
| BP/3/16804 | O61 | 18’8” - 19’1” | ILI | R | blade frag | BOV II |
| BP/3/33068 | P61 | 16’10” - 17’10” | ILI | | Frag | BOV II |
| BP/3/33066 | P61 | 17’10” - 18’5” | ILI | L | neck frag | BOV II |
| BP/3/34587 | I62 | 18’10” - 19’10” | ISCH | L | Frag | BOV II |
| BP/3/34599 | I62 | 18’10” - 19’10” | ISCH | R | Frag | BOV II |
| BP/3/34366 | J63 | 15’10” - 16’10” | ISCH | L | Frag | BOV II |
| BP/3/33884 | K62 | 15’10” - 16’10” | ISCH | R | Frag | BOV II |
| BP/3/34270 | K62 | 19’10” - 20’10” | ISCH | R | Frag | BOV II |
| BP/3/34227 | L63 | 15’6” - 16’6” | ISCH | R | Frag | BOV II |
| BP/3/34252 | L63 | 15’6” - 16’6” | ISCH | R | Frag | BOV II |
| BP/3/33664 | M62 | 16’11” - 17’11” | ISCH | R | Frag | BOV II |
| BP/3/18126 | M62 | 16’11” - 17’11” | ISCH | R | Frag | BOV II |
| S94-7581 | M63 | 11’9” - 12’9” | ISCH | R | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
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| BP/3/32821 | N59 | 15’0” - 16’0” | ISCH | L | Frag | BOV II |
| S94-1200 | N63 | 13’10” - 14’10” | ISCH | L | Frag | BOV II |
| BP/3/33070 | P61 | 16’10” - 17’10” | ISCH | L | Frag | BOV II |
| S94-6707 | P61 | 17’10” - 18’5” | ISCH | R | Frag | BOV II |
| BP/3/34549 | K62 | 18’10” - 19’10” | LAT MEL | L | | BOV II |
| BP/3/34009 | M61 | 11’3” - 12’3” | LAT MEL | R | | BOV II |
| S94-14799 | M61 | 16’8” - 17’8” | LAT MEL | R | | BOV II |
| BP/3/32800 | N59 | 19’0” - 20’0” | LAT MEL | R | | BOV II |
| BP/3/32733 | N59 | 21’0” - 22’0” | LAT MEL | L | | BOV II |
| S94-6441 | O63 | 15’10” - 16’10” | LAT MEL | R | | BOV II |
| BP/3/34616 | I62 | 18’10” - 19’10” | LUMB | | centrum frag | BOV II |
| BP/3/34573 | I63 | 15’10” - 16’10” | LUMB | | centrum | BOV II |
| BP/3/32433 | J62 | 19’10” - 20’10” | LUMB | | neural arch + spine | BOV II |
| BP/3/34341 | J63 | 15’10” - 16’10” | LUMB | | centrum frag | BOV II |
| BP/3/34545 | K62 | 18’10” - 19’10” | LUMB | | | BOV II |
| BP/3/33057 | L62 | 13’5” - 14’5” | LUMB | | Frag | BOV II |
| BP/3/33956 | L62 | 16’5” - 17’5” | LUMB | | centrum frag | BOV II |
| BP/3/33416 | L62 | 17’5” - 18’5” | LUMB | | Frag | BOV II |
| BP/3/28095 | L63 | 12’6” - 13’6” | LUMB | | centrum frag | BOV II |
| S94-14761 | L63 | 12’6” - 13’6” | LUMB | | centrum frag | BOV II |
| S94-14753 | L63 | 12’6” - 13’6” | LUMB | | neural arch + spine | BOV II |
| BP/3/33939 | L63 | | LUMB | | centrum frag | BOV II |
| BP/3/34052 | M60 | 10’5” - 11’5” | LUMB | | centrum frag | BOV II |
| BP/3/33981 | M61 | 11’3” - 12’3” | LUMB | | centrum frag | BOV II |
| S94-14990 | M64 | 11’4” - 12’4” | LUMB | | centrum | BOV II |
| BP/3/32740 | N59 | 21’0” - 22’0” | LUMB | | | BOV II |
| S94-6452 | O63 | 16’10” - 17’10” | LUMB | | centrum frag | BOV II |
| BP/3/33887 | K62 | 15’10” - 16’10” | LUN | L | | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32841 | N59 | 18’0” - 19’0” | LUN | L | | BOV II |
| BP/3/33246 | N60 | 20’9” - 21’9” | LUN | L | | BOV II |
| S94-9530 | N60 | 21’9” - 22’9” | LUN | L | | BOV II |
| BP/3/34638 | H63 | 22’10” - 23’10” | M1 | R | | BOV II |
| BP/3/34574 | I63 | 15’10” - 16’10” | M1 | L | | BOV II |
| BP/3/34652 | J62 | 20’10” - 21’10” | M1 | L | | BOV II |
| BP/3/18934 | L63 | 10’6” - 11’6” | M1 | R | | BOV II |
| BP/3/17217 | L63 | 13’6” - 14’6” | M1 | L | | BOV II |
| BP/3/17315 | L63 | 13’6” - 14’6” | M1 | R | | BOV II |
| BP/3/17221 | L63 | 13’6” - 14’6” | M1 | L | | BOV II |
| BP/3/34196 | L63 | 15’6” - 16’6” | M1 | L | | BOV II |
| BP/3/34208 | L63 | 15’6” - 16’6” | M1 | | Frag | BOV II |
| BP/3/34212 | L63 | 15’6” - 16’6” | M1 | L | | BOV II |
| BP/3/34206 | L63 | 15’6” - 16’6” | M1 | R | Frag | BOV II |
| BP/3/34207 | L63 | 15’6” - 16’6” | M1 | R | Frag | BOV II |
| BP/3/33999 | M61 | 11’3” - 12’3” | M1 | | | BOV II |
| S94-8045 | N63 | 13’7” - 14’7” | M1 | | | BOV II |
| S94-6865 | P59 | 15’2” - 16’2” | M1 | | Frag | BOV II |
| S94-6612 | P61 | 16’10” - 17’10” | M1 | L | | BOV II |
| BP/3/34225 | L63 | 15’6” - 16’6” | M1+M2 | | Frag | BOV II |
| BP/3/34575 | I63 | 15’10” - 16’10” | M2 | L | | BOV II |
| BP/3/34387 | J62 | 14’10” - 15’10” | M2 | R | | BOV II |
| BP/3/34467 | J63 | 17’10” - 18’10” | M2 | L | | BOV II |
| BP/3/34563 | J63 | 18’10” - 19’10” | M2 | R | Frag | BOV II |
| BP/3/34568 | J63 | 18’10” - 19’10” | M2 | R | | BOV II |
| BP/3/34562 | J63 | 18’10” - 19’10” | M2 | L | Frag | BOV II |
| BP/3/34485 | K62 | 17’10” - 18’10” | M2 | L | | BOV II |
| BP/3/34487 | K62 | 17’10” - 18’10” | M2 | | | BOV II |
| BP/3/34309 | K62 | 21’10” - 22’10” | M2 | R | | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34310 | K62 | 21'10" - 22'10" | M2 | R | | BOV II |
| BP/3/33786 | K63 | | M2 | L | | BOV II |
| BP/3/34098 | K63 | | M2 | R | | BOV II |
| BP/3/34616 | I62 | 18'10" - 19'10" | LUMB | | centrum frag | BOV II |
| BP/3/34573 | I63 | 15'10" - 16'10" | LUMB | | centrum | BOV II |
| BP/3/32433 | J62 | 19'10" - 20'10" | LUMB | | neural arch + spine | BOV II |
| BP/3/34341 | J63 | 15'10" - 16'10" | LUMB | | centrum frag | BOV II |
| BP/3/34545 | K62 | 18'10" - 19'10" | LUMB | | | BOV II |
| BP/3/33057 | L62 | 13'5" - 14'5" | LUMB | | Frag | BOV II |
| BP/3/33956 | L62 | 16'5" - 17'5" | LUMB | | centrum frag | BOV II |
| BP/3/33416 | L62 | 17'5" - 18'5" | LUMB | | Frag | BOV II |
| BP/3/28095 | L63 | 12'6" - 13'6" | LUMB | | centrum frag | BOV II |
| S94-14761 | L63 | 12'6" - 13'6" | LUMB | | centrum frag | BOV II |
| S94-14753 | L63 | 12'6" - 13'6" | LUMB | | neural arch + spine | BOV II |
| BP/3/33939 | L63 | | LUMB | | centrum frag | BOV II |
| BP/3/34052 | M60 | 10'5" - 11'5" | LUMB | | centrum frag | BOV II |
| BP/3/33981 | M61 | 11'3" - 12'3" | LUMB | | centrum frag | BOV II |
| S94-14990 | M64 | 11'4" - 12'4" | LUMB | | centrum | BOV II |
| BP/3/32740 | N59 | 21'0" - 22'0" | LUMB | | | BOV II |
| S94-6452 | O63 | 16'10" - 17'10" | LUMB | | centrum frag | BOV II |
| BP/3/34110 | K63 | | M2 | R | | BOV II |
| BP/3/33950 | L62 | 16'5" - 17'5" | M2 | L | | BOV II |
| S94-14705 | L63 | 12'6" - 13'6" | M2 | R | | BOV II |
| BP/3/34194 | L63 | 15'6" - 16'6" | M2 | R | | BOV II |
| BP/3/34214 | L63 | 15'6" - 16'6" | M2 | R | Frag | BOV II |
| BP/3/33998 | M61 | 11'3" - 12'3" | M2 | L | | BOV II |
| BP/3/18139 | M62 | 16'11" - 17'11" | M2R | | Frag | BOV II |
| BP/3/33227 | N60 | 21'9" - 22'9" | M2 | R | | BOV II |
| S94-6834 | P60 | 16'6" - 17'6" | M2 | | Frag | BOV II |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-6708 | P61 | 17’10” - 18’5” | M2 | R | | BOV II |
| S94-8044 | N63 | 13’7” - 14’7” | M2 | | | BOV II |
| BP/3/34630 | I62 | 18’10” - 19’10” | M3 | L | | BOV II |
| BP/3/32681 | J62 | 16’10” - 17’10” | M3 | L | | BOV II |
| BP/3/32657 | J62 | 16’10” - 17’10” | M3 | L | Frag | BOV II |
| BP/3/33923 | K62 | 15’10” - 16’10” | M3 | L | | BOV II |
| BP/3/34486 | K62 | 17’10” - 18’10” | M3 | R | Frag | BOV II |
| BP/3/34543 | K62 | 18’10” - 19’10” | M3 | R | Frag | BOV II |
| BP/3/34099 | K63 | | M3 | L | | BOV II |
| BP/3/34106 | K63 | | M3 | L | | BOV II |
| BP/3/33860 | L63 | 16’6” - 17’6” | M3 | L | | BOV II |
| BP/3/34044 | M60 | 10’5” - 11’5” | M3 | R | | BOV II |
| BP/3/33409 | N60 | 22’9” - 23’9” | M3 | | | BOV II |
| BP/3/19199 | P60 | 10’5” - 11’5” | M3 | R | Frag | BOV II |
| S94-6611 | P61 | 16’10” - 17’10” | M3 | L | | BOV II |
| BP/3/33511 | L62 | 14’5” - 15’5” | MAG | L | | BOV II |
| BP/3/34062 | M60 | 12’5” - 13’5” | MAG | L | Frag | BOV II |
| BP/3/34024 | M61 | 11’3” - 12’3” | MAG | R | Frag | BOV II |
| BP/3/33247 | N60 | 20’9” - 21’9” | MAG | R | | BOV II |
| S94-1196 | N63 | 13’10” - 14’10” | MAG | R | | BOV II |
| BP/3/32338 | K63 | 15’10” - 16’10” | 1/2 MAX+M2-3 | R | Frag | *Redunca fulvorufora* |
| BP/3/34466 | J63 | 17’10” - 18’10” | LOWER DP4 | R | whole | *RAedunca arundinum* |
| BP/3/33961 | L62 | 16’5” - 17’5” | LOWER M2 | R | whole | *R. arundinum* |
| BP/3/34357 | J63 | 15’10” - 16’10” | LOWER P4 | R | whole | *R. arundinum* |
| BP/3/34104 | K63 | | LOWER P4 | L | whole | *R. arundinum* |
| BP/3/33854 | L63 | 16’6” - 17’6” | LOWER P4 | L | whole | *R. arundinum* |
| BP/3/34541 | K62 | 18’10” - 19’10” | UPPER DP | | whole | *R. arundinum* |
| BP/3/34314 | K62 | 21’10” - 22’10” | UPPER DP | | whole | *R. arundinum* |
| BP/3/34655 | J62 | 20’10” - 21’10” | UPPER DP1 | R | whole | *R. arundinum* |

| **Catalogue No.** | **Square** | **Level** | **Element** | **Side** | **Portion** | **Taxon** |
|---|---|---|---|---|---|---|
| BP/3/34650 | J62 | 20’10” - 21’10” | UPPER M1 | R | whole | *Kobus ellipsyprimnus* |
| BP/3/34359 | J63 | 15’10” - 16’10” | UPPER M1 | L | whole | *K. ellipsyprimnus* |
| BP/3/34105 | K63 | | UPPER M1 | L | whole | *R. arundinum* |
| BP/3/34198 | L63 | 15’6” - 16’6” | UPPER M1 | L | whole | *R. arundinum* |
| BP/3/34647 | J62 | 20’10” - 21’10” | P1 | L | | *Hippotragus equinus* |
| BP/3/33976 | L62 | 16’5” - 17’5” | PHAL | | prox. frag | *Damaliscus dorcas* |
| BP/3/32291 | K63 | 17’0” - 18’0” | I1 | R | | *D. dorcas* |
| BP/3/34093 | K63 | | I1 | R | | *D. dorcas* |
| BP/3/33263 | L62 | 17’5” - 18’5” | I1 | L | | *D. dorcas* |
| BP/3/32471 | H62 | 21’10” - 22’10” | I2 | L | | *D. dorcas* |
| BP/3/34184 | L63 | 15’6” - 16’6” | I2 | R | | *D. dorcas* |
| BP/3/34386 | J62 | 14’10” - 15’10” | M1 | R | | *D. dorcas* |
| BP/3/32423 | J62 | 19’10” - 20’10” | M1 | | | *D. dorcas* |
| BP/3/34500 | J63 | 16’10” - 17’10” | M1 | L | | *D. dorcas* |
| BP/3/34494 | K62 | 20’10” - 21’10” | M1 | R | | *D. dorcas* |
| BP/3/34495 | K62 | 20’10” - 21’10” | M1 | L | | *D. dorcas* |
| BP/3/32357 | K63 | 15’10” - 16’10” | M1 | L | | *D. dorcas* |
| BP/3/32399 | K63 | 17’0” - 18’0” | M1 | L | | *D. dorcas* |
| BP/3/34031 | M61 | 11’3” - 12’3” | M1 | | Frag | *D. dorcas* |
| BP/3/34639 | H63 | 22’10” - 23’10” | M2 | R | | *D. dorcas* |
| BP/3/32377 | I62 | 19’10” - 20’20” | M2 | L | | *D. dorcas* |
| BP/3/32678 | J62 | 16’10” - 17’10” | M2 | R | | *D. dorcas* |
| BP/3/32366 | J63 | 19’10” - 20’10” | M2 | L | | *D. dorcas* |
| BP/3/33932 | K62 | 15’10” - 16’10” | M2 | L | | *D. dorcas* |
| BP/3/33934 | K62 | 15’10” - 16’10” | M2 | R | | *D. dorcas* |
| BP/3/33154 | L62 | 14’5” - 15’5” | M2 | L | | *D. dorcas* |
| BP/3/34197 | L63 | 15’6” - 16’6” | M2 | R | | *D. dorcas* |
| BP/3/33064 | M61 | 14’8” - 15’8” | M2 | R | | *D. dorcas* |
| BP/3/18204 | M62 | 17’11” - 18’11” | M2 | L | | *D. dorcas* |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32750 | N59 | 21’0” - 22’0” | M2 | L | | *D. dorcas* |
| BP/3/33229 | N60 | 21’9” - 22’9” | M2 | R | | *D. dorcas* |
| BP/3/33228 | N60 | 21’9” - 22’9” | M2 | R | | *D. dorcas* |
| S94-6638 | P61 | 15’10” - 16’10” | M2 | L | | *D. dorcas* |
| BP/3/32372 | I62 | 19’10” - 20’20” | M3 | R | | *D. dorcas* |
| BP/3/32659 | J62 | 16’10” - 17’10” | M3 | R | | *D. dorcas* |
| BP/3/34488 | K62 | 17’10” - 18’10” | M3 | R | | *D. dorcas* |
| BP/3/32333 | K63 | 15’10” - 16’10” | M3 | L | | *D. dorcas* |
| BP/3/34108 | K63 | | M3 | R | Frag | *D. dorcas* |
| BP/3/34154 | K63 | | M3 | R | | *D. dorcas* |
| BP/3/33153 | L62 | 14’5” - 15’5” | M3 | L | | *D. dorcas* |
| BP/3/33152 | L62 | 14’5” - 15’5” | M3 | R | | *D. dorcas* |
| BP/3/32757 | N59 | 21’0” - 22’0” | M3 | R | | *D. dorcas* |
| S94-6637 | P61 | 15’10” - 16’10” | M3 | R | | *D. dorcas* |
| BP/3/33046 | L62 | 13’5” - 14’5” | 1/2 MAND +P4-M3 | R | Frag | *D. dorcas* |
| BP/3/32289 | K63 | 17’0” - 18’0” | 1/2 MAX +DP4 | L | Frag | *D. dorcas* |
| BP/3/32404 | K63 | 17’0” - 18’0” | MTT | R | prox. shaft frag | *D. dorcas* |
| BP/3/33936 | K62 | 15’10” - 16’10” | P2 | L | | *D. dorcas* |
| BP/3/34294 | J63 | 14’10” - 15’10” | P3 | R | | *D. dorcas* |
| BP/3/34484 | K62 | 17’10” - 18’10” | P3 | L | | *D. dorcas* |
| BP/3/34202 | L63 | 15’6” - 16’6” | P3 | R | | *D. dorcas* |
| BP/3/34388 | J62 | 14’10” - 15’10” | P4 | R | | *D. dorcas* |
| BP/3/34644 | J62 | 20’10” - 21’10” | P4 | L | | *D. dorcas* |
| BP/3/32356 | K63 | 15’10” - 16’10” | P4 | L | | *D. dorcas* |
| BP/3/34203 | L63 | 15’6” - 16’6” | P4 | R | | *D. dorcas* |
| BP/3/33855 | L63 | 16’6” - 17’6” | P4 | L | | *D. dorcas* |
| BP/3/32752 | N59 | 21’0” - 22’0” | P4 | R | | *D. dorcas* |
| BP/3/34369 | J63 | 15’10” - 16’10” | 1/2 MAX +M1-2 | R | Frag | *Damaliscus lunatus* |
| BP/3/32394 | J63 | 20’10” - 21’10” | DP3 | L | | *Connochaetes* sp. |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32430 | J62 | 19'10" - 20'10" | I | R | | *Connochaetes* sp. |
| BP/3/33255 | N60 | 20'9" - 21'9" | M1 | R | | *Connochaetes* sp. |
| S94-14992 | M64 | 11'4" - 12'4" | MOLAR | | | *Connochaetes* sp. |
| BP/3/33257 | N60 | 20'9" - 21'9" | P4 | L | | *Connochaetes* sp. |
| BP/3/32412 | J63 | 19'10" - 20'10" | TOOTH | | Frag | *Connochaetes* sp. |
| BP/3/34107 | K63 | | $M^1$ | L | whole | *K. leche* |
| BP/3/34067 | M60 | 12'5" - 13'5" | $M^1$ | R | whole | *K. leche* |
| BP/3/34295 | J63 | 14'10" - 15'10" | $M^2$ | R | whole | *K. leche* |
| BP/3/33764 | K63 | | ATLAS | | whole | BOV III |
| BP/3/32437 | H62 | 21'10" - 22'10" | BONE Frag | | | BOV III |
| BP/3/33119 | L62 | 13'5" - 14'5" | BONE frag | | | BOV III |
| S94-14956 | L63 | 12'6" - 13'6" | BONE frag | | | BOV III |
| BP/3/17137 | L63 | | BONE frag | | | BOV III |
| BP/3/32746 | N59 | 21'0" - 22'0" | BONE frag | | | BOV III |
| BP/3/32747 | N59 | 21'0" - 22'0" | BONE frag | | | BOV III |
| S94-2036 | P60 | 14'4" - 15'4" | BONE frag | | | BOV III |
| BP/3/33139 | L62 | 14'5" - 15'5" | CALC | R | Frag | BOV III |
| BP/3/33140 | L62 | 14'5" - 15'5" | CALC | R | frag | BOV III |
| BP/3/33987 | M61 | 11'3" - 12'3" | CALC | R | caudal frag | BOV III |
| BP/3/33825 | K63 | | CERV | | frag | BOV III |
| BP/3/33041 | M61 | 15'8" - 16'8" | CERV | | centrum rag | BOV III |
| BP/3/34595 | I62 | 18'10" - 19'10" | CERV | | frag | BOV III |
| BP/3/33876 | K62 | 15'10" - 16'10" | CERV | | frag | BOV III |
| S94-14751 | L63 | 12'6" - 13'6" | CERV | | frag | BOV III |
| S94-14754 | L63 | 12'6" - 13'6" | CERV | | frag | BOV III |
| S94-14762 | L63 | 12'6" - 13'6" | CERV | | frag | BOV III |
| BP/3/33938 | L63 | | CERV | | frag | BOV III |
| S94-6455 | O63 | 16'10" - 17'10" | CERV | | frag | BOV III |
| BP/3/33765 | K63 | | CERV | | transverse process frag | BOV III |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-14902 | M63 | MIXED | MTT | | shaft frag | BOV III |
| BP/3/33115 | N60 | 13'9" - 14'9" | CRAN | | frag | BOV III |
| BP/3/33287 | M63 | 15'9" - 16'9" | CUN | L | frag | BOV III |
| BP/3/19104 | O61 | 10'0" - 11'5" | CALC | R | dist. frag | BOV III |
| BP/3/32282 | K63 | 17'0" - 18'0" | FEM | | dist. condyle frag | BOV III |
| BP/3/32344 | K63 | 15'10" - 16'10" | FEM | R | dist. frag | BOV III |
| BP/3/32371 | I62 | 19'10" - 20'20" | FEM | L | dist. shaft frag | BOV III |
| BP/3/34457 | J63 | 16'10" - 17'10" | FEM | L | dist. shaft frag | BOV III |
| BP/3/33724 | K63 | | FEM | R | dist. shaft frag | BOV III |
| BP/3/33660 | M62 | 16'11" - 17'11" | FEM | L | dist. shaft frag | BOV III |
| BP/3/32993 | L62 | 13'5" - 14'5" | HUM | R | dist. | BOV III |
| BP/3/33894 | K62 | 15'10" - 16'10" | HUM | L | dist. condyle | BOV III |
| BP/3/33730 | K63 | | HUM | | dist. condyle frag | BOV III |
| BP/3/34161 | K63 | | HUM | L | dist. condyle frag | BOV III |
| S94-7672 | M62 | 14'11" - 15'11" | HUM | R | dist. condyle frag | BOV III |
| S94-14911 | L-M63 | MIXED | HUM | L | dist. + shaft frag | BOV III |
| BP/3/32685 | J62 | 17'10" - 18'10" | HUM | R | dist. shaft frag | BOV III |
| BP/3/33774 | K63 | | HUM | | dist. shaft frag | BOV III |
| BP/3/34122 | K63 | | HUM | R | dist. + shaft | BOV III |
| BP/3/32894 | M61 | 14'8" - 15'8" | MTC | | dist. | BOV III |
| S94-7541 | M63 | 11'9" - 12'9" | MTP | | dist. | BOV III |
| BP/3/34162 | K63 | | MTP | | dist. frag | BOV III |
| BP/3/34167 | K63 | | MTP | | dist. condyle frag | BOV III |
| S94-10018 | M64 | 11'8" - 12'8" | MTP | | dist. condyle frag | BOV III |
| BP/3/33182 | N60 | 22'9" - 23'9" | MTP | | dist. condyle frag | BOV III |
| BP/3/33183 | N60 | 22'9" - 23'9" | MTP | | dist. condyle frag | BOV III |
| BP/3/33145 | L62 | 14'5" - 15'5" | MTT | | dist. | BOV III |
| S94-14827 | M61 | 16'8" - 17'8" | MTT | | dist. | BOV III |
| BP/3/32526 | M61 | 19'8" - 20'9" | MTT | | dist. | BOV III |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-6450 | O63 | 12’6” - 13’10” | MTT | | dist. | BOV III |
| S94-1692 | N61 | 10’10” - 11’10” | PHAL I | | dist. frag | BOV III |
| S94-7680 | M62 | 13’11” - 14’11” | RAD | R | dist. | BOV III |
| BP/3/34554 | K62 | 18’10” - 19’10” | RAD | L | dist. shaft frag | BOV III |
| BP/3/33148 | L62 | 14’5” - 15’5” | RAD-ULNA | L | dist.frag | BOV III |
| BP/3/34121 | K63 | | RAD-ULNA | L | dist. shaft frag | BOV III |
| BP/3/33144 | L62 | 14’5” - 15’5” | TIB | L | dist. | BOV III |
| BP/3/32893 | M61 | 14’8” - 15’8” | TIB | | dist. | BOV III |
| BP/3/18924 | L63 | 10’6” - 11’6” | TIB | R | dist. + shaft | BOV III |
| BP/3/34224 | L63 | 15’6” - 16’6” | TIB | L | dist. frag | BOV III |
| BP/3/16681 | L-M63 | MIXED | TIB | R | dist. shaft frag | BOV III |
| BP/3/33142 | L62 | 14’5” - 15’5” | TIB | R | dist. +CALC+ASTR | BOV III |
| BP/3/33186 | N60 | 22’9” - 23’9” | DP | | whole | BOV III |
| BP/3/32457 | H62 | 21’10” - 22’10” | DP4 | R | whole | BOV III |
| BP/3/32470 | H62 | 21’10” - 22’10” | DP4 | L | whole | BOV III |
| BP/3/32449 | H62 | 21’10” - 22’10” | ENAMEL | | Frag | BOV III |
| BP/3/33944 | L62 | 16’5” - 17’5” | FEM | | head | BOV III |
| BP/3/34334 | J63 | 15’10” - 16’10” | FEM | | shaft frag | BOV III |
| BP/3/33658 | M62 | 16’11” - 17’11” | FEM | L | shaft frag | BOV III |
| S94-7569 | M63 | 11’9” - 12’9” | FEM | | shaft frag | BOV III |
| S94-7573 | M63 | 11’9” - 12’9” | FEM | | shaft frag | BOV III |
| S94-6705 | P61 | 17’10” - 18’5” | HORN | | core Frag | BOV III |
| BP/3/19507 | P59 | 19’4” - 20’2” | HORN | | core frag | BOV III |
| BP/3/33223 | N59 | 22’0” - 23’0” | HORN | | core frag | BOV III |
| BP/3/34316 | J62 | 15’10” - 16’10” | HORN | | core frag | BOV III |
| BP/3/33818 | L63 | 15’6” - 16’6” | HORN | R | core frag | BOV III |
| BP/3/33819 | L63 | 15’6” - 16’6” | HORN | L | core frag | BOV III |
| BP/3/33820 | L63 | 15’6” - 16’6” | HORN | | core frag | BOV III |
| S94-14994 | M64 | 11’4” - 12’4” | HORN | | core frag | BOV III |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-7277 | O63 | 15’9” - 16’9” | HUM | L | whole | BOV III |
| S94-6636B | P61 | 15’10” - 16’10” | HUM | L | dist. Epyph. | BOV III |
| BP/3/33039 | M61 | 15’8” - 16’8” | HUM | L | head | BOV III |
| BP/3/19108 | O61 | 10’0” - 11’7 | HUM | R | head frag | BOV III |
| BP/3/33562 | H62 | 21’10” - 22’10” | HUM | R | shaft frag | BOV III |
| BP/3/34588 | I62 | 18’10” - 19’10” | HUM | R | shaft frag | BOV III |
| BP/3/32687 | J62 | 17’10” - 18’10” | HUM | R | shaft frag | BOV III |
| BP/3/34335 | J63 | 15’10” - 16’10” | HUM | L | shaft frag | BOV III |
| BP/3/32358 | K63 | 15’10” - 16’10” | I | | whole | BOV III |
| BP/3/33914 | K62 | 15’10” - 16’10” | I | | frag | BOV III |
| BP/3/33187 | N60 | 22’9” - 23’9” | I1 | L | whole | BOV III |
| BP/3/19109 | O61 | 10’0” - 11’8 | ILI | R | frag | BOV III |
| BP/3/34330 | J62 | 15’10” - 16’10” | 1/2 PEL | R | frag | BOV III |
| BP/3/19242 | Q61 | 10’5” - 11’9” | ISCH | R | frag | BOV III |
| BP/3/34596 | I62 | 18’10” - 19’10” | ISCH | L | frag | BOV III |
| BP/3/34598 | I62 | 18’10” - 19’10” | ISCH | L | frag | BOV III |
| BP/3/33728 | K63 | | ISCH | L | frag | BOV III |
| BP/3/33729 | K63 | | ISCH | | frag | BOV III |
| BP/3/33337 | J62 | 16’10” - 17’10” | LBSF | | | BOV III |
| BP/3/34095 | K63 | | $DP_2$ | R | whole | BOV III |
| BP/3/33857 | L63 | 16’6” - 17’6” | $DP_2$ | R | whole | BOV III |
| BP/3/34199 | L63 | 15’6” - 16’6” | $DP_3$ | | whole | BOV III |
| BP/3/34498 | J63 | 16’10” - 17’10” | $I_1$ | L | whole | BOV III |
| BP/3/32754 | N59 | 21’0” - 22’0” | $I_1$ | R | whole | BOV III |
| BP/3/32767 | N59 | 21’0” - 22’0” | $I_1$ | R | whole | BOV III |
| BP/3/32704 | J62 | 17’10” - 18’10” | $M_3$ | R | whole | BOV III |
| BP/3/34190 | L63 | 15’6” - 16’6” | $M_3$ | R | whole | BOV III |
| BP/3/33762 | K63 | | LUMB | | frag | BOV III |
| BP/3/34448 | K62 | 17’10” - 18’10” | LUMB | | neural arch/spine | Frag BOV III |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/32428 | J62 | 19’10” - 20’10” | LUMB | | whole | BOV III |
| BP/3/33179 | L62 | 14’5” - 15’5” | LUN | R | whole | BOV III |
| BP/3/33178 | L62 | 14’5” - 15’5” | MAGN | R | whole | BOV III |
| BP/3/34572 | I63 | 15’10” - 16’10” | 1/2 MAND | L | frag | BOV III |
| BP/3/33601 | L62 | 14’5” - 15’5” | 1/2 MAND F+MS | R | frag | BOV III |
| BP/3/33398 | J62 | 16’10” - 17’10” | 1/2 MAND | R | frag | BOV III |
| BP/3/33784 | K63 | | 1/2 MAX F+MS | R | frag | BOV III |
| BP/3/32671 | J62 | 16’10” - 17’10” | 1/2 MAX | L | frag | BOV III |
| BP/3/33602 | L62 | 14’5” - 15’5” | 1/2 MAX +M2+3 | R | frag | BOV III |
| BP/3/18140 | M62 | 16’11” - 17’11” | MOLAR | | frag | BOV III |
| BP/3/32755 | N59 | 21’0” - 22’0” | MOLAR | | frag | BOV III |
| BP/3/32756 | N59 | 21’0” - 22’0” | MOLAR | | frag | BOV III |
| BP/3/33189 | N60 | 22’9” - 23’9” | MOLAR | | frag | BOV III |
| BP/3/32386 | J63 | 20’10” - 21’10” | MTC | | frag | BOV III |
| S94-10057 | N60 | 13’9” - 14’9” | MTC | | shaft frag | BOV III |
| S94-11255 | P61 | 17’10” - 18’5” | MTP | | dist. Condyle | BOV III |
| S94-2023 | P61 | 14’10” - 15’10” | MTP | | shaft frag | BOV III |
| BP/3/34410 | J63 | 13’10” - 14’10” | MTT | | shaft frag | BOV III |
| BP/3/32387 | J63 | 20’10” - 21’10” | MTT | | shaft frag | BOV III |
| BP/3/34383 | K62 | 19’10” - 20’10” | MTT | | shaft frag | BOV III |
| BP/3/18091 | M62 | 16’11” - 17’11” | MTT | | shaft frag | BOV III |
| BP/3/18190 | M62 | 17’11” - 18’11” | MTT | | shaft frag | BOV III |
| S94-7568 | M63 | 11’9” - 12’9” | MTT | | shaft frag | BOV III |
| S94-1243 | N63 | 12’9” - 13’9” | MTT | R | shaft frag | BOV III |
| BP/3/19237 | P59 | 8’1” - 9’1” | MTT | | shaft frag | BOV III |
| BP/3/18193 | M62 | 17’11” - 18’11” | VERT | | neural spine frag | BOV III |
| BP/3/32414 | J63 | 19’10” - 20’10” | OS PET | L | whole | BOV III |
| BP/3/32304 | K63 | 15’10” - 16’10” | OS PET | | whole | BOV III |
| BP/3/32948 | M60 | 15’2” - 16’2” | OS PET | L | whole | BOV III |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34155 | K63 | | OS PET | L | frag | BOV III |
| BP/3/34237 | L63 | 15’6” - 16’6” | 1/2 PEL | | frag | BOV III |
| BP/3/17010 | L63 | 11’6” - 12’6” | VERT | | frag | BOV III |
| BP/3/33286 | M63 | 15’9” - 16’9” | VERT | | frag | BOV III |
| BP/3/33288 | M63 | 15’9” - 16’9” | VERT | | frag | BOV III |
| BP/3/33289 | M63 | 15’9” - 16’9” | VERT | | frag | BOV III |
| BP/3/33290 | M63 | 15’9” - 16’9” | VERT | | frag | BOV III |
| BP/3/32351 | K63 | 15’10” - 16’10” | | | | BOV III |
| BP/3/32353 | K63 | 15’10” - 16’10” | | | | BOV III |
| BP/3/34507 | I63 | 15’10” - 16’10” | RAD | R | dist.+shaft frag | BOV III-IV |
| BP/3/34272 | J63 | 14’10” - 15’10” | SCAP | R | dist. frag | BOV III-IV |
| BP/3/34275 | J63 | 14’10” - 15’10” | MTC | R | whole | BOV III-IV |
| BP/3/34508 | I63 | 15’10” - 16’10” | PHAL I | | frag | BOV III-IV |
| BP/3/34509 | I63 | 15’10” - 16’10” | PHAL II | | whole | BOV III-IV |
| BP/3/34235 | L63 | 15’6” - 16’6” | PHAL II | | whole | BOV III-IV |
| BP/3/34663 | J62 | 17’10” - 18’10” | TOOTH | | Frag | BOV III-IV |
| BP/3/32625 | O61 | 11’5” - 12’5” | BONE | | Frag | BOV IV |
| BP/3/32601 | M60 | 17’2” - 18’2” | BONE | | Frag | BOV IV |
| BP/3/33008 | L62 | 13’5” - 14’5” | CALC | L | Frag | BOV IV |
| S94-2021 | P60 | 15’4” - 16’4” | CALC | R | Frag | BOV IV |
| BP/3/18926 | L63 | 10’6” - 11’6” | CERV | | Frag | BOV IV |
| BP/3/17012 | L63 | 11’6” - 12’6” | CERV | | Frag | BOV IV |
| BP/3/17013 | L63 | 11’6” - 12’6” | CERV | | frag | BOV IV |
| BP/3/17014 | L63 | 11’6” - 12’6” | CERV | | Frag | BOV IV |
| BP/3/33466 | M61 | 19’8”-20’8” | CERV | | Frag | BOV IV |
| S94-2017 | P60 | 15’4” - 16’4” | MTT | | dist. | BOV IV |
| S94-10056 | N60 | 13’9” - 14’9” | MTC | | dist. | BOV IV |
| S94-7735 | M62 | 9’11” - 10’11” | MTP | | dist. | BOV IV |
| BP/3/32944 | M61 | 14’8” - 15’8” | MTP | | MTP | BOV IV |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/19059 | P60 | 13'7" - 14'4" | RAD | R | dist. | BOV IV |
| S94-9975 | M64 | 9'8" - 10'8" | SCAP | L | dist. frag | BOV IV |
| S94-7673 | M61 | 13'8" - 14'8" | SCAP | L | dist. frag | BOV IV |
| S94-7631 | M62 | 15'11" - 16'11" | SCAP | R | dist. frag | BOV IV |
| BP/3/32714 | J62 | 17'10" - 18'10" | HUM | R | shaft frag | BOV IV |
| S94-14842 | M63 | 7'9" - 8'9" | MAG | R | whole | BOV IV |
| S94-10058 | N60 | 13'9" - 14'9" | MTC | | shaft frag | BOV IV |
| BP/3/32903 | M61 | 14'8" - 15'8" | MTT | | shaft frag | BOV IV |
| S94-1230 | N63 | 12'9" - 13'9" | MTT | R | shaft frag | BOV IV |
| S94-1242 | N63 | 12'9" - 13'9" | MTT | R | shaft frag | BOV IV |
| BP/3/33004 | L62 | 13'5" - 14'5" | PHAL I | | whole | BOV IV |
| S94-2333 | P60 | 2'9" - 5'6" | PHAL I | | Frag | BOV IV |
| BP/3/32427 | J62 | 19'10" - 20'10" | PREMAX | | Frag | BOV IV |
| BP/3/32686 | J62 | 17'10" - 18'10" | MTT | L | prox. | BOV IV |
| S94-14823 | M61 | 16'8" - 17'8" | MTT | | prox. | BOV IV |
| S94-9966 | M64 | 9'8" - 10'8" | MTT | L | prox | BOV IV |
| S94-1224 | N63 | 12'9" - 13'9" | MTT | R | prox. | BOV IV |
| S94-1239 | N63 | 12'9" - 13'9" | MTT | R | prox. frag | BOV IV |
| S94-7662 | M62 | 14'11" - 15'11" | PHAL I | | prox. frag | BOV IV |
| S94-1726 | N61 | 11'10" - 12'10" | RAD-ULNA | R | prox. | BOV IV |
| BP/3/32904 | M61 | 14'8" - 15'8" | RAD-ULNA | R | prox. frag | BOV IV |
| BP/3/33009 | M61 | 15'8" - 16'8" | TIB | R | prox. | BOV IV |
| BP/3/33000 | L62 | 13'5" - 14'5" | PUB | R | Frag | BOV IV |
| S94-7807 | Q59 | 15'0" - 16'0" | RIB | | Frag | BOV IV |
| S94-7806 | Q59 | 15'0" - 16'0" | RIB | | head | BOV IV |
| BP/3/33606 | L62 | 14'5" - 15'5" | SCAP | R | blade frag | BOV IV |
| BP/3/33607 | L62 | 14'5" - 15'5" | SCAP | R | blade frag | BOV IV |
| BP/3/33608 | L62 | 14'5" - 15'5" | SCAP | | blade frag | BOV IV |
| S94-6619 | P60 | 17'6" - 18'6" | SCAP | R | glenoid cavity | BOV IV |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/16693 | L63 | 10’6” - 11’6” | THOR | | Frag | BOV IV |
| BP/3/32306 | K63 | 15’10” - 16’10” | TIB | L | shaft frag | BOV IV |
| BP/3/32623 | P59 | 14’8” - 15’2” | TIB | R | shaft frag | BOV IV |
| S94-6829 | P60 | 16’6” - 17’6” | TOOTH | | Frag | BOV IV |
| S94-6835 | P60 | 16’6” - 17’6” | TOOTH | | Frag | BOV IV |
| S94-6857 | P58 | 23’10” - 24’10” | TOOTH | | Frag | BOV IV |
| S94-6801 | P59 | 18’4” - 19’4” | UPPER M1 | L | Frag | BOV IV |
| S94-6727 | P59 | 22’2”-. | UPPER P4 | R | Frag | BOV IV |
| BP/3/32434 | H62 | 21’10” - 22’10” | VERT | | Frag | BOV IV |
| BP/3/32443 | H62 | 21’10” - 22’10” | VERT | | Frag | BOV IV |
| BP/3/16659 | L63 | 10’6” - 11’6” | VERT | | centrum frag | BOV IV |
| BP/3/17015 | L63 | 11’6” - 12’6” | VERT | | Frag | BOV IV |
| S94-14747 | L63 | 12’6” - 13’6” | VERT | | centrum frag | BOV IV |
| S94-14746 | L63 | 12’6” - 13’6” | VERT | | Frag | BOV IV |
| S94-14748 | L63 | 12’6” - 13’6” | VERT | | Frag | BOV IV |
| S94-14750 | L63 | 12’6” - 13’6” | VERT | | Frag | BOV IV |
| S94-14764 | L63 | 12’6” - 13’6” | VERT | | Frag | BOV IV |
| S94-14766 | L63 | 12’6” - 13’6” | VERT | | Frag | BOV IV |
| BP/3/33467 | M61 | 19’8”-20’8” | VERT | | Frag | BOV IV |
| BP/3/33469 | M61 | 19’8”-20’8” | VERT | | Frag | BOV IV |
| BP/3/33470 | M61 | 19’8”-20’8” | VERT | | Frag | BOV IV |
| BP/3/33973 | L62 | 16’5”- 17’5” | RAD | L | dist.+shaft frag | *LEPUS capensis* |
| BP/3/19166 | O60 | 9’3” - 9’11” | FEMUR | | | *L. capensis* |
| BP/3/34117 | K63 | | I | | whole | *L. capensis* |
| BP/3/34015 | M61 | 11’3” - 12’3” | HUM | R | prox. shaft frag | *L. capensis* |
| BP/3/34577 | I62 | 18’10” - 19’10” | TIB | L | prox. shaft frag | *L. capensis* |
| BP/3/34434 | K62 | 17’10” - 18’10” | TIB | L | shaft frag | *L. capensis* |
| BP/3/34021 | M61 | 11’3” - 12’3” | TIB | L | shaft frag | *L. capensis* |
| BP/3/34560 | J63 | 18’10” - 19’10” | 1/2 MAND | | Frag | *Procavia capensis* |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| BP/3/34561 | J63 | 18'10" - 19'10" | 1/2 MAND | | Frag | *P. capensis* |
| BP/3/32271 | K63 | 17'0" - 18'0" | 1/2 PEL | | whole | *P. capensis* |
| BP/3/32765 | N59 | 21'0" - 22'0" | I | | Frag | *Hystrix africaeaustralis* |
| BP/3/32766 | N59 | 21'0" - 22'0" | I | | Frag | *H. africaeaustralis* |
| BP/3/33313 | P59 | 14'1" - 15'1" | I | | Frag | *H. africaeaustralis* |
| BP/3/34419 | J63 | 13'10" - 14'10" | ISCH | R | Frag | *H. africaeaustralis* |
| BP/3/32683 | J62 | 16'10" - 17'10" | M1 | R | | *H. africaeaustralis* |
| BP/3/34096 | K63 | | M1 | R | Frag | *H. africaeaustralis* |
| BP/3/34219 | L63 | 15'6" - 16'6" | M1 | L | | *H. africaeaustralis* |
| BP/3/34220 | L63 | 15'6" - 16'6" | M1 | L | | *H. africaeaustralis* |
| BP/3/33113 | M61 | 14'8" - 15'8" | M1 | L | | *H. africaeaustralis* |
| BP/3/34492 | K62 | 20'10" - 21'10" | M2 | R | | *H. africaeaustralis* |
| BP/3/34479 | K62 | 20'10" - 21'10" | M2 | R | | *H. africaeaustralis* |
| BP/3/32621 | M63 | 7'9" - 8'9" | M3 | | | *H. africaeaustralis* |
| BP/3/32622 | M63 | 7'9" - 8'9" | M3 | | | *H. africaeaustralis* |
| BP/3/34633 | I62 | 18'10" - 19'10" | M4 | R | | *H. africaeaustralis* |
| BP/3/32869 | N59 | 16'0" - 17'0" | M4 | R | | *H. africaeaustralis* |
| BP/3/33600 | L62 | 14'5" - 15'5" | 1/2 MAND + TEETH | L | | *H. africaeaustralis* |
| BP/3/32682 | J62 | 16'10" - 17'10" | MOLAR | | | *H. africaeaustralis* |
| BP/3/34566 | J63 | 18'10" - 19'10" | MOLAR | | | *H. africaeaustralis* |
| BP/3/33597 | K63 | 15'10" - 16'10" | MOLAR | | Frag | *H. africaeaustralis* |
| BP/3/33114 | M60 | 15'2" - 16'2" | MOLAR | | | *H. africaeaustralis* |
| BP/3/33996 | M61 | 11'3" - 12'3" | MOLAR | | | *H. africaeaustralis* |
| BP/3/34666 | K62 | 19'10" - 20'10" | SCAP | | dist. frag | *H. africaeaustralis* |
| BP/3/33926 | K62 | 15'10" - 16'10" | TOOTH | | | *H. africaeaustralis* |
| BP/3/18228 | M62 | 17'11" - 18'11" | BONE | | frag | SMALL MAMMAL |
| BP/3/33410 | N60 | 22'9" - 23'9" | BONE | | frag | SMALL MAMMAL |
| S94-7540 | M63 | 11'9" - 12'9" | HUM | | dist. | SMALL MAMMAL |
| S94-7553 | M63 | 11'9" - 12'9" | HUM | | dist. | SMALL MAMMAL |

| Catalogue No. | Square | Level | Element | Side | Portion | Taxon |
|---|---|---|---|---|---|---|
| S94-7650 | M62 | 15'11" - 16'11" | FEM | | shaft frag | SMALL MAMMAL |
| S94-9532 | N60 | 20'9" - 21'9" | FEM | | shaft frag | SMALL MAMMAL |
| BP/3/32637 | L62 | 15'5" - 16'5" | LBSF | | frag | SMALL MAMMAL |
| S94-14816 | M61 | 16'8" - 17'8" | LBSF | | frag | SMALL MAMMAL |
| BP/3/18252 | M62 | 17'11" - 18'11" | LBSF | | Frag | SMALL MAMMAL |
| BP/3/18253 | M62 | 17'11" - 18'11" | LBSF | | Frag | SMALL MAMMAL |
| S94-9974 | M64 | 9'8" - 10'8" | LBSF | | Frag | SMALL MAMMAL |
| S94-10845 | N61 | 11'10" - 12'10" | LBSF | | Frag | SMALL MAMMAL |
| S94-10140 | N64 | 12'8" - 13'8" | LBSF | | Frag | SMALL MAMMAL |
| S94-2028 | P62 | 15'0" - 16'0" | LBSF | | Frag | SMALL MAMMAL |
| BP/3/18182 | M62 | 16'11" - 17'11" | PHAL | | whole | SMALL MAMMAL |
| S94-6901 | P61 | 16'10" - 17'10" | PHAL | | dist. Frag | SMALL MAMMAL |
| S94-9973 | M64 | 9'8" - 10'8" | TIB | | prox. | SMALL MAMMAL |
| S94-14773 | L63 | 12'6" - 13'6" | ULNA | | prox. | SMALL MAMMAL |
| S94-7643 | M62 | 15'11" - 16'11" | RAD | | shaft frag | SMALL MAMMAL |
| BP/3/32554 | M61 | 18'8" - 19'8" | VERT | | whole | SMALL MAMMAL |

# Appendix D

# Post-Member 6 Infill lithic artefacts

## D.1 Post-Member 6 Infill artefacts

Table D.1: Post-Member 6 Infill artefacts

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 198 | N60 | 17'9"-18'9" | Q | SW | 22 | INCOMPLETE FLAKE | |
| 633 | O62 | 16'9"-17'9" | Q | F | 21 | INCOMPLETE FLAKE | |
| 638 | M63 | 14'10"-15'10" | QZE | | 99 | MANUPORT | |
| 675 | O60 | 9'3"-9'11" | QZE | W | 107 | CHOPPER CORE | |
| 677 | N61 | 17'11"-18'11" | QZE | W | 67 | MANUPORT | |
| 679 | P60 | 15'4"-16'4" | Q | SW | 25 | INCOMPLETE FLAKE | |
| 682 | N63 | 13'0"-14'0" | Q | SW | 24 | INCOMPLETE FLAKE | |
| 740 | N60 | 18'9"-19'9" | C | SW | 42 | INCOMPLETE FLAKE | |
| 837 | N60 | 17'9"-18'9" | Q | F | 47 | DENTICULATE | |
| 847 | P60 | 9'5"-10'5" | Q | F | 25 | INCOMPLETE FLAKE | |
| 852 | M60 | 18'2"-19'2" | Q | F | 47 | INCOMPLETE FLAKE | |
| 859 | P59 | 14'1"-15'1" | Q | F | 27 | INCOMPLETE FLAKE | |
| 864 | M61 | 17'8"-18'8" | Q | W | 21 | INCOMPLETE FLAKE | |
| 875 | N60 | 18'0"-19'9" | Q | F | 18 | CHIP | |
| 888 | N61 | 14'11"-15'11" | Q | W | 33 | INCOMPLETE FLAKE | |
| 925 | M60 | 16'2"-17'2" | Q | F | 27 | INCOMPLETE FLAKE | |
| 942 | M60 | 16'2"-17'2" | Q | F | 32 | INCOMPLETE FLAKE | |
| 971 | M60 | 19'2"-20'2" | Q | F | 17 | CHIP | |
| 972 | M61 | 17'8"-18'8" | Q | SW | 11 | CHIP | |
| 973 | N59 | 16'0"-17'0" | Q | F | 15 | CHIP | |
| 981 | N60 | 16'9"-17'9" | Q | SW | 19 | CHIP | |
| 990 | M61 | 17'8"-18'8" | Q | F | 20 | INCOMPLETE FLAKE | |
| 1006 | N60 | 14'9"-15'9" | Q | F | 23 | CHUNK | |
| 1008 | M60 | 17'2"-18'2" | Q | W | 29 | CHUNK | |
| 1016 | N60 | 16'9"-17'9" | Q | SW | 32 | CHUNK | |
| 1026 | N61 | 16'11"-17'11" | Q | F | 30 | BIPOLAR CORE REMAIN | |
| 1040 | N60 | 15'9"-16'9" | Q | SW | 23 | CHUNK | |
| 1049 | N61 | 16'11"-17'11" | Q | F | 33 | BIPOLAR CORE REMAIN | |
| 1068 | P59 | 12'1"-13'1" | Q | W | 40 | CHUNK | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 1072 | M60 | 19’2”-20’2” | Q | W | 28 | CHUNK | |
| 1080 | M61 | 13’10”-14’10” | Q | F | 31 | INCOMPLETE FLAKE | |
| 1083 | N61 | 16’11”-17’11” | Q | SW | 27 | INCOMPLETE FLAKE | |
| 1090 | N61 | 18’11”-19’11” | Q | W | 102 | POLYHEDRON | |
| 1102 | M60 | 19’2”-20’2” | Q | F | 35 | CORE | |
| 1126 | N61 | 11’10”-12’10” | QZE | F | 84 | CORE | |
| 1153 | N60 | 11’9”-12’9” | Q | W | 47 | CHUNK | |
| 1171 | M60 | 15’2”-16’2” | Q | W | 29 | CHUNK | |
| 1172 | M61 | 19’8”-20’8” | Q | F | 32 | CHUNK | |
| 1173 | M61 | 16’8”-17’8” | Q | SW | 33 | CHUNK | |
| 1193 | M60 | 14’8”-15’8” | Q | F | 35 | CHUNK | |
| 1217 | M61 | 15’0”-16’0” | Q | F | 50 | BO-POLAR CORE REMAIN | |
| 1218 | M60 | 15’2”-16’2” | Q | SW | 43 | POLYHEDRON | |
| 1226 | N61 | 14’11”-15’11” | Q | | 46 | COBBLE | |
| 1232 | M60 | 17’2”-18’2” | Q | F | 46 | CHUNK | |
| 1247 | M62 | 15’11”-16’11” | Q | W | 73 | POLYHEDRON | |
| 1403 | N61 | 16’11”-17’11” | QZE | W | 122 | CORE | |
| 1420 | P61 | 11’11”-12’11” | QZE | W | 75 | CORE | |
| 1518 | N63 | 14’10”-15’10” | QZE | | 77 | MANUPORT | |
| 1567 | T56 | | Q | F | 51 | INCOMPLETE FLAKE | |
| 1743 | N63 | 11’10”-12’10” | QZE | VW | 64 | POLYHEDRON | |
| 1744 | N63 | 11’10”-12’10” | QZE | | 69 | MANUPORT | |
| 1746 | M61 | 10’8”-11’8” | QZE | W | 106 | MANUPORT | |
| 1747 | M61 | 10’8”-11’8” | DIAB | | 79 | MANUPORT | |
| 1763 | N62 | 14’0”-15’0” | Q | W | 48 | CORE | |
| 1786 | P58 | 16’10”-17’10” | Q | | 86 | COBBLE | |
| 1803 | P60 | 9’5”-10’5” | QZE | F | 55 | COMPLETE FLAKE | |
| 1816 | N60 | 11’8”-12’8” | QZE | W | 108 | CHUNK | |
| 1820 | N59 | 11’10”-12’10” | QZE | F | 36 | INCOMPLETE FLAKE | |
| 1824 | N60 | 18’9”-19’9” | DIAB | | 67 | MANUPORT | |
| 1827 | P61 | 13’1”-14’10” | QZE | W | 49 | CHUNK | |
| 1828 | M61 | 14’8”-15’8” | QZE | W | 76 | CHOPPER CORE | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 1834 | N61 | 13’10”-14’10” | QZE | F | 52 | CHUNK | |
| 1836 | P61 | 13’1”-14’10” | QZE | F | 42 | CHUNK | |
| 1838 | N60 | 19’9”-20’9” | QZE | W | 113 | CASUAL CORE | |
| 1843 | P61 | 13’1”-14’10” | QZE | F | 38 | CHUNK | |
| 1849 | P59 | 15’2”-16’2” | QZE | | 65 | MANUPORT | |
| 1850 | M61 | 15’8”-16’8” | QZE | W | 60 | MANUPORT | |
| 1851 | P59 | 13’0”-14’0” | QZE | W | 59 | CORE ON FLAKE | |
| 1914 | N59 | 14’0”-15’0” | IG? | W | 55 | NATURAL | |
| 1916 | N60 | 17’9”-18’9” | DIAB | W | 70 | CHUNK | |
| 1919 | M60 | 17’2”-18’2” | DIAB | | 62 | MANUPORT | |
| 1920 | N60 | 18’9”-19’9” | DIAB | W | 30 | COMPLETE FLAKE | |
| 1975 | N61 | 16’11”-17’11” | Q | W | 16 | NATURAL | |
| 2064 | M61 | 13’8”-14’8” | QZE | SW | 99 | DISCOIDAL CORE | |
| 2098 | M62 | 14’11”-15’11” | Q | | 66 | MANUPORT | |
| 2111 | N61 | 13’10”-14’10” | Q | W | 88 | CORE | |
| 2118 | M60 | 11’2”-12’2” | DIAB | VW | 66 | POLYHEDRON | |
| 2387 | P59 | 15’2”-16’2” | QZE | | 70 | MANUPORT | |
| 2787 | O59 | 17’6”-18’6” | Q | F | 14 | CHIP | |
| 2788 | O59 | 17’6”-18’6” | Q | F | 16 | CHIP | |
| 4259 | P60 | 16’6”-17’6” | QZE | | 100 | MANUPORT | |
| 4261 | P60 | 16’6”-17’6” | Q | F | 62 | MANUPORT | |
| 4262 | P60 | 16’6”-17’6” | Q | | 53 | NATURAL | |
| 4263 | P60 | 16’6”-17’6” | QZE | F | 36 | INCOMPLETE FLAKE | |
| 4264 | P60 | 16’6”-17’6” | DIAB | W | 75 | COMPLETE FLAKE | |
| 4265 | P61 | 16’6”-17’6” | DIAB | W | 38 | COMPLETE FLAKE | |
| 4266 | P62 | 16’6”-17’6” | Q | SW | 32 | CHUNK | |
| 4267 | P63 | 16’6”-17’6” | Q | F | 40 | INCOMPLETE FLAKE | |
| 4268 | P64 | 16’6”-17’6” | Q | F | 25 | INCOMPLETE FLAKE | |
| 4269 | P65 | 16’6”-17’6” | Q | F | 21 | CHUNK | |
| 4270 | P66 | 16’6”-17’6” | Q | F | 20 | COMPLETE FLAKE | |
| 4271 | P67 | 16’6”-17’6” | Q | F | 10 | CHIP | |
| 4272 | P68 | 16’6”-17’6” | Q | F | 7 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 4273 | P69 | 16'6"-17'6" | Q | F | 7 | CHIP | |
| 4274 | O59 | 18'6"-19'6" | QZE | | 69 | HAMMERSTONE | |
| 4275 | O59 | 18'6"-19'6" | Q | F | 33 | CHUNK | |
| 4276 | O59 | 18'6"-19'6" | Q | F | 21 | INCOMPLETE FLAKE | |
| 4278 | O59 | 18'6"-19'6" | Q | F | 16 | CHIP | |
| 4279 | O59 | 18'6"-19'6" | Q | SW | 10 | CHIP | |
| 4280 | O59 | 18'6"-19'6" | Q | SW | 14 | CHIP | |
| 4281 | O59 | 18'6"-19'6" | Q | F | 11 | CHIP | |
| 4282 | O59 | 18'6"-19'6" | Q | F | 13 | CHIP | |
| 4283 | O59 | 18'6"-19'6" | Q | F | 6 | CHIP | |
| 4284 | P59 | 15'2"-16'2" | QZE | | 90 | CASUAL CORE | |
| 4367 | P60 | 17'6"-18'6" | Q | | 86 | SPLIT COBBLE | |
| 4368 | N60 | 22'9"-23'9" | Q | F | 38 | CHUNK | |
| 4369 | N60 | 22'9"-23'9" | Q | F | 28 | CORE | |
| 4371 | P60 | 17'6"-18'6" | QZE | | 78 | COBBLE FRAGMENT | |
| 4372 | P60 | 17'6"-18'6" | QZE | W | 91 | COMPLETE FLAKE | X |
| 4373 | P60 | 17'6"-18'6" | C | F | 10 | CHIP | |
| 4374 | P60 | 17'6"-18'6" | Q | F | 13 | CHIP | |
| 4375 | P60 | 17'6"-18'6" | IG | W | 15 | CHIP | |
| 4376 | P60 | 17'6"-18'6" | C | F | 10 | CHIP | |
| 4377 | P60 | 17'6"-18'6" | Q | SW | 17 | CHIP | |
| 4378 | P60 | 17'6"-18'6" | Q | F | 16 | CHIP | |
| 4379 | P60 | 17'6"-18'6" | Q | F | 10 | CHIP | |
| 4380 | P60 | 17'6"-18'6" | Q | F | 9 | CHIP | |
| 4381 | P60 | 17'6"-18'6" | Q | SW | 16 | CHIP | |
| 4382 | P60 | 17'6"-18'6" | QZE | F | 22 | INCOMPLETE FLAKE | |
| 4383 | P60 | 17'6"-18'6" | Q | F | 9 | CHIP | |
| 4384 | P60 | 17'6"-18'6" | Q | F | 15 | CHIP | |
| 4385 | P60 | 17'6"-18'6" | Q | W | 10 | CHIP | |
| 4386 | P60 | 17'6"-18'6" | Q | F | 17 | CHIP | |
| 4387 | P60 | 17'6"-18'6" | Q | SW | 9 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 4539 | N63 | 11’4” | QZE | W | 141 | POLYHEDRON | |
| 4826 | O61 | 18’8”-19’8” | Q | SW | 71 | BIPOLAR CORE | |
| 4827 | O61 | 18’8”-19’8” | Q | F | 56 | BIPOLAR PIECE | |
| 4828 | O61 | 18’8”-19’8” | Q | F | 68 | CHUNK | |
| 4829 | O61 | 18’8”-19’1” | C | SW | 12 | CHIP | |
| 4830 | O61 | 18’8”-19’1” | Q | SW | 10 | CHIP | |
| 4831 | O61 | 18’8”-19’1” | Q | F | 8 | CHIP | |
| 4832 | O61 | 18’8”-19’1” | Q | F | 18 | CHIP | |
| 4833 | O61 | 18’8”-19’1” | Q | F | 11 | CHIP | |
| 4834 | O61 | 18’8”-19’1” | Q | F | 9 | CHIP | |
| 4835 | O61 | 18’8”-19’1” | Q | F | 13 | CHIP | |
| 4859 | N63 | 12’10”-13’10” | Q | F | 28 | INCOMPLETE FLAKE | |
| 4860 | N63 | 12’10”-13’10” | Q | F | 28 | INCOMPLETE FLAKE | |
| 4861 | N63 | 12’10”-13’10” | Q | F | 28 | INCOMPLETE FLAKE | |
| 4862 | N63 | 12’10”-13’10” | Q | F | 32 | INCOMPLETE FLAKE | |
| 4937 | P58 | 18’10”-19’10” | Q | | 68 | CORE | |
| 4946 | P58 | 17’10”-18’10” | QZE | | 102 | SINGLE PLATFORM CORE | |
| 5164 | O59 | 15’6”-16’6” | Q | F | 17 | CHIP | |
| 5165 | O59 | 15’6”-16’6” | Q | F | 13 | CHIP | |
| 5166 | O59 | 15’6”-16’6” | Q | F | 9 | CHIP | |
| 5167 | O59 | 15’6”-16’6” | Q | F | 61 | POLYHEDRON | |
| 5168 | O59 | 15’6”-16’6” | Q | F | 51 | CHUNK | |
| 5169 | O59 | 15’6”-16’6” | Q | F | 19 | CHIP | |
| 5170 | O59 | 15’6”-16’6” | Q | SW | 18 | CHIP | |
| 5171 | O60 | 17’0”-18’0” | Q | F | 58 | CASUAL CORE | |
| 5172 | O60 | 17’0”-18’0” | QZE | | 121 | COBBLE | |
| 5173 | O60 | 17’0”-18’0” | Q | F | 22 | CHUNK | |
| 5174 | O60 | 17’0”-18’0” | Q | F | 16 | CHIP | |
| 5175 | O60 | 17’0”-18’0” | Q | F | 14 | CHIP | |
| 5176 | O60 | 17’0”-18’0” | Q | F | 11 | CHIP | |
| 5177 | O60 | 17’0”-18’0” | Q | F | 13 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 5178 | O60 | 17'0"-18'0" | Q | F | 17 | CHIP | |
| 5179 | O60 | 17'0"-18'0" | Q | F | 13 | CHIP | |
| 5236 | O60 | 16'0"-17'0" | Q | F | 7 | CHIP | |
| 5236 | O60 | 16'0"-17'0" | C | F | 71 | INCOMPLETE FLAKE | |
| 5237 | O60 | 16'0"-17'0" | Q | F | 41 | CHUNK | |
| 5238 | O60 | 16'0"-17'0" | Q | F | 11 | CHIP | |
| 5239 | O60 | 16'0"-17'0" | Q | F | 23 | INCOMPLETE FLAKE | |
| 5240 | O60 | 16'0"-17'0" | Q | F | 14 | CHIP | |
| 5241 | O60 | 16'0"-17'0" | Q | F | 21 | INCOMPLETE FLAKE | |
| 5242 | O60 | 16'0"-17'0" | Q | F | 17 | CHIP | |
| 5243 | O60 | 16'0"-17'0" | Q | SW | 12 | CHIP | |
| 5244 | O60 | 16'0"-17'0" | Q | F | 20 | INCOMPLETE FLAKE | |
| 5245 | O60 | 16'0"-17'0" | Q | F | 23 | COMPLETE FLAKE | |
| 5246 | O60 | 16'0"-17'0" | Q | F | 15 | CHIP | |
| 5247 | O60 | 16'0"-17'0" | Q | F | 14 | CHIP | |
| 5333 | O60 | 18'0"-19'0" | QZE | | 65 | MANUPORT | |
| 5334 | O60 | 18'0"-19'0" | Q | SW | 42 | BIFACIAL RETOUCH PIECE | |
| 5335 | O60 | 18'0"-19'0" | Q | SW | 34 | CHUNK | X |
| 5336 | O60 | 18'0"-19'0" | Q | F | 31 | CHUNK | |
| 5337 | O60 | 18'0"-19'0" | Q | F | 23 | CHUNK | X |
| 5338 | O60 | 18'0"-19'0" | Q | F | 14 | CHIP | |
| 5339 | O60 | 18'0"-19'0" | QZE | F | 15 | CHIP | |
| 5340 | O60 | 18'0"-19'0" | Q | F | 19 | CHIP | |
| 5341 | O60 | 18'0"-19'0" | Q | F | 17 | CHIP | |
| 5342 | O60 | 18'0"-19'0" | Q | F | 14 | CHIP | |
| 5343 | O60 | 18'0"-19'0" | Q | F | 14 | CHIP | |
| 5344 | O60 | 18'0"-19'0" | Q | SW | 23 | CHUNK | |
| 5345 | O60 | 18'0"-19'0" | Q | SW | 14 | CHIP | |
| 5346 | O60 | 18'0"-19'0" | Q | F | 16 | CHIP | |
| 5347 | O60 | 18'0"-19'0" | Q | SW | 17 | CHIP | |
| 5348 | O60 | 18'0"-19'0" | Q | F | 20 | CHUNK | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 5349 | O60 | 18'0"-19'0" | Q | F | 16 | CHIP | |
| 5350 | O60 | 18'0"-19'0" | Q | F | 10 | CHIP | |
| 5351 | O60 | 18'0"-19'0" | Q | F | 12 | CHIP | |
| 5352 | O60 | 18'0"-19'0" | Q | SW | 18 | CHIP | |
| 5498 | P61 | 17'10"-18'10" | Q | F | 12 | CHIP | |
| 5499 | P61 | 17'10"-18'10" | Q | F | 9 | CHIP | |
| 5500 | P61 | 17'10"-18'10" | Q | F | 14 | CHIP | |
| 5501 | P61 | 17'10"-18'10" | Q | F | 8 | CHIP | |
| 5502 | P61 | 17'10"-18'10" | Q | F | 7 | CHIP | |
| 5503 | P61 | 17'10"-18'10" | Q | F | 9 | CHIP | |
| 5505 | P61 | 17'10"-18'10" | Q | F | 57 | CORE FRAGMENT | |
| 5506 | P61 | 17'10"-18'5" | QZE | F | 48 | CHUNK | |
| 5507 | P61 | 17'10"-18'10" | Q | F | 28 | CORE TRIMMING FLAKE | |
| 5508 | P61 | 17'10"-18'10" | Q | F | 16 | CHIP | |
| 5509 | P61 | 17'10"-18'10" | Q | SW | 15 | CHIP | |
| 5510 | P61 | 17'10"-18'10" | Q | F | 12 | CHIP | |
| 5511 | P61 | 17'10"-18'10" | Q | F | 10 | CHIP | |
| 5658 | O60 | 19'0"-20'0" | Q | SW | 10 | CHIP | |
| 5659 | O60 | 19'0"-20'0" | Q | F | 15 | CHIP | |
| 5660 | O60 | 19'0"-20'0" | Q | F | 13 | CHIP | |
| 5661 | O60 | 19'0"-20'0" | Q | F | 12 | CHIP | |
| 5662 | O60 | 19'0"-20'0" | Q | F | 12 | CHIP | |
| 5663 | O60 | 19'0"-20'0" | Q | SW | 10 | CHIP | |
| 5664 | O60 | 19'0"-20'0" | Q | F | 7 | CHIP | |
| 5665 | O60 | 19'0"-20'0" | QZE | VW | 48 | INCOMPLETE FLAKE | |
| 5666 | O60 | 19'0"20'0" | QZE | SW | 120 | INCOMPLETE FLAKE | X |
| 5667 | O60 | 19'0"20'0" | Q | F | 64 | CHOPPER CORE | |
| 5668 | O60 | 19'0"-20'0" | C | W | 82 | SINGLE PLATFORM | |
| 5669 | O60 | 18'0"-19'0" | Q | F | 10 | CHIP | |
| 5670 | O60 | 18'0"-19'0" | Q | SW | 8 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 5671 | O60 | 18'0"-19'0" | QZE | SW | 75 | CHUNK | |
| 5672 | O60 | 18'0"-19'0" | Q | F | 25 | CHUNK | |
| 5672 | O60 | 18'0"-19'0" | Q | F | 32 | COMPLETE FLAKE | |
| 5673 | O60 | 18'0"-19'0" | Q | F | 20 | CHUNK | |
| 5674 | O60 | 17'0"-18'0" | Q | F | 15 | CHIP | |
| 5675 | O60 | 17'0"-18'0" | Q | F | 14 | CHIP | |
| 5676 | O60 | 17'0"-18'0" | Q | F | 11 | CHIP | |
| 5677 | O60 | 17'0"-18'0" | Q | F | 12 | CHIP | |
| 5678 | O60 | 17'0"-18'0" | Q | F | 16 | CHIP | |
| 5679 | O60 | 17'0"-18'0" | Q | F | 13 | CHIP | |
| 5686 | O60 | 20'0"-21'0" | QZE | F | 29 | INCOMPLETE FLAKE | |
| 5687 | O60 | 20'0"-21'0" | QZE | F | 31 | INCOMPLETE FLAKE | |
| 5688 | O60 | 20'0"-21'0" | Q | F | 15 | CHIP | |
| 5689 | O60 | 20'0"-21'0" | Q | F | 14 | CHIP | |
| 5690 | O60 | 20'0"-21'0" | Q | W | 13 | CHIP | |
| 5691 | O60 | 20'0"-21'0" | Q | SW | 15 | CHIP | |
| 5692 | O60 | 20'0"-21'0" | Q | F | 14 | CHIP | |
| 5693 | O60 | 20'0"-21'0" | Q | F | 24 | INCOMPLETE FLAKE | |
| 5694 | O60 | 20'0"-21'0" | Q | F | 16 | CHIP | |
| 5695 | O60 | 20'0"-21'0" | Q | F | 12 | CHIP | |
| 5696 | O60 | 21'0"-22'0" | Q | F | 12 | CHIP | |
| 5697 | O60 | 21'0"-22'0" | Q | F | 14 | CHIP | |
| 5698 | O60 | 21'0"-22'0" | Q | F | 11 | CHIP | |
| 5699 | O60 | 21'0"-22'0" | Q | F | 12 | CHIP | |
| 5700 | O60 | 21'0"-22'0" | Q | SW | 16 | CHIP | |
| 5701 | O60 | 21'0"-22'0" | C | SW | 8 | CHIP | |
| 5701 | O60 | 21'0"-22'0" | QZE | | 82 | COBBLE FRAGMENT | |
| 5702 | O60 | 21'0"-22'0" | C | SW | 11 | CHIP | |
| 5705 | O60 | 21'0"-22'0" | QZE | SW | 49 | COMPLETE FLAKE | |
| 5706 | O60 | 21'0"-22'0" | QZE | F | 18 | CHIP | |
| 5707 | O60 | 21'0"-22'0" | Q | F | 17 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 5708 | O59 | 22’6”-23’6” | Q | F | 16 | CHIP | |
| 5708 | O59 | 22’6”-23’6” | Q | F | 9 | CHIP | |
| 5709 | O59 | 22’6”-23’6” | Q | F | 11 | CHIP | |
| 5710 | O59 | 22’6”-23’6” | Q | SW | 15 | CHIP | |
| 5711 | O59 | 22’6”-23’6” | Q | W | 13 | CHIP | |
| 5712 | O59 | 22’6”-23’6” | Q | W | 44 | CHUNK | |
| 5713 | O59 | 22’6”-23’6” | Q | F | 16 | CHIP | |
| 5714 | O59 | 22’6”-23’6” | Q | F | 16 | CHIP | |
| 5715 | O59 | 22’6”-23’6” | Q | | 58 | NATURAL | |
| 5716 | O59 | 22’6”-23’6” | Q | | 67 | MANUPORT | |
| 5741 | O60 | 22’0”-23’0” | Q | F | 51 | INCOMPLETE FLAKE | X |
| 5742 | O60 | 22’0”-23’0” | Q | SW | 40 | CHUNK | |
| 5743 | O60 | 22’0”-23’0” | Q | W | 33 | CHUNK | |
| 5744 | O60 | 22’0”-23’0” | Q | F | 18 | CHIP | |
| 5745 | O60 | 22’0”-23’0” | Q | F | 25 | CHUNK | |
| 5752 | P59 | 18’4”-19’4” | QZE | | 86 | MANUPORT | |
| 5753 | P59 | 18’4”-19’4” | QZE | | 131 | CASUAL CORE | |
| 5778 | O59 | 22’6”-23’6” | C | W | 9 | CHIP | |
| 5779 | O59 | 22’6”-23’6” | C | F | 16 | CHIP | |
| 5780 | O59 | 22’6”-23’6” | C | F | 16 | CHIP | |
| 5781 | O59 | 22’6”-23’6” | C | F | 10 | CHIP | |
| 5782 | O59 | 22’6”-23’6” | C | F | 9 | CHIP | |
| 5783 | O59 | 22’6”-23’6” | Q | F | 7 | CHIP | |
| 5784 | O59 | 22’6”-23’6” | Q | F | 8 | CHIP | |
| 5785 | O59 | 22’6”-23’6” | Q | SW | 10 | CHIP | |
| 5786 | O59 | 22’6”-23’6” | Q | SW | 9 | CHIP | |
| 5787 | O59 | 22’6”-23’6” | Q | W | 11 | CHIP | |
| 5788 | O59 | 22’6”-23’6” | Q | SW | 11 | CHIP | |
| 5789 | O59 | 22’6”-23’6” | Q | W | 7 | CHIP | |
| 5799 | N60 | 21’9”-22’9” | MSTONE | W | 5 | CHIP | |
| 5800 | N60 | 21’9”-22’9” | C | W | 9 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 5801 | N60 | 21'9"-22'9" | C | F | 6 | CHIP | |
| 5802 | N60 | 21'9"-22'9" | QZE | F | 10 | CHIP | |
| 5803 | N60 | 21'9"-22'9" | C | SW | 10 | CHIP | |
| 5804 | N60 | 21'9"-22'9" | Q | F | 6 | CHIP | |
| 5805 | N60 | 21'9"-22'9" | Q | F | 13 | CHIP | |
| 5806 | N60 | 21'9"-22'9" | Q | F | 12 | CHIP | |
| 5807 | N60 | 21'9"-22'9" | Q | SW | 10 | CHIP | |
| 5808 | N60 | 21'9"-22'9" | Q | F | 8 | CHIP | |
| 5809 | N60 | 21'9"-22'9" | C | F | 6 | CHIP | |
| 5810 | N60 | 21'9"-22'9" | Q | SW | 9 | CHIP | |
| 5811 | N60 | 21'9"-22'9" | Q | F | 13 | CHIP | |
| 5812 | N60 | 21'9"-22'9" | Q | SW | 15 | CHIP | |
| 5813 | N60 | 21'9"-22'9" | Q | SW | 12 | CHIP | |
| 5814 | N60 | 21'9"-22'9" | Q | SW | 10 | CHIP | |
| 5815 | N60 | 21'9"-22'9" | Q | F | 12 | CHIP | |
| 5816 | N60 | 21'9"-22'9" | Q | F | 16 | CHIP | |
| 5817 | N60 | 21'9"-22'9" | Q | F | 8 | CHIP | |
| 5818 | N60 | 21'9"-22'9" | C | F | 11 | CHIP | |
| 5819 | N60 | 21'9"-22'9" | Q | F | 27 | INCOMPLETE FLAKE | |
| 5820 | N60 | 21'9"-22'9" | Q | SW | 20 | CHUNK | |
| 5821 | N60 | 21'9"-22'9" | Q | F | 26 | INCOMPLETE FLAKE | |
| 5822 | N60 | 21'9"-22'9" | Q | F | 16 | CHIP | |
| 5823 | N60 | 21'9"-22'9" | Q | SW | 16 | CHIP | |
| 5824 | N60 | 21'9"-22'9" | Q | F | 26 | INCOMPLETE FLAKE | |
| 5825 | N60 | 21'9"-22'9" | Q | SW | 25 | INCOMPLETE FLAKE | |
| 5826 | N60 | 21'9"-22'9" | QZE | F | 32 | COMPLETE FLAKE | |
| 5827 | N60 | 21'9"-22'9" | Q | F | 42 | BIPOLAR CORE FRAGMENT | |
| 5828 | N60 | 21'9"-22'9" | Q | F | 33 | BIPOLAR CORE FRAGMENT | |
| 5829 | N60 | 21'9"-22'9" | Q | F | 26 | CHUNK | |
| 5830 | N60 | 211'9"-22'9" | Q | SW | 96 | CORE | |
| 5831 | N60 | 22'9"-23'9" | Q | F | 20 | INCOMPLETE FLAKE | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 5832 | N60 | 22'9"-23'9" | Q | F | 14 | CHIP | |
| 5833 | N60 | 22'9"-23'9" | Q | F | 15 | CHIP | |
| 5834 | N60 | 22'9"-23'9" | Q | W | 12 | CHIP | |
| 5835 | N60 | 22'9"-23'9" | Q | F | 14 | CHIP | |
| 5836 | N60 | 22'9"-23'9" | Q | SW | 13 | CHIP | |
| 5837 | N60 | 22'9"-23'9" | Q | F | 11 | CHIP | |
| 5838 | N60 | 22'9"-23'9" | Q | F | 11 | CHIP | |
| 5839 | N60 | 22'9"-23'9" | Q | F | 11 | CHIP | |
| 5840 | N60 | 22'9"-23'9" | Q | F | 13 | CHIP | |
| 5841 | N60 | 22'9"-23'9" | Q | F | 14 | CHIP | |
| 5842 | N60 | 22'9"-23'9" | Q | F | 11 | CHIP | |
| 5843 | N60 | 22'9"-23'9" | Q | F | 9 | CHIP | |
| 5844 | N60 | 22'9"-23'9" | Q | F | 7 | CHIP | |
| 5845 | N60 | 22'9"-23'9" | Q | F | 8 | CHIP | |
| 5846 | N60 | 22'9"-23'9" | Q | F | 8 | CHIP | |
| 5847 | N60 | 22'9"-23'9" | Q | F | 8 | CHIP | |
| 5848 | N60 | 22'9"-23'9" | Q | F | 9 | CHIP | |
| 5849 | N60 | 22'9"-23'9" | C | F | 13 | CHIP | |
| 5850 | N60 | 22'9"-23'9" | C | F | 10 | CHIP | |
| 5851 | N60 | 22'9"-23'9" | C | F | 12 | CHIP | |
| 5852 | N60 | 22'9"-23'9" | C | F | 7 | CHIP | |
| 5853 | N60 | 22'9"-23'9" | C | F | 11 | CHIP | |
| 5854 | N60 | 22'9"-23'9" | C | F | 8 | CHIP | |
| 5855 | N60 | 22'9"-23'9" | C | F | 8 | CHIP | |
| 5856 | N60 | 22'9"-23'9" | C | F | 12 | CHIP | |
| 5857 | N60 | 22'9"-23'9" | C | F | 13 | CHIP | |
| 5858 | N60 | 22'9"-23'9" | C | F | 8 | CHIP | |
| 5859 | N60 | 22'9"-23'9" | C | F | 8 | CHIP | |
| 5860 | N60 | 22'9"-23'9" | QZE | W | 115 | COMPLETE FLAKE | X |
| 5861 | N60 | 22'9"-23'9" | QZE | | 65 | COBBLE | |
| 5862 | N60 | 22'9"-23'9" | QZE | | 94 | CHOPPER CORE | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 6255 | O59 | 23'6"-24'6" | Q | F | 14 | CHIP | |
| 6256 | O59 | 23'6"-24'6" | Q | F | 12 | CHIP | |
| 6262 | O59 | 25'6"-26'6" | Q | | 18 | CHIP | |
| 6309 | O59 | 20'6"-21'6" | Q | F | 18 | CHIP | |
| 6310 | O59 | 20'6"-21'6" | Q | F | 12 | CHIP | |
| 6311 | O59 | 20'6"-21'6" | Q | F | 15 | CHIP | |
| 6315 | O59 | 21'6"-22'6" | Q | F | 7 | CHIP | |
| 6316 | O59 | 21'6"-22'6" | Q | F | 7 | CHIP | |
| 6317 | O59 | 21'6"-22'6" | C | SW | 14 | CHIP | |
| 6318 | O59 | 21'6"-22'6" | QZE | | 76 | MANUPORT | |
| 6319 | O59 | 21'6"-22'6" | C | SW | 40 | INCOMPLETE FLAKE | |
| 6355 | O59 | 23'6"-24'6" | Q | F | 14 | CHIP | |
| 6356 | O59 | 23'6"-24'6" | Q | SW | 12 | CHIP | |
| 6395 | O59 | 19'6"-20'6" | Q | F | 9 | CHIP | |
| 6396 | O59 | 19'6"-20'6" | Q | F | 9 | CHIP | |
| 6397 | O59 | 19'6"-20'6" | Q | F | 9 | CHIP | |
| 6398 | O59 | 19'6"-20'6" | Q | F | 8 | CHIP | |
| 6399 | O59 | 19'6"-20'6" | Q | F | 6 | CHIP | |
| 6400 | O59 | 19'6"-20'6" | QZE | SW | 34 | INCOMPLETE FLAKE | |
| 6408 | N60 | 20'9"-21'9" | Q | W | 56 | POLYHEDRON | |
| 6409 | N60 | 20'9"-21'9" | Q | F | 30 | RADIAL CORE | |
| 6410 | N60 | 20'9"-21'9" | Q | F | 29 | INCOMPLETE FLAKE | |
| 6412 | N60 | 20'9"-21'9" | Q | F | 15 | CHIP | |
| 6413 | N60 | 20'9"-21'9" | Q | SW | 14 | CHIP | |
| 6414 | N60 | 20'9"-21'9" | Q | F | 27 | INCOMPLETE FLAKE | |
| 6415 | N60 | 20'9"-21'9" | Q | F | 9 | CHIP | |
| 6416 | N60 | 20'9"-21'9" | Q | F | 11 | CHIP | |
| 6417 | N60 | 20'9"-21'9" | Q | F | 9 | CHIP | |
| 6418 | N60 | 20'9"-21'9" | Q | SW | 12 | CHIP | |
| 6419 | N60 | 20'9"-21'9" | Q | F | 9 | CHIP | |
| 6420 | N60 | 20'9"-21'9" | Q | SW | 11 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 6421 | N60 | 20’9”-21’9” | Q | F | 9 | CHIP | |
| 6422 | N60 | 20’9”-21’9” | Q | SW | 11 | CHIP | |
| 6423 | N60 | 20’9”-21’9” | Q | F | 10 | CHIP | |
| 6424 | N60 | 20’9”-21’9” | Q | SW | 10 | CHIP | |
| 6425 | N60 | 20’9”-21’9” | C | F | 26 | COMPLETE FLAKE | |
| 6426 | N60 | 20’9”-21’9” | Q | F | 17 | CHIP | |
| 6427 | N60 | 20’9”-21’9” | Q | F | 19 | CHIP | |
| 6428 | N60 | 20’9”-21’9” | Q | F | 26 | INCOMPLETE FLAKE | |
| 6429 | N60 | 20’9”-21’9” | Q | SW | 13 | CHIP | |
| 6430 | N60 | 20’9”-21’9” | Q | F | 10 | CHIP | |
| 6431 | N60 | 20’9”-21’9” | Q | F | 16 | CHIP | |
| 6432 | N60 | 20’9”-21’9” | Q | F | 18 | CHIP | |
| 6433 | N60 | 20’9”-21’9” | Q | SW | 14 | CHIP | |
| 6434 | N60 | 20’9”-21’9” | Q | F | 12 | CHIP | |
| 6435 | N60 | 20’9”-21’9” | Q | F | 13 | CHIP | |
| 6436 | N60 | 20’9”-21’9” | Q | F | 13 | CHIP | |
| 9316 | N60 | 12’9”-13’9” | Q | F | 32 | INCOMPLETE FLAKE | |
| 9317 | N60 | 12’9”-13’9” | Q | F | 54 | BIPOLAR CORE | |
| 9324 | O61 | 15’8”-16’8” | Q | F | 31 | INCOMPLETE FLAKE | |
| 9325 | O61 | 15’8”-16’8” | Q | F | 31 | CHUNK | |
| 9334 | | LIMBO PROV | Q | F | 22 | INCOMPLETE FLAKE | |
| 9491 | N63 | 13’7”-14’7” | Q | F | 19 | CHIP | |
| 9491 | N63 | 13’7”-14’7” | Q | F | 19 | CHIP | |
| 9491 | N63 | 13’7”-14’7” | Q | F | 24 | CHUNK | |
| 9491 | N63 | 13’7”-14’7” | Q | F | 79 | CORE | |
| 9493 | | NOT AVAILABLE | Q | F | 14 | CHIP | |
| 9494 | N63 | 13’7”-14’7” | Q | W | 11 | CHIP | |
| 9495 | N63 | 13’7”-14’7” | Q | F | 12 | CHIP | |
| 9496 | | NOT AVAILABLE | Q | F | 15 | CHIP | |
| 9497 | N63 | 13’7”-14’7” | Q | F | 14 | CHIP | |
| 9498 | N63 | 13’7”-14’7” | Q | F | 11 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 9499 | N63 | 13’7”-14’7” | Q | F | 15 | CHIP | |
| 9500 | N63 | 13’7”-14’7” | Q | F | 13 | CHIP | |
| 9501 | N63 | 13’7”-14’7” | Q | F | 14 | CHIP | |
| 9502 | | NOT AVAILABLE | Q | SW | 12 | CHIP | |
| 9506 | N63 | 13’7”-14’7” | Q | F | 8 | CHIP | |
| 9506 | N63 | 13’7”-14’7” | QZE | | 89 | CORE FRAGMENT | |
| 9507 | N63 | 13’7”-14’7” | QZE | | 95 | MANUPORT | |
| 9731 | N63 | 13’7”-14’7” | Q | F | 20 | INCOMPLETE FLAKE | |
| 9735 | M63 | 14’10”-15’10” | Q | F | 13 | CHIP | |
| 9749 | N59 | 11’10”-12’10” | Q | F | 21 | INCOMPLETE FLAKE | |
| 9758 | M60 | 14’2”-15’2” | Q | SW | 20 | CHUNK | |
| 9761 | M60 | 14’2”-15’2” | Q | F | 32 | BIPOLAR CORE REMAIN | |
| 9764 | N61 | 16’11”-17’11” | Q | W | 17 | CHIP | |
| 9765 | N61 | 16’11”-17’11” | Q | F | 15 | CHIP | |
| 9766 | N61 | 16’11”-17’11” | Q | SW | 22 | CHUNK | |
| 9932 | N59 | 14’0”-15’0” | Q | F | 13 | CHIP | |
| 10131 | M62 | 16’11”-17’11” | QZE | SW | 36 | COMPLETE FLAKE | |
| 10132 | M62 | 16’11”-17’11” | C | SW | 15 | CHIP | |
| 10133 | M62 | 16’11”-17’11” | Q | SW | 34 | INCOMPLETE FLAKE | X |
| 10134 | M62 | 16’11”-17’11” | Q | F | 11 | CHIP | |
| 10135 | M62 | 16’11”-17’11” | QZE | | 107 | SPLIT COBBLE | |
| 10467 | O59 | 17’6”-18’6” | Q | F | 16 | CHIP | |
| 10468 | O59 | 17’6”-18’6” | Q | F | 15 | CHIP | |
| 10469 | O59 | 17’6”-18’6” | Q | F | 11 | CHIP | |
| 10470 | O60 | 17’0”-18’0” | Q | W | 16 | CHIP | |
| 10471 | O60 | 17’0”-18’0” | Q | SW | 14 | CHIP | |
| 10472 | O59 | 22’6”-23’6” | Q | F | 15 | CHIP | |
| 10473 | N60 | 20’9”-21’9” | Q | SW | 13 | CHIP | |
| 10474 | O60 | 18’8”-19’1” | QZE | SW | 20 | COMPLETE FLAKE | |
| 10475 | P61 | 15’10”-16’10” | QZE | F | 48 | CHUNK | |
| 10476 | P61 | 15’10”-16’10” | Q | F | 25 | CHUNK | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 10477 | P61 | 15’10”-16’10” | Q | F | 21 | INCOMPLETE FLAKE | |
| 10478 | P61 | 15’10”-16’10” | Q | F | 18 | CHIP | |
| 10479 | P61 | 15’10”-16’10” | Q | SW | 16 | CHIP | |
| 10480 | P61 | 15’10”-16’10” | Q | F | 14 | CHIP | |
| 10481 | P61 | 15’10”-16’10” | Q | F | 14 | CHIP | |
| 10482 | P61 | 15’10”-16’10” | Q | W | 12 | CHIP | |
| 10483 | P61 | 15’10”-16’10” | Q | W | 10 | CHIP | |
| 10484 | P61 | 15’10”-16’10” | Q | F | 12 | CHIP | |
| 10485 | P61 | 15’10”-16’10” | Q | W | 11 | CHIP | |
| 10486 | P61 | 15’10”-16’10” | Q | F | 7 | CHIP | |
| 10487 | P61 | 16’10”-17’10” | C | F | 9 | CHIP | |
| 10488 | P61 | 16’10”-17’10” | Q | F | 13 | CHIP | |
| 10489 | P61 | 16’10”-17’10” | Q | F | 14 | CHIP | |
| 10490 | P61 | 16’10”-17’10” | Q | F | 11 | CHIP | |
| 10491 | P61 | 16’10”-17’10” | Q | F | 12 | CHIP | |
| 10492 | P61 | 16’10”-17’10” | Q | F | 11 | CHIP | |
| 10493 | P61 | 16’10”-17’10” | Q | F | 16 | CHIP | |
| 10494 | P61 | 16’10”-17’10” | Q | F | 12 | CHIP | |
| 10495 | P61 | 16’10”-17’10” | Q | F | 11 | CHIP | |
| 10496 | P61 | 16’10”-17’10” | Q | F | 9 | CHIP | |
| 10498 | O60 | 17’8”-18’8” | QZE | W | 92 | CHUNK | |
| 10499 | O60 | 20’0”-21’0” | Q | F | 14 | CHIP | |
| 10500 | O60 | 20’0”-21’0” | Q | F | 12 | CHIP | |
| 10501 | O60 | 20’0”-21’0” | Q | F | 9 | CHIP | |
| 10502 | O60 | 20’0”-21’0” | Q | F | 9 | CHIP | |
| 10503 | O60 | 20’0”-21’0” | Q | W | 10 | CHIP | |
| 10504 | O60 | 20’0”-21’0” | Q | F | 11 | CHIP | |
| 10505 | O60 | 20’0”-21’0” | Q | F | 9 | CHIP | |
| 10506 | O60 | 20’0”-21’0” | Q | F | 11 | CHIP | |
| 10507 | O60 | 20’0”-21’0” | Q | F | 7 | CHIP | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 10508 | O60 | 20'0"-21'0" | Q | F | 7 | CHIP | |
| 10509 | O60 | 20'0"-21'0" | Q | F | 9 | CHIP | |
| 10510 | O60 | 20'0"-21'0" | C | F | 8 | CHIP | |
| 10511 | O60 | 20'0"-21'0" | Q | SW | 20 | CHUNK | |
| 10512 | O60 | 20'0"-21'0" | Q | F | 9 | CHIP | |
| 10513 | O60 | 20'0"-21'0" | Q | SW | 12 | CHIP | |
| 10514 | O60 | 20'0"-21'0" | Q | SW | 14 | CHIP | |
| 10515 | O60 | 20'0"-21'0" | Q | W | 14 | CHIP | |
| 10516 | O60 | 20'0"-21'0" | Q | SW | 12 | CHIP | |
| 10517 | O60 | 20'0"-21'0" | Q | F | 14 | CHIP | |
| 10518 | O60 | 20'0"-21'0" | Q | F | 9 | CHIP | |
| 10519 | O59 | 7'6"-8'6" | | | 36 | NATURAL | |
| | O60 | 17'8"-18'8" | QZE | F | 91 | NATURAL | |
| 1881 | P61 | 11'11"-12'11" | QZE | F | 48 | CHUNK | |
| | O59 | 22'6"-23'6" | Q | | 70 | COBBLE | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 856 | M63 | 14'9"-15'9" | Q | SW | 29 | COMPLETE FLAKE | |
| 904 | M63 | 15'9"-16'9" | Q | SW | 29 | INCOMPLETE FLAKE | |
| 908 | M63 | 15'9"-16'9" | Q | F | 20 | INCOMPLETE FLAKE | |
| 951 | M63 | 9'9"-10'9" | Q | SW | 32 | COMPLETE FLAKE | |
| 1095 | M63 | 13'9"-14'9" | Q | SW | 14 | CHIP | |
| 1170 | M63 | 11'9"-12'9" | Q | W | 27 | NATURAL | |
| 1894 | M63 | 7'9"-8'9" | QZE | W | 57 | MANUPORT | |
| 1922 | M63 | 11'9"-12'9" | QZE | W | 71 | MANUPORT | |
| 2075 | M63 | 13'9"-14'9" | QZE | SW | 48 | INCOMPLETE FLAKE | |
| 3387 | M63 | 15'9"-16'9" | Q | F | 22 | INCOMPLETE FLAKE | |
| 5600 | M63 | 15'9"-16'9" | Q | F | 12 | CHIP | |
| 5602 | M63 | 15'9"-16'9" | Q | W | 10 | CHIP | |
| 5603 | M63 | 15'9"-16'9" | Q | F | 13 | CHIP | |
| 5604 | M63 | 15'9"-16'9" | Q | F | 12 | CHIP | |
| 9552 | M63 | 13'9"-14'9" | QZE | W | 38 | MANUPORT | |
| 9555 | M63 | 13'9"-14'9" | C | W | 58 | SPLIT COBBLE | |
| 9556 | M63 | 13'9"-14'9" | QZE | W | 81 | MANUPORT | |
| 9557 | M63 | 13'9"-14'9" | QZE | W | 95 | MANUPORT | |
| 9558 | M63 | 13'9"-14'9" | Q | W | 82 | CORE | |
| 9559 | M63 | 13'9"-14'9" | Q | F | 71 | COMPLETE FLAKE | |
| 9560 | M63 | 15'9"-16'9" | Q | SW | 32 | INCOMPLETE FLAKE | |
| 9561 | M63 | 13'9"-14'9" | QZE | W | 49 | SPLIT COBBLE | |
| 9563 | M63 | 11'9"-12'9" | QZE | W | 22 | INCOMPLETE FLAKE | |
| 9564 | M63 | 11'9"-12'9" | Q | W | 17 | CHIP | |
| 9565 | M63 | 11'9"-12'9" | Q | F | 17 | CHIP | |
| 9566 | M63 | 11'9"-12'9" | Q | F | 17 | CHIP | |
| 9567 | M63 | 11'9"-12'9" | Q | F | 20 | INCOMPLETE FLAKE | |
| 9568 | M63 | 11'9"-12'9" | Q | F | 14 | CHIP | |
| 9569 | M63 | 11'9"-12'9" | Q | F | 14 | CHIP | |
| 9635 | M63 | 14'10"-15'10" | Q | F | 14 | CHIP | |
| 9730 | M63 | 14'10"-15'10" | Q | F | 23 | CHUNK | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 9767 | M63 | 14’10”-15’10” | Q | W | 23 | INCOMPLETE FLAKE | |
| 10118 | L63 | 13’6”-14’6” | QZE | SW | 39 | INCOMPLETE FLAKE | |
| 10119 | L63 | 13’6”-14’6” | QZE | SW | 33 | INCOMPLETE FLAKE | |
| 10121 | L63 | 11’6”-12’6” | C | SW | 44 | INCOMPLETE FLAKE | |
| 10122 | L63 | 11’6”-12’6” | C | F | 26 | COMPLETE FLAKE | |
| 10123 | L63 | 11’6”-12’6” | Q | F | 24 | INCOMPLETE FLAKE | |
| 10124 | L63 | 11’6”-12’6” | Q | F | 27 | INCOMPLETE FLAKE | |
| 10125 | L63 | 11’6”-12’6” | Q | F | 11 | CHIP | |
| 10126 | L63 | 11’6”-12’6” | Q | F | 19 | CHIP | |
| 10127 | L63 | 11’6”-12’6” | Q | F | 11 | CHIP | |
| 10128 | L63 | 11’6”-12’6” | Q | F | 17 | CHIP | |
| 10129 | L63 | 9’6”-10’6” | Q | F | 14 | CHIP | |
| 10130 | L-M63 | MIXED | Q | F | 8 | CHIP | |
| 10136 | L63 | 12’6”-13’6” | Q | SW | 17 | CHIP | |
| 10137 | L63 | 12’6”-13’6” | Q | F | 24 | INCOMPLETE FLAKE | |
| 10138 | L63 | 12’6”-13’6” | Q | F | 20 | INCOMPLETE FLAKE | |
| 10139 | L63 | 12’6”-13’6” | Q | F | 11 | CHIP | |
| 10140 | L63 | 12’6”-13’6” | Q | F | 14 | CHIP | |
| 10141 | L63 | 12’6”-13’6” | Q | F | 10 | CHIP | |
| 10142 | L63 | 12’6”-13’6” | Q | F | 10 | CHIP | |
| 10143 | L63 | 12’6”-13’6” | QZE | W | 86 | MANUPORT | |
| 10364 | P60 | 11’5”-12’17” | Q | F | 39 | INCOMPLETE FLAKE | |
| 10365 | O60 | 8’3”-9’3” | Q | F | 23 | BIPOLAR CORE REMAIN | |
| 10366 | Q58 | 18’3”-19’3” | Q | F | 29 | CORE FRAGMENT | |
| 10367 | Q59 | 12’6”-13’6” | Q | F | 68 | BIPOLAR CORE | |
| 10368 | Q58 | 14’6”-15’6” | Q | F | 17 | CHIP | |
| 10370 | Q58 | 10’3”-11’3” | QZE | W | 24 | BIPOLAR CORE REMAIN | |
| 10371 | Q58 | 16’3”-17’3” | Q | F | 22 | INCOMPLETE FLAKE | |
| 10372 | Q58 | 16’3”-17’3” | Q | F | 12 | CHIP | |
| 10373 | J62 | 19’10”-20’10” | Q | F | 43 | CORE FRAGMENT | |
| 10374 | I62 | 19’10”-20’10” | Q | F | 40 | INCOMPLETE FLAKE | X |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 10375 | Q61 | 13'10"-14'10" | Q | F | 35 | CHUNK | |
| 10376 | L62 | 15'5"-16'5" | Q | F | 33 | BIPOLAR CORE REMAIN | |
| 10382 | Q58 | 18'3"-19'3" | Q | W | 21 | COMPLETE FLAKE | |
| 10383 | Q58 | 18'3"-19'3" | Q | F | 16 | CHIP | |
| 10384 | Q58 | 18'3"-19'3" | C | F | 15 | CHIP | |
| 10385 | P60 | 10'5"-11'5" | QZE | F | 40 | MANUPORT | |
| 10386 | O59 | 7'6"-8'6" | QZE | SW | 45 | COMPLETE FLAKE | |
| 10387 | Q58 | 17'3"-18'3" | Q | F | 22 | COMPLETE FLAKE | |
| 10388 | Q58 | 17'3"-18'3" | Q | W | 17 | CHIP | |
| 10389 | L63 | 13'6"-14'6" | Q | F | 22 | COMPLETE FLAKE | |
| 10404 | P60 | 14'4"-15'10" | Q | F | 32 | INCOMPLETE FLAKE | |
| 10405 | P60 | 14'4"-15'1O" | Q | F | 20 | CHUNK | |
| 10406 | P62 | 11"7"-12'7" | QZE | F | 19 | CHIP | |
| 10407 | O61 | 12'5"-1'7" | SS | F | 112 | MANUPORT | |
| 10408 | O61 | 12'5"-13'7" | Q | F | | | |
| 10409 | J63 | 20'10"-21'10" | Q | F | 36 | CHUNK | |
| 10410 | P62 | 17'0"-117'9" | Q | F | 28 | CORE TRIMMING FLAKE | |
| 10411 | K63 | 15'10"-16'10" | Q | F | 30 | INCOMPLETE FLAKE | |
| 10412 | N59 | 16'0"-17'0" | QZE | F | 16 | CHIP | |
| 10413 | N59 | 16'0"-17'0" | QZE | W | 14 | CHIP | |
| 10414 | N59 | 21'0"-22'0" | Q | F | 8 | CHIP | |
| 10415 | L63 | 10'6"-11'0" | IG | W | 93 | MANUPORT | |
| 10416 | L63 | 13'6"-14'6" | Q | F | 17 | CHIP | |
| 10417 | L63 | 13'6"-14'6" | Q | F | 13 | CHIP | |
| 10418 | L63 | 13'6"-14'6" | Q | F | 13 | CHIP | |
| 10419 | L63 | 13'6"-14'6" | Q | F | 12 | CHIP | |
| 10420 | L63 | 13'6"-14'6" | Q | F | 12 | CHIP | |
| 10421 | L63 | 13'6"-14'6" | Q | F | 9 | CHIP | |
| 10422 | L63 | 13'6"-14'6" | Q | F | 9 | CHIP | |
| 10423 | L63 | 13'6"-14'6" | Q | F | 7 | CHIP | |
| 10424 | M61 | 11'3"-12'3" | Q | W | 32 | CHUNK | |

| **No.** | **Sq.** | **Level** | **Raw Mat.** | **Condition** | **M/L** | **Type** | **Retouch** |
|---|---|---|---|---|---|---|---|
| 10425 | M61 | 11’3”-12’3” | Q | F | 19 | CHIP | |
| 10426 | M60 | 12’5”-13’5” | QZE | W | 45 | COMPLETE FLAKE | X |
| 10427 | L63 | 16’8”-17’8” | Q | F | 22 | INCOMPLETE FLAKE | |
| 10428 | L63 | 16’8”-17’8” | Q | F | 49 | BIPOLAR CORE REMAIN | |
| 10429 | L63 | 16’8”-17’8” | Q | F | 39 | BIPOLAR CORE REMAIN | |
| 10430 | L63 | 16’8”-17’8” | Q | F | 22 | CHUNK | |
| 10431 | L63 | 16’8”-17’8” | Q | W | 17 | CHIP | |
| 10432 | L63 | 16’8”-17’8” | Q | F | 11 | CHIP | |
| 10433 | L63 | 16’8”-17’8” | QZE | W | 69 | MANUPORT | |
| 10434 | K63 | | Q | F | 29 | INCOMPLETE FLAKE | |
| 10435 | M61 | 10’5”-11’5” | Q | SW | 21 | COMPLETE FLAKE | |
| 10436 | M61 | 10’5”-11’5” | Q | W | 14 | CHIP | |
| 10437 | M61 | 10’5”-11’5” | Q | W | 14 | CHIP | |
| 10438 | M61 | 10’5”-11’5” | Q | W | 11 | CHIP | |
| 10439 | M61 | 10’5”-11’5” | Q | W | 18 | CHIP | |
| 10440 | M61 | 10’5”-11’5” | C | W | 25 | CHUNK | |
| 10441 | M61 | 10’5”-11’5” | C | W | 21 | CHUNK | |
| 10442 | M61 | 10’5”-11’5” | C | W | 15 | CHIP | |
| 10443 | J63 | 15’10”-17’10” | Q | SW | 94 | CORE | |
| 10444 | K62 | 18’10”-19’10” | QZE | VW | 84 | CORE | |
| 10445 | J63 | 13’10”-14’10” | Q | SW | 56 | BIPOLAR CORE | |
| 10446 | J63 | 13’10”-14’10” | QZE | VW | 89 | MANUPORT | |
| 10447 | J63 | 13’10”-14’10” | Q | F | 18 | CHIP | |
| 10448 | K62 | 17’10”-18’10” | QZE | W | 97 | MANUPORT | |
| 10449 | M60 | 11’5”-12’5” | D | F | 91 | NATURAL | |
| 10450 | M60 | 11’5”-12’5” | QZE | W | 87 | CASUAL CORE | |

| No. | Sq. | Level | Raw Mat. | Condition | M/L | Type | Retouch |
|---|---|---|---|---|---|---|---|
| 10451 | K63 | | QZE | W | 114 | MANUPORT | |
| 10452 | K63 | | QZE | W | 49 | CORE TRIMMING FLAKE | |
| 10453 | K63 | | Q | F | 21 | NATURAL | |
| 10454 | K63 | | D | SW | 26 | INCOMPLETE FLAKE | X |
| 10455 | K63 | | Q | F | 22 | INCOMPLETE FLAKE | |
| 10456 | K63 | | Q | W | 16 | CHIP | |
| 10457 | Q60 | 10'8"-11'8" | DIAB | W | 56 | NATURAL | |
| 10458 | M61 | 17'10"-18'10" | Q | SW | 30 | CHUNK | |
| 10459 | N59 | 20'0"-21'0" | Q | SW | 45 | CHUNK | |
| 10460 | M63 | 13'9"-14'9" | Q | F | 28 | INCOMPLETE FLAKE | |
| 10461 | I63 | 18'10"-19'10" | C | SW | 27 | NATURAL | |
| 10462 | N59 | 18'0"019'0" | Q | SW | 13 | CHIP | |
| 10463 | L63 | 15'10"-16'10' | Q | SW | 24 | CHUNK | |
| 10464 | K64 | | QZE | W | 22 | NATURAL | |
| 10465 | K64 | | QZE | W | 20 | NATURAL | |